Title
Intergenerational attachment and psychological well-being during pregnancy

Author
Zachariah, Rachel Chacko

Publication Date
1984

Peer reviewed|Thesis/dissertation

INTERGENERATIONAL ATTACHMENT AND PSYCHOLOGICAL WELL-BEING DURING PREGNANCY

by

Rachel Chacko Zachariah

DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

DOCTOR OF NURSING SCIENCE

in the

GRADUATE DIVISION

of the

UNIVERSITY OF CALIFORNIA

San Francisco

Date University Librarian

DEC 31 1984

Degree Conferred: . . . . . .

University of California, San Francisco

School of Nursing

INTERGENERATIONAL ATTACHMENT AND PSYCHOLOGICAL WELL-BEING DURING PREGNANCY

Abstract

The purpose of this study was to explore the nature of human attachment from a life span perspective, with particular emphasis upon the phenomenon of attachment relationships of women during pregnancy and its influence on their psychological well-being.

Through the examination of propositions stemming from attachment and developmental theory, intergenerational attachment was viewed as attachment relationships of the individual developing over a life span, the component parts being mother-daughter, husband-wife, and maternal-fetal attachment. Social support was included along with attachment variables as there has been some evidence for positive correlations between social support and well-being. Attachments acquired in infancy were considered as prototypes of supportive interactions in adulthood, as proposed by social support theorists in recent years.

The study design represented a passive observational approach. Multiple correlational and regression techniques were used to analyze the relationships among study variables. The findings were based on data derived from self-completed structured questionnaires: Lederman's Prenatal Self-Evaluation Questionnaire, Cranley's Maternal-Fetal

Attachment Scale, Norbeck's Social Support Scale, and Dupuy's General Well-Being Schedule. The sample of 115 women, 18 through 35 years of age, had no preexisting medical conditions and were married and living with their husbands. Access to the woman was available through the prenatal classes at a small urban health unit in southwestern Canada.

Results of the study supported the hypotheses that mother-daughter attachment and husband-wife attachment had strong positive relationships with psychological well-being during pregnancy ($p < .05$). Study predictions that maternal-fetal attachment scores were related to mother-daughter attachment, husband-wife attachment, and social support scores of pregnant women were not supported. The findings confirmed that the intimate and unique attachment relationship developed over a life span by the pregnant woman with her own mother, and later on with her husband, had an impact upon the psychological well-being of women during pregnancy. Findings will provide new insights into the role of unique attachment relationships in promoting psychological well-being for pregnant women. Additionally, the results may be viewed as a means of identifying risks in emotional health of women during pregnancy. However, the findings related to maternal-fetal attachment raised several questions that need further investigation.

Author

Chair, Dissertation Committee

ACKNOWLEDGMENTS

I am deeply indebted to so many who have helped me discover the fullness of my gifts, to allow my spirit of inquiry to flourish, and my intellectual capabilities to be challenged and refined.

I am especially grateful to my family:

My partner in life, Kunju, whose support and encouragement to initiate and complete my doctoral education, by sharing every moment of hardship and triumph all the way through the program, has been truly an act of love and commitment;

My daughter, Reena, and son, Rex, whose exciting presence and patience during the long journey through academia and professional excellence made my simultaneous pursuit of family and career a mutually rewarding experience and a source of deep joy and satisfaction;

My mother, Sosamma, whose never-failing love and pursuit of knowledge and freedom of mind and spirit laid the foundation for my being and wove the basic threads of my attachments;

My father, Chacko, whose immense pride in my accomplishments, deep faith in the merit of education, and willingness to work hard so that nothing might impede my education from primary school through the defense of my dissertation, helped me to realize my goals in life;

My brother, Joseph, and sister-in-law, Susan, whose love, caring, and never-failing support made it possible for me to complete my education in a country other than my own;

My sisters, Annamma, Sosamma, Mariam, Saramma, and Jessy, my brothers-in-law, and the extended family for their love, support, understanding, and joyful appreciation of my achievements, which know no bounds of physical distance;

My mother-in-law, Mariamma, now deceased, whose love and courage in caring contributed to the strong relationships of the family.

I also am indebted to my dissertation committee, three exceptional scholars in the discipline, each of whom has shown genuine interest in my development as a scientist and with whom it has been a pleasure to work and learn:

Dr. Ramona Mercer, my sponsor, mentor, and chair, whose commitment to excellence and vast expertise provided me with the vigorous intellectual environment within which to develop as a scholar. Her excellent example, continual encouragement, and insistence upon maintaining excellence in performance have served as motivating forces in my development;

Dr. Afaf Meleis, my advisor and role model, whose excellent critique, guidance, and unwavering support during the entire doctoral education and whose deep commitment to the development of nursing science have stimulated and directed my thinking, analysis, and synthesis of ideas;

Dr. Jane Norbeck, whose perspectives on the world of scientific inquiry and expertise in clinical research have provided me with direction for research, and whose support, counsel, and example throughout the program have prepared me for clinical research.

To Dr. David C. Heilbron, Statistical Computing Center, for his expertise, guidance, consultation, sense of humor, and patience;

To Dr. Mark Hudes for his excellent counsel in data analysis and patience in explaining complex analysis;

To Mr. Donald B. Chambers for his expertise and valuable assistance with data analysis;

To Joan Healy and her staff, whose efforts always made the road easier and smoother, particularly in making the commencement ceremony an exciting event for my family and myself;

To my colleagues and friends in the doctoral program for caring so much and for sharing so freely the joys and frustrations of my journey through the doctoral education;

To Rev. and Mrs. P.T. Mammen and Ms. Barbara Wylie, whose interest in my work and welfare have allowed me to meet deadlines and remain sane;

To Lillian Douglass, Director, Nursing Department, my colleagues in the department, as well as the Board and administration of Medicine Hat College, for their support and encouragement;

To the administration of the health agency--Ms. Audrey Redmond, Ms. Fran Uryn, and Dr. K.J. Clementi--for allowing me to have access to the facilities and subjects and for their invaluable assistance, which contributed to the success of the study;

To the prenatal instructors for their interest, flexibility, and cooperation, which allowed me to contact the subjects in their groups;

To the staff of the health agency for their valuable assistance and to the pregnant women who generously consented to participate in the study;

To Carnie Gibbons who very efficiently typed my proposals and drafts leading to the dissertation;

To Cheyney Johansen, whose expert typing, critiquing, and editing of the manuscript were commendable and whose patience and tireless efforts added the finishing touches to my dissertation.

TABLE OF CONTENTS

CHAPTER III

CHAPTER IV

CHAPTER IV (continued)

CHAPTER V

CHAPTER VI

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Purpose of the Study

This study will explore the nature of human attachment from a life span perspective, with particular emphasis upon the phenomenon of intergenerational attachment relationships between the pregnant woman and her mother, her husband, and the fetus and the influence of these attachments on her psychological well-being. Pregnancy is a critical stage of transition in life that brings about changes in the physiological and psychosocial development of the individual. In addition, the process of bringing forth a new individual into the family provides for the beginning of a unique attachment relationship in the life of the developing fetus and the mother. This also causes changes in the intimate personal ties the pregnant mother has with significant others (Ballou, 1978a). In order to fully examine the phenomenon of human attachment over an individual's life span, the developmental stage of pregnancy is selected with its unique place of holding three important relationships in life as very crucial.

The unique relationships that matter most are characteristically those with loved persons--husband or wife, parents, children, dearest friend--and sometimes to particular places--a home or personal

territory--that are invested with the same loving qualities. These specific relationships, which are experienced as unique and irreplaceable, seem to embody most crucially the meaning of person's lives (Marris, 1982). If these bonds are lost, the loved one suffers grief and, in the depth of grieving, the bereaved cannot be consoled by any substitute relationship. This quality of uniqueness in the relationships that matter most to individuals, because it is inherently difficult to understand, is often ignored or disparaged in the organization of social relationships (Marris, 1982, p. 185).

The involvement in unique relationships begins early in life, as the work of John Bowlby and his colleagues have shown. Also, a child's attachment to specific nurturing figures becomes crucial to its well-being. No amount of quality of care from others can altogether help overcome the anxiety of separation from the nurturing figure. Also, adult bonds seem to grow out of these earliest attachments.

Several authors maintain that the period of pregnancy contains certain psychological developmental tasks including unique relationships, the successful mastery of which are necessary for healthy birth and parenting (Bibring, Dwyer, Huntington, & Valenstein, 1961; Cohen, 1979; Deutsch, 1945; Leifer, 1977; Rubin, 1975). These tasks include the initial incorporation of the fetus and gradual heightening of emotional affiliation with the fetus as part of self, followed by gradual separation from the fetus after quickening in preparation for letting go of the fetus during delivery. There is evidence from observation of human beings in various cultures that bonds of attachment develop between mother and child (fetus) before birth. There are also patterns of maternal attachment behavior observed following birth both

in humans and animals. The earliest experience of attachment to a mothering figure must, in any society, establish in a young child the predisposition to understand nurturing relationships that share the same qualities; they are nurturing, can claim priority, and are more or less exclusive (Marris, 1982, pp. 198-199). Purposes and feelings become structured very early in life through vitally important relationships to specific individuals. As Bowlby (1958) wrote,

> No variable[s] . . . have more far-reaching effects on personality development than have a child's experiences within his family; for, starting during his first months in his relations with both parents, he builds up working models of how attachment figures are likely to behave towards him in any of a variety of situations; and on those models are based all his expectations, and therefore all his plans, for the rest of his life. (p. 369)

Since the earliest attachment experienced by an individual is to his/her own mother, this can become a prototype of later attachment relationships in life. This also leads to the view that the individual's unique attachment relationship with the mother will influence future relationships with the individual's husband or wife and children. In case of a pregnant woman, the unique attachment relationships with the mother will influence her relationship with her husband and the developing fetus.

During critical periods of transition in life, the attachment relationships change in order to accommodate the new individual's needs. Changing patterns of mother-daughter relationships during pregnancy have been documented by Ballou (1978a, 1978b) and Bibring (1959) from their study of the experience of pregnancy. Also, the effects of positive relationships between the pregnant woman and her mother and husband have been documented (Cohen, 1974).

This study will focus on the influence of the original attachment relationship of the woman to her mother as it influences her current relationship with her husband and her developing relationship between herself and her fetus and the impact of these relationships on her psychological well-being.

Background for the Study

Several theorists and clinicians have studied mother-child attachment and have proposed the significant role of early attachment relationships on the psychological well-being of the individual in later life (Ainsworth, 1969; Bowlby, 1969; Erikson, 1963). The attachment that is established between child and mother serves as the foundation for future attachment relationships.

Johnson (1961) has suggested the affiliative system as a subsystem, the earliest developed and interrelated with other important subsystems of human behavioral functioning. With Johnson's conceptual model, nursing is defined as an external regulatory force that assists the individual to achieve system balance and stability (Johnson, 1961).

Several researchers and clinicians have documented variations on the levels of psychological well-being of women during a pregnancy, which is a maturational crisis in the individual's life (Benedek, 1956; Bibring, 1959; Bibring, Dwyer, Huntington, & Valenstein, 1961; Caplan, 1961; Deutsch, 1945). A number of researchers have documented symptoms of emotional disequilibrium during pregnancy--heightened anxiety, ambivalence, introversion, depression, and mood disturbance (Colman, 1969; Colman & Colman, 1973; Glazer, 1980; Leifer, 1977; Lubin, Gardner,

& Roth, 1975; Norbeck & Tilden, 1983; Shereshefsky & Yarrow, 1973; Standley, Soule, & Capans, 1979).

Attachments of the pregnant woman with her mother and husband have been documented as important factors in her adaptation to pregnancy (Ballou, 1978a, 1978b; Westbrook, 1978). In a prospective, longitudinal study of 12 primiparas from 10 weeks gestation to three months postpartum, Ballou (1978a) described women's reconciliation, renegotiation, and resolution of primary relationships as being central to the transition to the maternal role. The husband's role with maternal and paternal features assisted the wives in meeting their dependency needs. Westbrook (1978) pointed out that positive martial relationships correlated with calmer psychological roles and positive attitudes toward childbearing.

Several researchers have documented the importance of the mother-daughter relationship during pregnancy (Ballou, 1978a, 1978b; Deutsch, 1945; Lederman & Lederman, 1979; Leifer, 1980; Uddenberg, 1974; Wenner, Cohen, Weigert, Kearnes, Ohaneson, & Fearing, 1969). Lederman and Lederman (1979) examined the relationship of the pregnant woman with her mother in relation to six psychological dimensions during pregnancy. She concluded that a good relationship with one's mother makes a solid foundation for identifying a motherhood role of one's own and that it is associated with a reasonable degree of self-confidence regarding motherhood, with less fear and anxiety about pregnancy and childbirth. It was also related to physiological measures of progress of labor as well (Crawford, 1968; Lederman, Lederman, Work, & McCann, 1978, 1979; Uddenberg, Fagerstrom, & Hakanson-Zaunders, 1976).

Social support theorists consider attachment acquired in infancy as a prototype and precursor of supportive interactions in adulthood (Kahn & Antonucci, 1980). Kahn and Antonucci also proposed that a strong supportive relationship during adulthood assists the individual to cope better with the stresses of his/her environment. The significant role of life stress and social support in the psychological well-being of women during pregnancy has been explored by several researchers (Cohen, 1970, 1979; Norbeck & Tilden, 1983; Nuckolls, Cassell, & Kaplan, 1972). Cohen proposed that crisis during pregnancy may hinder positive attachment with the fetus. These studies have not explored the interrelationships of the attachment variables of mother-daughter and husband-wife with maternal-fetal attachment, social support, and psychological well-being of women during pregnancy. Also, there is a lack of studies examining attachment relationships from a lifespan perspective. There has not been adequate appreciation for the psychological adaptations and roles inherent in a woman's adjustment to the stresses of pregnancy. Thus, systematic efforts to identify factors that contribute to low levels of psychological well-being are essential for the prevention of mental health problems in childbearing women.

The impetus for this study was based on several factors. First, the consensus in the literature points to pregnancy as a period of changes in the psychological and physiological processes taking place during the maturational crisis of pregnancy and the resulting changes in unique attachment relationships. The psychological factors during pregnancy have been the focus of interdisciplinary research.

The patterns of normal attachment behaviors, their changes during pregnancy, and their relationship to the psychological well-being of the

pregnant woman need to be identified. This will help in the identification of stresses experienced during the period of pregnancy in terms of maintaining normal patterns of attachment. There is also a need to identify normal attachment behaviors specific to this period in order to develop knowledge that will serve as a base for identifying nursing interventions that will assist in maintaining equilibrium and stability in psychological well-being of the individual and family. Therefore,, exploring the normal attachment relationships with a healthy pregnant population was considered important. One cannot make meaningful statements regarding abnormality, whether physical or mental, without regard to the normal population (Medwar, 1967).

Research on childbirth has focused on the pathological aspects of childbirth rather than the normal (Jordan, 1980). The investigator's experience as a nurse-midwife with childbearing families in two different parts of the world has revealed the importance of the period of pregnancy as a critical time for promotion of psychological well-being for the pregnant woman and her family. Intimate attachment relationships between generations in extended family situations often seem to serve as key factors in maintaining the psychological well-being of individuals, particularly during periods of crisis.

The importance of attachment between the pregnant woman and her mother seems to strengthen during pregnancy. For example, one of the family traditions of South India requires bringing the pregnant woman, during the seventh month of pregnancy, to stay with her mother until 56 days after delivery. This tradition seems to emphasize the significance of mother-daughter attachment and support from family

during pregnancy. This practice also allows adequate time for the mother and daughter to spend together reminiscing about earlier experiences of the mother on an adult to adult basis. As Lederman and Lederman (1979) pointed out, this sharing of experiences between mother and daughter promotes confidence and emotional well-being in the daughter. The mother-daughter attachment, when strengthened, also assists the daughter in establishing comfortable feelings and techniques of breast-feeding and adequate confidence in caring for the baby. The investigator's experience and observations as a nurse-midwife in India, delivering babies at home with mother, husband, and relatives available in the home, has reinforced the significant role of attachment relationships of the pregnant woman in promoting and maintaining her well-being. Despite the trend toward more natural birth in the Western hemisphere, the dominant practice is to handle childbirth as a medical event.

This study afforded the opportunity to investigate the relationships between intimate attachment relationships from an intergenerational perspective during a transitional stage in an individual's life. Studies investigating intimate relationships during pregnancy have usually examined husband/partner influences on outcomes of pregnancy. This study examined the influence of husband-wife attachment and mother-daughter attachment on psychological well-being during pregnancy, controlling for confounding variables. Little systematic attention has been given to the impact of intimate attachment relationships on the psychological well-being of women during pregnancy.

Significance of the Study

The significance of the study derives from both theoretical and clinical perspectives. Evolving attachment relationships of the individual need to be understood from developmental, social, cultural, and ecological perspectives in order to interpret observations relating to them. While the study does not test all of these factors, it provides findings in relation to the usefulness of a selected theoretical framework in the study of attachment. It tests the theoretical stances of Bowlby and Erikson in terms of relationships between early original attachment and later attachment. The study extends these relationships into adulthood, testing the propositions in relation to intergenerational attachments.

The study examines the significance of human attachment in relation to health during pregnancy. In this regard, findings of the study will be particularly useful to maternity health care providers. Since the negative effects of fears and anxieties during pregnancy upon the course of labor and delivery have been consistently documented (Davids & DeVault, 1962; Grimm, 1961; Lederman & Lederman, 1979; McDonald & Christakos, 1963), the understanding of the significance of these variables on the psychological well-being of women during pregnancy will be of considerable interest. Also, since psychosocial factors and social support have been correlated with complicated outcomes of pregnancy, the findings take on particular importance (Norbeck & Tilden, 1983; Nuckolls et al., 1972). This study further refines the constructs for research.

It is important to have relatively well-delineated behavior responses or patterns isolated and described in a number of cultures through the work of different disciplines (Johnson, 1961). The findings of the study relating to the significance of intimate attachment relationships of the individual adds support to the mainstream of research interest in this area, not only from nursing and health care but from other disciplines as well.

CHAPTER II

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Developmental and attachment theories provided the overall conceptual framework of this research. Three major concepts--attachment (affectional bond), social support, and psychological well-being--and their interrelationships are addressed within this framework. The following section describes, defines, and discusses these concepts and explains their conceptual linkage within a developmental and attachment framework. Erikson's (1963, 1968) developmental theory and Bowlby's (1979) attachment theory are combined, as the two together explain the unique relationships between mother and infant and the psychological well-being of the individual as it is maintained through the development of unique nurturing relationships with others.

Theoretical Framework for Attachment, Social Support and Psychological Well-being

For the purpose of this study, attachment is viewed as a developmental process that continually evolves across the life span. In defining attachment, Erikson's definition of intimacy and Bowlby's definition of attachment will be combined. Mother-daughter attachment and husband-wife attachment during pregnancy will be explained using

Bowlby's theory of attachment and Erikson's theory of psychosocial development. Both of these theories are selected since what is lacking in Bowlby's theory is explained by Erikson's theory. Bowlby has defined attachment theory as a way of conceptualizing the propensity of human beings to make strong affectional bonds to particular others. As a body of theory, Bowlby deals with the same phenomena that have been dealt with in terms of "dependency need" or "object relations" during the course of healthy development of affectional bonds or attachments, initially between child and parent and later between adult and adult. The forms of behavior and the bonds to which they lead are present and active throughout the life cycle and are by no means confined to childhood. The goal of attachment behavior is to maintain certain degrees of proximity to or communication with the discriminated attachment figure(s) (Bowlby, 1979). Erikson defined enduring relationships in adults in terms of intimacy. Intimacy for Erikson is the capacity to commit oneself to concrete affiliations and partnerships and to develop the ethical strength to abide by such commitments, even though they may call for significant sacrifices. Predisposing to this capacity, the abilities of basic trust and ego identity are needed (Erikson, 1963).

Erikson's theory presumes the following sequence in terms of major points in the life cycle. Basic trust developed during early childhood is clearly a prerequisite for identity formation, and identity formation is a prerequisite for an individual to form mature sexual relationships during adulthood. It is clear from Erikson's writings that the stage of identity versus identity diffusion precedes the critical and crucial

stage of intimacy versus isolation. A quotation from Erikson (1968) may clarify this.

> It is only when identity formation is well on its way that true intimacy - which is really a counterpointing as well as fusing of identities - is possible. Sexual intimacy is only part of what I have in mind, for it is obvious that sexual intimacies often precede the capacity to develop a true and mutual psychosocial intimacy with another person, be it in friendship, in erotic encounters, or in joint inspiration. The youth who is not sure of his identity shies away from interpersonal intimacy or throws himself into acts of intimacy which are promiscuous without true fusion or real self-abandon. (p. 135)

The foundation of identity is basic trust, the ability, as Erikson says, to see oneself as having continuity and sameness and to act accordingly (Goethals, 1976, p. 532).

Some empirical research has been done in the area of early mother-infant attachment. There has been no empirical research in the area of Erikson's concept of basic trust developed through mother-infant relationships. Erikson's theory does not explain how failure to successfully complete a developmental stage is corrected later in the individual's life cycle. Bowlby suggests disruptions in an individual's mental health are due to failure of development of maternal attachment. Both Erikson and Bowlby believe incompletion of earlier tasks adds to difficulty with later tasks, but that they may be accomplished, although perhaps less effectively. Erikson emphasizes culture in the study of psychosocial development.

Conceptual formulations about adult attachment relationships and the methodological strategies employed in studies should be derived from how a culture prescribes the norms related to attachment. According to Erikson, developmental patterns are, of necessity, consequent on the developmental goals accepted by a culture.

Attachment is defined by theorists differently according to the variations in their theoretical orientations. The phenomena grouped under the term "attachment" have come to provide a central focus in diverse approaches to social development. The literature contains a wide range of conceptualizations of attachment and positions with respect to the theoretical and methodological issues. Since attachment has not been specifically identified with a well articulated theoretical system, various assumptions have been proposed concerning the motivational and theoretical status of the term. For the same reason, there is less agreement on which behavioral manifestations should be labelled attachment. A great many terms have been introduced to describe and explain behavior patterns involving strong enduring bonds between individuals.

Definitions of Attachment

Bowlby (1979): has defined attachment theory as a way of conceptualizing the propensity of human beings to make strong affectional bonds to particular others.

Ainsworth (1972): defined attachment as "an affectional tie or bond that one individual forms between himself and another specific individual. Attachments are enduring."

Erikson (1963): defined enduring relationships in terms of intimacy. Intimacy, for Erikson, is the capacity to commit oneself to concrete affiliations and partnerships and to develop the ethical strength to abide by such commitments even though they may call for significant sacrifices and

compromises. Predisposing to this capacity, the abilities of basic trust and ego identity are needed.

Neki (1975): stated that bonding between dependence and dependability is what has been termed as attachment. Dependence and dependability are mutually reciprocal in every way. While dependence is characterized by helplessness, dependability is characterized by altruistic helpfulness.

Sullivan (1953): defined intimacy similar to Erikson, with an emphasis on collaboration, but referred to the feelings of sensitivity to another person. Sullivan stated that when the satisfaction or security of another person becomes as significant as one's own satisfaction or security, love exists. The difference between Erikson and Sullivan is the disagreement about when the onset of this capacity arises in human development. The former claimed it develops in the stage of early adulthood, whereas the latter stated that it occurs in preadolescence.

Weiss (1974): defined attachment as one of six categories of functions of social support which refers to attachment. The others are social integration, opportunity for nurturance, measurement of worth, sense of reliable alliance, and obtaining guidance.

It is evident from the above definitions and discussion that the basic trust or bond developed between mother and child is considered crucial in the development of the individual's intimate relationships in later life. Further investigation is needed to describe these adult attachment relationships. Also, it is unknown at this point whether the

existing attachment relationships of the pregnant woman influence the developing attachment with her fetus.

The next section will focus upon the "classical" theoretical approaches in the study of attachment. Primary emphasis will be placed upon attachment theory advanced by Bowlby and the psychosocial theory of Erikson. Both of these theories have originated from psychoanalytic theory, yet both of them are different from the psychoanalytic group. Moving away from the early concept of biologic determinism, these theorists have given more attention to the ego (as opposed to the id) and have acknowledged the effect of society and the environment.

Object Relations, Dependency, and Attachment

"Object relations", "dependency", and "attachment" are concepts that, although overlapping, have developed in different theoretical traditions and have focused from the beginning upon different sets of problems in different contexts. The chief point of overlap is, of course, concern with the origins and development of the infant's first interpersonal relationship, his relationship with his mother or mother figure. Recently there has been a tendency toward convergence of the several major theoretical traditions upon the points of overlap.

Object relations. Anna Freud (1965) defined true object relations as "the state of object constancy, which enables a positive inner image of the object to be maintained, irrespective of either satisfaction or dissatisfaction". The baby, upon achieving object constancy, clearly perceives his mother as a person separate from himself (Ainsworth, 1969). There are three main stages in the development of object

relations: 1) an undifferentiated or objectless stage, 2) a transitional stage, and 3) a stage of object relations.

The newborn response, even the most complex, is tied to visceral, autonomic, emotional organizations rather than to organization based on perceptual discrimination of the environment. Anna Freud (1965) tied the origin of the object relations to need gratification. When the baby is not under tension, he is self-centered, self-sufficient, or narcissistic. The first occasion of wish fulfillment and pleasure establish centers of interest to which libidinal energy becomes attached. At first the infant does not love his mother but cathects the experience of feeding.

Dependency. Social learning theorists have, for the most part, been concerned with dependency rather than with attachment, although recently some have shifted their interest from generalized relationship implied in "dependency" to the specific relationship implied by "attachment". Gewirtz (1972), in an attempt to integrate the concepts of dependency and attachment, suggested that attachment is focused and directed toward one or two specific figures, whereas dependency is generalized toward a class of persons. According to both the psychoanalytically and ethologically oriented points of view, a prerequisite of attachment (or object relations) is that the object of attachment be conceived as having a permanent existence in space and time, which is independent of present perception. Gewirtz used similar concepts to account for both dependency and attachment, holding that they are best conceptualized as abstractions for classes of functional relationships involving the positive stimulus control over a wide variety of an individual's responses to stimuli provided either by a

class of persons (dependence) or by a particular person (attachment). Further, attachment is seen as a form of dependence of the behavior systems of a person upon the unique physical and behavioral stimuli provided by a particular other person (or a very few individuals). Both dependency and attachment are acquired by a conditioning of various behavior systems such as approach, orientation, regarding, following, remaining near, touching, smiling, and vocalizing with respect to a specific person or to a class of persons (Ainsworth, 1969).

Although the term dependency has been used by some psychoanalysts to characterize the infant's preobjectal relations, it is especially linked to social learning theories. Dependency was defined at first as a learned drive, acquired through its association with the reduction of primary drives. Dependency is viewed by learning theorists as a class of behaviors learned in the context of an infant's dependency behaviors which the mother reinforced in the course of her care and interaction with him. Dependence connotes a state of helplessness, seeking not only contact with and proximity to others, but also help, attention, and approval. What is sought and received is significant, but not the person from whom it is sought and received.

Do dependency relationships develop concurrently with independence? Bowlby (1969) noted the great degree of individual variation that exists in maintaining ties to others. Further, he noted that for most adults attachments based on anaclitic or dependent ties continue to exist in adulthood and old age, with such ties extended even to institutions such as the college or university. The paradox is that such dependency is readily acknowledged to exist, yet our model of life-span development is

one that emphasizes a developmental line from dependency to self-reliance (A. Freud, 1965).

Neki (1975) presented a different view of dependency, interdependence, and dependability from a cultural perspective. Goldfarb (1969) discussed the two types of personality orientations as achievement-oriented (independence-oriented) and approval-oriented (dependence-oriented). What is the impact of the two types of orientations on attachment relationships of the pregnant woman with her mother and her husband?

Because of the preoccupation with orality and with the concept of primary narcissism, psychoanalytic writers--except for Balint, Escalon, and Sander--have perceived the infant as passive in relation to his environment rather than in interaction with it (Ainsworth, 1969). Consequently, they have viewed learning as passive, associative learning. Piaget's (1952) account of development, in contrast, relied upon the active processes of assimilation and accommodation; the developmental modifications of structures already present come about through active organism/environment interactions. The typical ethological discussions of infant-mother interaction emphasizes the important role of infant behaviors both in eliciting maternal responses and in active proximity-seeking (Ainsworth, 1969).

Attachment. Both Bowlby (1969) and Ainsworth (1967) proposed that the behaviors through which attachment develop are comparable to Piaget's (1952, 1954) initial schemata. Piaget's theory of sensorimotor development seems a viable alternative to current learning theories and describes the background in which attachment may develop more clearly. As Piaget has implied, the infant seems to be learning to bring the

environment under his control. The operant conditioners through environmental manipulation "shape" behavior. The infant, through manipulation of the environment, seems to be shaping his own behavior (Ainsworth, 1969).

Bowlby (1958, 1969), a psychoanalyst in the tradition of object relations theory, not only opposed the view of interpersonal ties as secondary drives that have developed on the basis of gratification of primary drives, but urged an updating of psychoanalytic instinct theory to a view congruent with present day biology. The model that Bowlby proposed incorporated control systems theory with ethological principles, making it possible to view man's attachment behavior in an evolutionary context, as comparable to attachment behavior in other species, without minimizing the complexity or flexibility of nature of attachment behavior in humans. His model is interactional throughout. The infant's initial equipment, genetically programmed as it is, develops through his interaction with his environment. The person is always viewed in a social context, with his attachment behaviors interlocking with reciprocal behavior of others (Ainsworth, 1969).

Ainsworth leans toward a definition that equates love and attachment. At present, there is no set of indices in terms of which strength or intensity of attachment can be assessed, for all behavioral indices are affected by ambivalence, anxiety, stress, separation, and isolation. Attachment is a synonym of love; dependency is not. Those in the psychoanalytic tradition use "object" and "love object" interchangeably in the context of attachment relationships. Both Bowlby (1965) and Ainsworth (1967) used "growth of love" rather than "growth of attachment" in their publications. Harlow (1958) entitled his first

paper on attachment behavior "The Nature of Love", but subsequently he has been consistent in referring to "affectional systems".

To summarize the attachment frameworks of Bowlby and Erikson, attachment behavior is conceived by Bowlby as any form of behavior that results in a person attaining or retaining proximity to some other differentiated and preferred individual, who is usually conceived of as stronger and/or wiser. Attachment behavior is held to characterize human beings from the cradle to the grave. It includes crying and calling, which elicit care, following and clinging, and also strong protest should a child be left alone or with strangers. With age, the frequency and the intensity with which such behavior is exhibited diminish steadily. Nevertheless, all these forms of behavior persist as an important part of man's behavioral environment. In adults these behaviors are especially evident when a person is distressed, ill, or afraid. The particular patterns of attachment behavior shown by an individual depend partly on his present age, sex, and circumstances and partly on the experiences he has had with attachment figures earlier in his life.

As a way of conceptualizing proximity-keeping in attachment theory, in contrast to dependency theory, Bowlby (1979) emphasized the following features. The first is specificity, as attachment behavior is directed toward one or a few specific individuals, usually in a clear order of preference. The second feature deals with direction. An attachment endures, usually for a large part of the life cycle. Although during adolescence early attachment may attenuate and become supplemented by new ones, and in some cases is replaced by them, early attachments are not easily abandoned and they commonly persist. Thirdly, there is

engagement of emotion. Many of the most intense emotions arise during the formation, maintenance, disruption, and renewal of attachment relationships. The formation of a bond is described as falling in love, maintaining a bond as loving someone, and losing a partner as grieving over someone. Similarly, threat of loss arouses anxiety and actual loss gives rise to sorrow, while each of these situations is likely to arouse anger. The unchallenged maintenance of a bond is experienced as a source of security and the renewal of a bond as a source of joy. Because such emotions are usually a reflection of the state of a person's affectional bonds, the psychology and psychopathology of emotion is found to be in large part the psychology and psychopathology of affectional bonds.

A fourth feature as proposed by Bowlby is ontogeny. In the great majority of human infants, attachment behavior to a preferred figure develops during the first nine months of life. The more experience of social interaction an infant has with a person, the more likely is he to belong in attachment to that person. For this reason, the principal mothering person becomes the child's principal attachment figure. Attachment behavior remains readily activated until near the end of the third year; in healthy development it becomes gradually less readily activated thereafter.

Another feature of attachment behavior is learning. Whereas learning to distinguish the familiar from the strange is a key process in the development of attachment, the conventional rewards and punishments described by experimental psychologists play only a small part. Indeed, an attachment can develop despite repeated punishment from the attachment figure. Attachment behaviors are activated by

certain conditions and terminated by others. Among activating conditions are strangeness, hunger, fatigue, and anything frightening. Terminating conditions include sight or sound of the mother figure and, especially, happy interaction with her. When attachment behavior is strongly aroused, termination may require touching or clinging to the mother figure and/or being cuddled by her. Conversely, when the mother figure is present or her whereabouts are known, a child ceases to show attachment behavior and, instead, explores his environment.

The last feature of attachment behavior is its biological function. Attachment behavior occurs in the young of almost all species of mammal, and in a number of species it persists throughout adult life. Although there are many differences of detail between species, maintenance of proximity by an immature animal to a preferred adult, almost always the mother, is the rule, which suggests that such behavior has survival values (Bowlby, 1969). Bowlby has argued that by far the most likely function of attachment behavior is protection, mainly from predators. Thus, attachment behavior is conceived by Bowlby as a class of behavior distinct from feeding behavior and sexual behavior and of at least equal significance in human life. There is nothing intrinsically childish or pathological about it.

A critical concept in developmental theories is that each successive stage of the life cycle builds upon a preceding one, and the mastery of designated developmental stages contributes substantially to the successful completion of others. Erikson's developmental framework proceeds according to an "epigenetic principle" that anything that grows has a ground plan and that out of this ground plan the parts arise, each part having its line of special ascendency until all parts have arisen

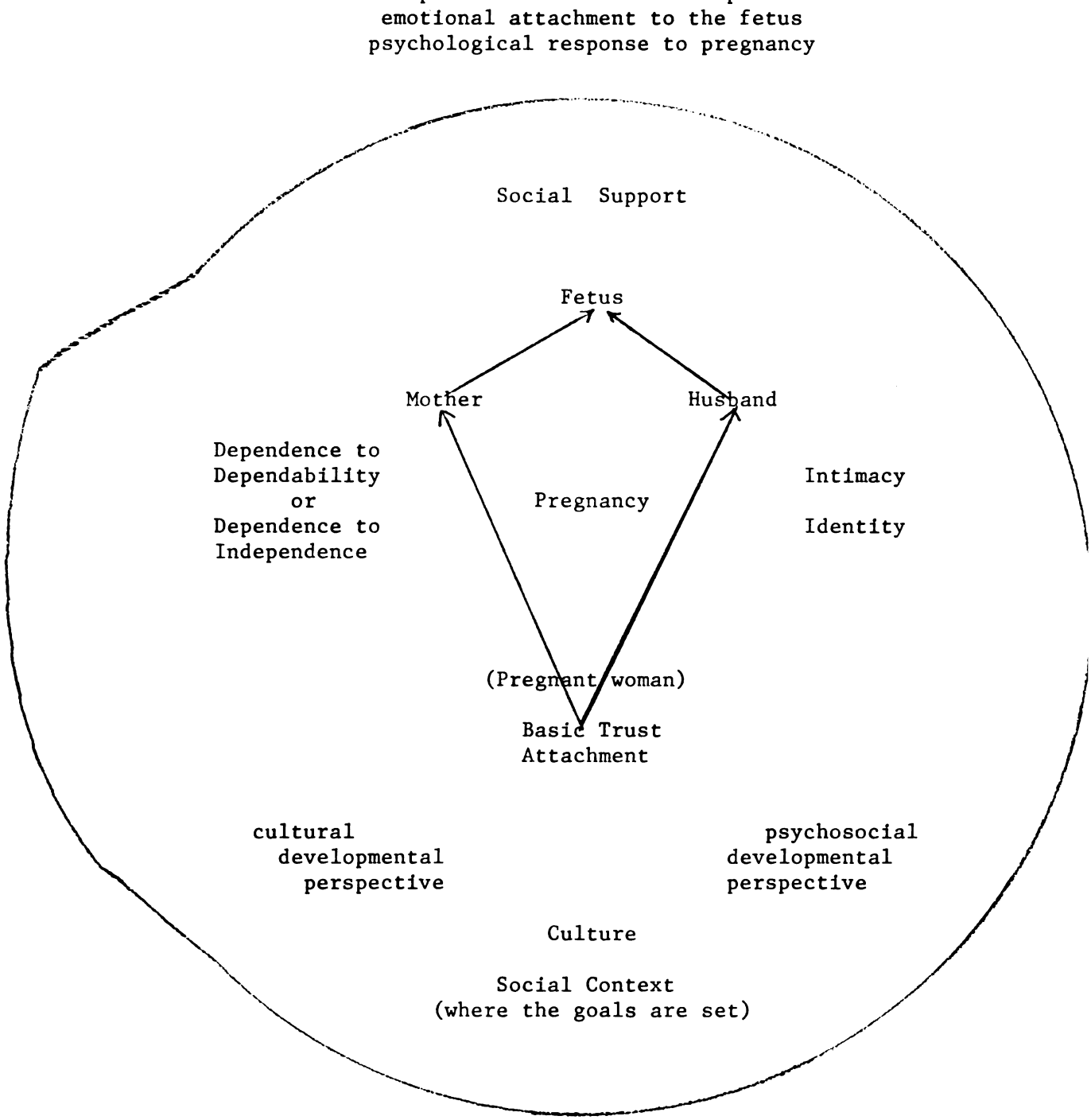
to form a functional whole (Erikson, 1968, p. 92). Although coming from a predominantly psychoanalytic perspective, Erikson also represents the first of the neo-Freudians to give credence to the important impact of society upon the psychosocial development of the individual and to break from the complete biologic determinism of psychoanalytic theory. Figure 1 represents a model of the continuous and evolving development of attachment relationships from a developmental framework as presented in this paper.

Literature Review

Attachment and Pregnancy

Pregnancy is a critical transition period for most couples, especially for the first baby, affecting a shift in their social roles, in day-to-day responsibilities, in each partner's self-concept, and in their sense of place in the continuum of human experience. The process of becoming parents seems best understood as a time of normal developmental crisis with accompanying upheaval in the processes of physiology, role values, and relationships (Bibring, 1959; Grossman, Eichler, & Winickoff, 1980). Much of the previous theoretical work on women's psychological health and its relation to motherhood comes from the psychoanalytic tradition (Benedek, 1960; Bibring, 1959; Deutsch, 1945).

Psychoanalytic theorists view adaptation to pregnancy and motherhood as a largely intrapsychic task, the completion of which is a necessary component of full maturity and healthy ego development. They emphasize a woman's historic relationship with her own mother and feel



Adult Attachment, Social Support, and Culture
A Developmental Model

FIGURE 1

that having had a good relationship with a nurturant, loving mother allows a woman to accept her own femininity and enables her in turn to become a loving and nurturant mother. The quality of the marital relationship, as well as features of its style and the readiness of the couple to welcome a new member, all play a vital role in influencing the nature of the experience for the man and woman, ultimately influencing the infant. Grossman and colleagues (1980) reported that man's general psychological health, his general capacity to manage and not be overwhelmed by anxiety, his comfort with his masculinity, and his sense of having been well-nurtured as an infant and child are important factors in his adaptation to becoming a father. Aspects of the interpersonal relationship between husband and wife may well be the most important context within which the woman incorporates the new child (Dyer, 1963; Wenner et al., 1969). Shereshefsky and Yarrow (1973) found the external stresses in a woman's life to be inversely related to her successful adaptation to pregnancy and to her postpartum adaptation. Adaptation in pregnancy and parenting is a process influenced by many different factors including the psychology of the man and the woman, the woman's physiology, sociocultural dimensions such as the quality of marriage, life stresses, and sources of support, and finally, the characteristics of the new child.

Several who have studied pregnant women argue that the ultimate origin of a mother's relationship to her child probably begins when she herself is a child, identifying with her mother (Caplan, 1959, p. 57). Uddenberg (1974) observed that a woman's reproductive adaptation is similar to her mother's. Rubin (1975) viewed the process of attachment as having its origin and endpoint in the woman's maternal identity.

Benedek (1970a) and Jessner, Wiegert, and Foy (1970) looked specifically at the role the husband needs to play during pregnancy in order to adequately support his wife. Weinraub, Brooks, and Lewis (1977) studied the problem from a family systems orientation. All emphasized the importance of the father's providing reassurance to the mother. Shereshefsky and Yarrow (1973) found that overall marital adjustment of the couple was strongly related to a variety of measures of maternal adaptation. Meyerowitz (1970) found women dissatisfied with pregnancy were also dissatisfied with their sexual role, but accepted pregnancy if they thought it brought them closer to their husbands. Deutscher (1970) found that if the couple had a good marital relationship before the birth of the baby, the woman had little postpartum difficulty. Also, more feminine and more traditional women approach more closely the cultural stereotype of a good mother, with the required selflessness and relative lack of differentiation at two months postpartum than more masculine women and women who have negotiated more egalitarian marriages.

Shereshefsky and Yarrow (1973) found that the variables most predictive of postpartum stress were internal. Specifically, ego strength, nurturance, and the capacity to easily visualize oneself as a mother were predictive of general adaptation to pregnancy. Brown (1964) observed high intercorrelations between anxiety, neuroticism, pregnancy worries, and bodily symptoms and hypothesized they were all manifestations of the same variable, anxiety, similar to the findings of Shereshefsky and Yarrow.

There are several studies that deal with the interrelationships between the pregnant woman and her husband and her mother. Ballou

(1978) found that the pregnant woman's relationship with her husband helped in reconciling the conflicts with her mother. Benedek's (1949) findings suggest that the acceptance of dependency on her mother is important for the new mother to be able to accept her child's dependence. Bibring and colleagues (1961) found increased closeness of the pregnant woman to her mother during the third trimester of pregnancy.

The degree to which pregnancy is experienced as a time of well-being or a period of stress may be critically related to the quality and extent of social and interpersonal support received (Leifer, 1980, p. 39). Mead and Newton (1967) stated that all human society provides help for pregnant women in order to alleviate the stresses of childbearing. The nature and development of attachment, particularly in outward expression in different cross-cultural situations, differ, but we do not know if there is any difference in the function served by attachment in different situations. For the most part, studies have focused on the psychological response to pregnancy, ignoring the social context in which this response occurs (Leifer, 1980).

Psychological Well-being and Pregnancy

Early psychoanalytically oriented theorists (Benedek, 1956; Bibring, 1959; Bibring, Dwyer, Huntington, & Valenstein, 1961; Caplan, 1961; Deutsch, 1945) described pregnancy as a maturational crisis that rekindles unresolved intrapsychic and interpersonal conflicts and provides the potential for reconciliation, renegotiation, and resolution of old conflicts. Based on the analysis of exclusive clinical data, Caplan (1959, 1961) and Bibring (1959; Bibring et al., 1961) proposed

that pregnancy normally precipitates an ego function imbalance, often creating an emotional disequilibrium that is similar to psychopathology with symptoms of regression and primitive anxiety. A number of clinicians and researchers have documented symptoms of emotional disequilibrium during pregnancy (Colman, 1969; Colman & Colman, 1973; Glazer, 1980; Leifer, 1977; Lubin, Gardner, & Roth, 1975; Nilsson & Almgren, 1970; Pugh, Jerald, Schmidt, & Reed, 1963; Shereshefsky & Yarrow, 1973; Standley, Soule, & Copans, 1979). These included heightened anxiety, ambivalence, lability, introversion, depression, and mood disturbance. According to Pugh and colleagues (1963), pregnancy is a period in which the woman is at significantly greater risk of experiencing severe psychological distress than before. Ballou (1978a, 1978b) and Leifer (1977) considered the emotional disturbance during pregnancy as facilitating the developmental task of normal transition to motherhood.

A systematic study done by Leifer (1971), in which 19 women were followed from early pregnancy to seven months postpartum, indicated that although emotional upheaval and rapid change were characteristic of pregnancy, for some women a growing sense of adulthood, of fulfillment, and integration of a new motivational stage clearly co-existed with the emotional disequilibrium. Leifer also pointed out that anxiety in pregnancy is universal but not homogeneous; seemingly similar levels of anxiety may have different meanings in different women.

The results of other studies have indicated the existence of psychiatric distress during pregnancy. Nilsson and Almgren (1970) conducted a prospective study in Scandinavia with a large sample to examine the adjustment of women during pregnancy as well as the

postpartum period. Each woman was seen early in pregnancy, soon after delivery, and at six months postpartum. Unlike previous writers, for Nilsson and Almgren one of the interesting results showed that two-thirds of the women in the sample reported an increase in psychotic symptoms during pregnancy. Brew (1950) noted that psychiatric admissions of pregnant women are often delayed until after their delivery, as psychiatric distress during pregnancy is not usually given serious attention.

Zajicek and Wolkind (1978) reported evidence for pronounced emotional disequilibrium in women during pregnancy. They found 81% of the women who were identified as psychosocially stressed during the first trimester of pregnancy experienced disabling emotional difficulty, whereas 25% of women in their sample who were identified in the first trimester as mentally healthy and well adjusted experienced the same kinds of difficulty. Standley and colleagues (1979) studied a normal population of women (n = 73) and assessed the extent of their prenatal anxiety. Of the sample, 48% reported psychiatric symptoms of anxiety such as unexplained insomnia, fearfulness, strange ideas, and racing thoughts. These findings also support the presence of pronounced emotional disequilibrium in women during pregnancy.

Husband-Wife Attachment

Several investigators identified problems in the relationship with the husband as a factor in prenatal complications. Pregnancy challenges the family, it tests the bonds between husband and wife (Entwisle & Doering, 1981). Several researchers and clinicians have examined husband-wife relationships during pregnancy and have emphasized the

significance of it in childbearing outcomes (Affonso, 1982; Ballou, 1978a, 1978b; Barnard, 1981; Braverman & Roux, 1978; M.B. Cohen, 1966; Entwisle & Doering, 1981; Shereshefsky & Yarrow, 1973; Westbrook, 1978).

M.B. Cohen (1966) and a group of psychiatric clinicians were the first to focus on martial relationships of 50 couples during pregnancy. They conducted weekly interviews with the wives throughout pregnancy and three months postpartum, which yielded clinical data relating to husband-wife relationships. As the subjects were referred by mental health agencies, a majority of the sample experienced psychological problems. The subjects were divided into five groups according to presence and severity of symptoms of emotional difficulty, which were defined as psychological problems of adjustment sufficiently severe to be handicapping. The poorest functioning group (group V), which was the largest although the number was not specified for any of the groups, revealed histories of greater conflict and tension in the childhood home, strained current relationships with their mothers, and difficulty in the marriages. Unlike group V, group III, who had obvious neurotic difficulties which did not worsen during pregnancy, had made successful marriages in spite of the fact that they also experienced significant childhood trauma. Cohen, on the basis of the finding, suggested that husbands play a critical role in facilitating women's adjustment during pregnancy. The presence of a supportive husband during pregnancy made up for unsatisfactory maternal relationships for his sample.

Ballou (1978a, 1978b), in a prospective longitudinal study of 12 primiparas from 10 weeks gestation to three months postpartum, examined object-relational themes during pregnancy, emphasizing the woman's current relationships with the husband and mother. She reported

women's reconciliation, renegotiation, and resolution of primary relationships to be central in how the woman navigates the transition to motherhood. Husbands play an important role in this process by being nurturing and supportive (maternal qualities) and by being paternalistic in meeting the wives' dependency needs. Ballou concluded that a woman with poor relationships with her mother may turn to her husband during pregnancy and be successful in meeting her dependency needs in spite of the poor relationships with her mother, thus supporting Cohen's (1966) conclusions.

Westbrook (1978) supported Ballou's findings in a retrospective study of 200 recently delivered married women, the findings of which showed that the type of marital relationship significantly correlated with several indices of maternal adjustment. Positive marital relationships correlated with calmer psychological states, maternal warmth, and positive attitudes toward childbearing. On the other hand, women experiencing negative marital relationships expressed greater separation anxiety, greater hostility toward and more rejection of the infant.

Feiring (1976) noted that adaptive maternal behavior was influenced favorably by the mother's perception of the amount of positive support she received from the secondary parent (mate, husband, mother). Shereshefsky and Yarrow (1973) found the husband's role to be highly correlated with the mother's maternal functioning. Entwisle and Doering (1981) found the quality of communication between husband and wife apparently influenced the wife's preparation, which was in turn associated with the husband's participation in the birth event, and that these variables indirectly or directly affected the quality of the

woman's and man's birth experiences. Almost all women in their study wanted their husbands to be present at birth. Of the husbands, 21% who were present during labor and delivery did not find the childbirth experience at all enjoyable. For some couples, pregnancy and childbirth may challenge rather than strengthen the conjugal relationship.

Mercer and colleagues (1983), in a study of maternal role attainment, found that the mate's emotional support is more predictive of positive perceptions of the birth than other types of support. A significant overall decrease in marital satisfaction also has been reported for both husband and wives at the birth of a first child (Feldman & Rogoff, 1977; Ryder, 1973). Hoffman and Manis' (1978) conclusion, based on a national sample of parents, is that the marital relationship changes rather than deteriorates during pregnancy and childbirth.

The increased awareness of the importance of husband-wife relationships during different stages of pregnancy and childbirth and the quality of childbearing outcomes has been reported by several researchers (Arizmendi & Affonso, 1984; Mercer, 1981). The significant correlation between postpartum depression and a deterioration or termination of the marital relationship or the perception by the woman of inadequate emotional support from her spouse has been reported by several researchers (Braverman & Roux, 1978; Kumar & Robson, 1978; O'Hara, Rehm, & Campbell, 1983). Braverman and Roux (1978), in screening women for risk of postpartum depression, concluded that a disturbance in a woman's marital relationship and her feeling of not being loved were serious predictors of postpartum depression, regardless of the causes for such feelings. Affonso (1982) found an association

between a woman's negative judgment and her interaction with the baby's father and depression symptoms at the third and eighth weeks postpartum. Barnard (1981), in a child health assessment study, found that the father's involvement in the pregnancy was positively correlated with his involvement and responsiveness to the child, as measured by observation during the first four years of life. In addition, the mother's perception of the father's involvement during pregnancy was correlated with the child's IQ at 4 years of age. According to Barnard, responses to questions relating to physical and emotional support and attitude to pregnancy tapped into information about the mother's perception of the father's attachment to her. Lederman (1984a) in the Annual Review of Research stated, "Perhaps one of the most promising areas for further investigation is the marital relationship and its impact on mental and reproductive health" (p. 47).

Mother-Daughter Attachment

The topic of attachment between mother and child has heavily engaged the attention of social scientists in the past two decades. Ballou (1978a, 1978b) and Bibring (1959) suggested that the daughter is able to view the mother positively at the end of the pregnancy experience. Entwisle and Doering (1981) found that women judged their own mothers more favorably after birth than they had before. Using rating scales that provided 20 pairs of descriptive adjectives women rated their mothers before and after the birth. Their views of their mothers improved significantly after the birth, as compared with before. In 16 out of 20 scales, a significant majority of women's views of their mothers were more positive after their baby was born (Entwisle &

Doering, 1981). Arbeit (1975) reported that women experiencing a first pregnancy became more empathic toward their own mothers as pregnancy progressed. The total improvement registered in Arbeit's sample was greater than the improvement measured in the Entwisle and Doering sample, as the measures were taken over a short time span (later in the sixth month and again two to three weeks after birth in Arbeit's study).

Uddenberg, Fagerstrom, and Hakanson-Zaunders (1976) examined relationships of the pregnant woman with her mother and found that reproductively maladaptive mothers (as defined by the researchers) had daughters with a higher incidence of obstetric pathology. Eight cases of toxemia were observed, all in daughter of reproductively conflicted mothers. Bibring and colleagues (1961, 1976) suggested that a pregnant woman forms a new identification with her mother during pregnancy as she, by becoming a mother, gains adult status equal to that of her mother. Ballou (1978a, 1978b) placed strong emphasis on the significance of reconciliation of the pregnant woman with her mother. Benedek (1970a) emphasized that gaining a sense of one's mother and of being mothered was a prerequisite to attaining a wholesome sense of one's child and the role of a mother. When there was a hostile relationship with the mother, Ballou found that a nurturant husband could support the wife and attenuate the negative influence of a poor mother-daughter relationship.

Lederman and colleagues (1979; Lederman, 1984a, 1984b) found that an available reassuring mother was a constructive model, enhancing the daughter's sense of maternal confidence. The relationship with the mother correlated with the primigravida's identification of her own motherhood role, childbirth preparation, and the resolution of fears

concerning labor and delivery, as well as measures of progress in labor. Shereshefsky and Yarrow (1973) found that the relationship with the mother was related to husband-wife adaptation and self-confidence in the maternal role. They reported that the relationship to the mother was constant over the course of childhood, pregnancy, and postpartum. In contrast to other reports, they proposed that the mother-daughter relationship does not change much.

Nilsson, Uddenberg, and Almgren (1971) conducted an extensive study of paranatal emotional adjustment in 165 women. Their findings supported the study findings of Shereshefsky and Yarrow (1973) and Lederman and Lederman (1979) in that they showed that women with a high degree of perceived similarity with the mother generally showed fewer signs of adjustment difficulty. Cohen (1979), in a review of the literature, indicated that the loss of mother before puberty needs to be of professional concern, considering the importance of the relationship with the mother and the impact of its loss on the well-being of the daughter.

Maternal-Fetal Attachment

Several conceptualizations of the bond between mother and fetus have been developed by different researchers and clinicians from different disciplines over the past few decades (Arbeit, 1975; Ballou, 1978a; Bibring, Dwyer, Huntington, & Valenstein, 1961; Bibring & Valenstein, 1976; Breen, 1975; Chodorow, 1978; Deutsch, 1945; Entwisle & Doering, 1981; Grossman, Eichler & Winickoff, 1980; Leifer, 1977; Mercer, 1982; Rubin, 1967, 1970, 1975, 1977). Due to variations in design, methodology, sample size, parity, stage of pregnancy studied,

marital status, and a lack of generalizable data, there is no consensus in the literature regarding the definition of the construct as well as behavior manifestations of same.

The earliest psychoanalytic literature, based on clinical observation (Benedek, 1949; Caplan, 1959; Deutsch, 1945) described the developing bond between the mother and fetus in terms of the psychological processes of pregnancy. The classical psychoanalytic writings published by Deutsch (1944, 1945) described the reproductive aspects of a woman's life, including the developing fetus. The pregnant woman was considered by several clinicians and researchers as passive, introspective, and narcissistic, incorporating the unborn fetus as part of her own self (Ballou, 1978; Benedek, 1949; Chodorow, 1978; Deutsch, 1945). Deutsch (1945) wrote that at birth the newborn becomes psychologically what the fetus once was biologically, that is, a part of the mother's own self. According to Harris, Linn, Good, and Hunter (1981), one of the determinants of how the pregnant woman perceives this process of differentiation is her psychological experience of pregnancy. Although initially the woman experiences confusion of her own body with that of the fetus, which signifies her identity with the unborn baby (Chertok, 1969), the fetus grows and becomes increasingly active, and the woman conceptualizes the fetus as an individual, separate from herself, and realizes that the fetus is changing in a way that is beyond her control (Colman & Colman, 1973).

The psychoanalytic approach in the study of maternal-fetal attachment posed problems in relation to lack of empirical evidence as the data came from retrospective studies dealing with intrapsychic processes and also because of basic assumptions in the approach that the

innate maternal instinct under hormonal influences controlled maternal behavior. Attachment occurs between two individuals possessing separate identities; therefore, establishing attachment with the fetus as a part of the woman's own self poses problems in conceptualization of the construct.

Winnicott (1958) described "primary maternal preoccupation", in which the woman becomes preoccupied with her fetus/infant to the exclusion of other interests during pregnancy and the first few weeks following birth. Colman and Colman (1973) described it as "altered state of consciousness", representing primarily concern with self.

Leifer (1977), in her investigation of some of the psychological changes that occur during first pregnancy and the early postpartum months, examined aspects of the development of maternal feelings. These included affectionate relationship to the fetus during pregnancy, fantasies and preparations for the future child during pregnancy, maternal feelings for the baby in the early and late postpartum periods, and the relationship of emotional attachment to the baby postpartum. Feelings toward the developing fetus were assessed by an Attachment to the Baby checklist given at each trimester. Leifer collected additional data relating to fetal attachment from ratings of interview material and a Child Trait checklist. The results showed that little emotional attachment was shown by women toward the fetus during the early months of pregnancy and, for most women, a new awareness of the fetus as a separate entity rather than a part of the self developed in the third trimester. Initially the fetus was most commonly viewed as being very diffuse, and by the end of the pregnancy (third trimester) the image of the fetus tended to merge with fantasies about the baby as it would be

after birth. Three patterns of involvement with the fetus emerged. Firstly, minimal attachment to the fetus was shown, even by the end of pregnancy, for a small group of women. Although the quickening increased the reality of the fetus, it was seen as intrusive and an annoyance due to movements. A second pattern showed no closeness to the fetus early in pregnancy, but after quickening the feelings deepened, and by the end of the pregnancy a maternal bond had been established. A third group of women (number unspecified in all three groups) formed attachment early in pregnancy and felt a close relationship and interaction with the fetus by the end of pregnancy.

Study findings indicated women engaged in varying degrees of activities that served to heighten the reality of the baby, such as affectionate imaginary conversations with the fetus, reprimanding for moving too quickly, and offering food when eating. The women described these activities as having psychological meaning in preparing for the task ahead. Several couples developed pet names for the fetus. Leifer concluded that to a large extent the activities, feelings, and preparations for the baby were related to the degree of emotional attachment toward the fetus. Those who were well-informed about childbirth related to the baby with relative ease.

Leifer (1977) was the first researcher to trace the development of maternal feelings and explicate the relationship between attachment to the fetus and actual maternal behavior. Her findings are supported by authors such as Bibring and Valenstein (1976), Deutsch (1945), and Rubin (1975), who considered the successful incorporation of the fetus as an important maturational step. Leifer also found those women who felt intense attachment to their babies from the beginning most often viewed

their relationship with their infants as being a continuation of a relationship started during pregnancy. Leifer's study consisted of qualitative data on a sample size of 19 white, middle-class primigravidas with an age range of 22-33 years. They were free from previous gynecological or psychotic conditions and were living with their husbands. Thus, Leifer's study was small and exploratory in nature but demonstrated a connection between maternal-fetal and mother-infant attachment.

Robson and Moss (1970) found that "early attachers" who experienced immediate warmth and attachment to the newborn reported they experienced unusually high fetal attachment during pregnancy. Arbeit (1975) interviewed 30 women during the latter part of their first pregnancy. One of the main themes that emerged from intensive interview data was the wealth of mutual interactions that may take place between mothers and their unborn. Arbeit reported that women noticed and interpreted different movements of the fetus, thereby establishing "personal" relationships. Chojnacki (1976) and Leifer (1977) found that women indicated similar dreams and fantasies, the preparation of the nursery and layette, and the selection of names, pediatricians, and methods of feeding.

Ballou's (1978) exploratory study with 12 primigravidas from 10 weeks gestation to three months postpartum describes the process of the fetus developing as part of oneself in the first trimester, as a separate self in the second trimester, and a sense of the child as a real person in the third trimester. Cranley (1981a, 1981b) studied expectant mothers' progressive attachment to the fetus during pregnancy. She constructed a maternal-fetal attachment scale to measure the

construct based on earlier descriptions of maternal behavior (Arbeit, 1975; Deutsch, 1945; Leifer, 1977; Rubin, 1975). Cranley defined the construct as the extent to which women engage in behaviors which represent an affiliation and interaction with their unborn child. The 24—item scale was divided into five subscales, which represented aspects of the relationship between the mother and the fetus as identified from the literature. The five subscales are: Differentiation of Self from the Fetus, Interaction with the Fetus, Attributing Characteristics and Intentions to the Fetus, Giving of Self, and Role Taking. The subscales' reliability coefficients ranged from .52 to .73, with an overall reliability for the total scale of alpha = .85. (The scale is further discussed in Chapter III.)

Cranley administered the scale to 30 women at 35-40 weeks gestation to determine relationships between fetal attachment and demographic variables, perceived stress, self-esteem, and social support. Social support was measured by a series of open-ended, forced-response type questions that elicited information about the social support network available to the subjects. The perception of stress was measured by items from the State-Trait Anxiety Inventory as well as by a series of forced-choice type questions that asked the woman to rate the amount of stress on account of concerns relating to health, fetal health, and difficulties during the pregnancy. Self-esteem was measured using the Rosenberg Self-Esteem Scale. No significant relationships were observed between demographic variables or trait anxiety and maternal-fetal attachment scores.

In a second stage of the study, Cranley examined husbands' responses regarding the strength of the marriage and found associations

between marital relationship and the paternal-fetal attachment scores. Self-assessed stress correlated negatively with maternal-fetal attachment ($r = -.41$, $p = .01$). Social support as measured also correlated positively with maternal-fetal attachment ($r = .54$, $p = .012$). Rosenberg self-esteem scores and the scales showed almost no correlation but in a negative direction ($r = -.01$). In Cranley's study, the results seemed to indicate that maternal stress, quality of marital relationship, and the availability of social support influenced maternal-fetal attachment. It is interesting to note in Cranley's (1981a, 1981b) and Weaver and Cranley's (1983) studies the low incidence of parental interaction with the fetus and attribution of characteristics to the fetus.

Several other researchers have examined different aspects of maternal-fetal attachment (Lumley, 1980a, 1980b, 1982a, 1982b). Lumley, in a comprehensive study of a sample of 30 Australian primigravidas, demonstrated correlation between maternal-fetal and maternal-newborn attachment. Lumley's study, as Cranley's and Leifer's, showed that whether or not a pregnancy was planned influenced maternal-fetal attachment.

Rees (1980a, 1980b) attempted to separate fantasies about the unborn child from the formation of a conception of the fetus as a person. Three scales, entitled Feelings of Motherliness, Conception of the Fetus as a Person, and Appropriateness of Fantasies about the Baby-to-Be, were developed by Rees without success in establishing validity and reliability for them.

Several factors that influence maternal-fetal attachment have been identified by different researchers. A nurturing support system,

husband-wife relationship, mother-daughter relationship, psychological well-being, and social and cultural background are reported to have an impact on maternal-fetal attachment. These have been discussed in detail in the previous sections of the chapter except for social support, which is presented in the next section.

Social Support, Attachment, and Psychological Well-being

Several theorists are attempting to relate the concept of attachment to social network and social support, but this has been done through mostly isolated and independent research and, therefore, the interrelationships between these major concepts are not clearly established. Social support is defined by one theorist as "interpersonal transactions that include one or more of the following: affect, affirmation, and aid" (Kahn, 1979). Definitions of social support are constructed to explain two dimensions of the phenomenon: 1) elements of social support and 2) the methods of transmission of these elements.

Weiss (1974) presented six categories of functions that relationships provide: attachment, social integration, opportunity for nurturance, measurement of worth, sense of reliable alliance, and obtaining guidance. Cobb (1976) defined support as information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations. Other conceptualizations have described support as nurturance, empathy, encouragement, information validating behaviors, sharedness and reciprocity, instrumental help, and recognition of competence (Kahn, 1979; Mitchell, 1969). These conceptualizations are indicative of the broad and

unspecified domain that has been assigned to social support. An immediate task in the development of social support theory will be to increase the understanding of dimensions, properties, and relationships of social support.

A conceptual framework for the study of attachment and social support may be derived from the hypothesis proposed by Kahn (1979) that the adequacy of social support is a determinant of an individual's well-being, of performance in major social roles, and of success in managing life changes and transitions. Social support theorists consider attachments acquired in infancy as prototypes of supportive interactions in adulthood (Kahn & Antonucci, 1980). They also proposed that strong supportive relationships during adulthood assist the individual to cope better with the stresses of his/her environment. We can also add Cassel's (1976) proposal that integration into an enduring network of social support provides an immunological buffer against stress-related illness. Wilcox (1981) reported direct confirmation of the stress-buffering effects of social support, in which social support was not confounded with other constructs. Norbeck and Tilden's (1983) study confirmed that social support, distinct from psychosocial assets, is significantly related to complications of pregnancy.

The concept of convoy over the life span, in examining a specific network of the individual (mother-daughter attachment, husband-wife attachment, and other social relationships), will be useful in identifying the interrelationships of attachment, social support, and well-being. An individual's convoy represents the network as a set of concentric circles, the inner for those who are "closest", the next for those "close", and the outer for those who are "not so close". The

characteristics of the network include stability, size, density, and frequency. Stability over the life span is an important factor in relation to the first-order relationships represented by the circle closest to the individual. Attachment emphasizes proximity and enduring relationships, and social support includes affect, affirmation, and aid (Kahn, 1979). It might be helpful to examine the relationships of these elements within the structure of the convoy for the individual, that is, in terms of those who are closest, close, and not so close. If there is stability in the first-order network, proximity will be greater between the individuals and frequency of interaction will increase, which in turn will increase satisfaction and the level of affirmation and enduring bond. This in turn will increase social support through increased affect, affirmation, and aid, based on the framework that is presented.

The literature dealing with social support and social network emphasizes the important role played by intimate and supportive relationships in maintaining the well-being of an individual (Lowenthal & Haven, 1968). As stated earlier, there is lack of clarity in the conceptualization of the structure, function, and different dimensions of social support and the processes involved in the positive effects of supportive relationships. Therefore,, the question remains as to what influence do the unique relationships have on social support available and the well-being of women during a period of transition in life? The nature, direction, and magnitude of attachment relationships along with other supportive relationships and their impact on psychological well-being need to be explored.

Social Support, Pregnancy Adaptation, and Outcome

Lederman (1984a) lists a number of researchers who identified specific life stresses such as financial strain, unemployment, relocation, illness, and loss of significant family members as having an influence on pregnancy adaptation and outcome (Cohen, 1979; Grossman et al., 1980; Helper, Cohen, Beitenman, & Eaton, 1968; Nadelson, 1973; Shereshefsky & Yarrow, 1973; Yamamoto & Kinney, 1976). Grossman and colleagues (1980) reported that financial stress takes its toll on the marriage. Shereshefsky and Yarrow (1973) also reported a negative relationship between life stress and nurturance.

The stress of pregnancy itself is not benign. Giles-Sims (1983) reported that pregnancy is the second most frequently cited stress category as a preceding event leading to violence in the battering of women. Numerous factors associated with maladaptive response to pregnancy include problematic or inadequate support, particularly from the husband and mother, inadequate preparation for childbearing and parenthood, a poor marital relationship, and loss of mother at a young age without replacement by a surrogate or substitute mother (p. 43).

Gorsuch and Key (1974) studied life stress and anxiety before and during pregnancy. Measures of anxiety and life stress were obtained retrospectively during pregnancy, while serial measures of state anxiety and life stress were obtained throughout pregnancy for 118 low-income women. Marital status of the women on clinic admission was significantly related to findings of abnormality in pregnancy. Anxiety in the first trimester and life stress during the second and third trimesters were associated with pregnancy complications. The researchers pointed out that neither trait nor state anxiety were

related to the life stress measure and that the stress measure predicted the level of complications regardless of the level of anxiety. The findings of the study also showed that events during pregnancy were more critical and predictive than before pregnancy.

Recent researchers have proposed a combined examination of life stress and social support as determinants of emotional distress to be more fruitful. Lin, Simeone, Ensel, and Kuo (1979) studied a sample of 170 Chinese Americans residing in Washington, D.C. who were systematically selected from a master list of 550 Chinese Americans. They measured the effects of stressful life events and social support on psychiatric symptoms manifested by the sample. The findings of the study indicated a significant positive relationship between life stress and incidence of symptoms and a significant negative relationship between social support and incidence of symptoms.

Nuckolls, Cassel, and Kaplan (1972) measured life change and support in addition to stressful events and the joint effect on the outcome of pregnancy. Stressors were measured by a life change score calculated from a schedule of recent experience, as developed by Holmes and Rahe (1967), which was administered at 32 weeks of pregnancy. Social support (or, as they termed it, "psychosocial assets") were measured by an instrument, administered prior to the 24th week of pregnancy, designed to assess the subject's feelings toward herself and her pregnancy and her relationship with her husband, his parents, friends, and neighbors in the community. Following delivery, all medical records were reviewed "blind" for any complications of pregnancy or delivery. The results showed that neither psychosocial assets nor life stresses were significantly related to complications. When

analyzed together, psychosocial assets were found to have a buffering effect on life stress. In a small subsample of 26 subjects, 91% of the women with a high life-change score but low asset score had one or more complication, whereas only 33% of the women with an equally high life-change score but with a high asset score had any complications.

As social support in Nuckolls and colleagues' study was embedded in the construct "psychosocial assets", which included measures of ego strength and attitudes toward the pregnancy, it might have confounded intrapsychic and interpersonal aspects. In measuring complications, the study took into consideration only the medical complications, without giving adequate attention to emotional crisis situations as well. The inclusion of adolescents in the sample, the lack of adequate control for preexisting medical risk factors, and the unique characteristics of the sample being married to military men need to be considered in interpreting the results. Despite the weaknesses identified, it is an important study with the significant finding that psychosocial assets (social support) are protective in buffering the deleterious effects of stressful life changes.

Norbeck and Tilden (1983) explored the relationship between life stress, social support, and emotional disequilibrium in complications of pregnancy, a study that closely resembled the Nuckolls and colleagues' (1972) study. The predictor variables were measured in the first half of pregnancy, two life stress measures were taken, and "psychosocial assets" (social support and emotional state variables) were measured and tested alone and in interaction with life stress. Norbeck and Tilden's study partially replicated the findings of a stress-buffering effect for psychosocial assets found by Nuckolls et al. in significant interaction

between stress during pregnancy and tangible support for all three types of complications; however, the effect size was smaller than Nuckoll and colleagues' findings. Social support by itself did not show significant effects on complications. Significant effects were found for parity and age in pregnancy complications. Age was also significantly related to labor and delivery complications. Life stress from prior years was significantly related to overall complications and to gestation complications. Partner status and emotional disequilibrium were highly related to infant condition complications. Emotional disequilibrium was significantly related to infant condition complications.

The study findings revealed that social support and life stress exerted separate and significant main effects on emotional disequilibrium. The interaction of the stress during pregnancy and tangible support was a significant predictor of each type of complication. The effect of social support on emotional disequilibrium was significant, but the magnitude was small (3.11%) compared with the effect of social support in reducing pregnancy complications found by Nuckolls and colleagues. As pointed out earlier, for Nuckolls et al. the measure of social support also measured ego strength, self-esteem, attitudes toward pregnancy, and emotional support. The results of Norbeck and Tilden suggest that social support may moderate the effect of negative life stress on emotional disequilibrium during pregnancy. Thus, their study indicates that social support in interaction with life stress reduces emotional disequilibrium during pregnancy. The question is also raised as to whether social support reduces the likelihood of occurrence of negative life stress and thereby indirectly reduces

emotional disequilibrium, or does social support buffer the deleterious effects of life stress once the stress has occurred. The mechanisms or processes through which such interpersonal relationships may function to protect the individual from stressful stimuli have so far been largely a matter of speculation. There has been very little research done on the consequences of adequate support.

Bott's (1972) study of 20 London families suggested that the pattern of linkages and social network by which a nuclear family is articulated with a larger society accounts for the particular type of role relationship existing between husband and wife. Bott concluded that social network rather than social class offers the most parsimonious explanation of conjugal role relationships. Abernethy (1973) tested the hypothesis that networks are correlated with level of maternal satisfaction and sense of competence as a mother. The findings showed that the social network was significantly associated with sense of competence as a mother ($r = .47$, $p < .01$). Frequency of contact with her own mother is the single predictor of a woman's sense of competence ($r = .42$, $p < .01$). Also, the study concluded that the mechanism by which a tight network enhances a woman's sense of competence as a mother includes emotional support and assistance with the responsibilities of child care.

Women in a loose network do not appear to have sufficient feedback regarding their mothering and are exposed to differing opinions about childbearing. Relationships between women's support systems and pregnancy outcomes have been found in several other reports. The support of a lay woman during labor contributed to shorter labor and state of alertness following birth (Sosa, Kennell, Klaus, Robertson, &

Urrutia, 1980). A positive relationship with the husband and preparation for delivery correlated with a shorter labor (Lederman, Lederman, Work, & McCann, 1979). The mates' emotional support is more predictive of positive perceptions of the birth than other types of support (Mercer et al., 1983).

Individual differences influence the amount of social support that an individual requires. A person's need for affiliation is an important dimension that has not been studied in relation to social support (Norbeck, 1981). Heller (1979) also indicated the need of study in this area. Age influences the amount and type of social support required for optimal functioning. Individual differences need to be considered in determining the need and effect of perceived support on the psychological well-being of women during pregnancy. In her closing remarks at the March of Dimes Birth Defect Foundation, Barnard (1981) suggested "Support Systems as a Major Regulator of Pregnancy and Health Outcomes" as a roundtable topic for consideration, indicating the need for sharpening our understanding of and measurement of these variables, as well as their impact on health during pregnancy.

Summary

Support has been presented for the proposition that an overview of the literature that deals with attachment reveals important achievements marked with several discontinuities and deficiencies. Despite the attention given separately to the various components of attachment during early stages of human psychosocial development, little research has been directed to the nature of attachment relationships during

adulthood and its impact on the well-being of the individual. Also, there is inadequate knowledge and lack of testing of the theoretical propositions regarding the interrelationships between the original and early attachment relationships in life and the later intimate nurturing relationships of the individual with others, particularly during critical stages of development during adulthood. For example, does the attachment relationship developed very early in life between mother and daughter influence her current relationship with her husband? Does the attachment relationships with mother and husband influence her developing attachment to her fetus? How does her attachment relationships with her mother, husband, and fetus influence her psychological well-being during pregnancy? Does the social support available to her reflect her attachment relationships and also influence her psychological well-being, particularly during a period of developmental transition over the life span, i.e. pregnancy? The relationships between attachment, social support, and psychological well-being for women during pregnancy have not been explored.

Therefore,, the objectives of the study were to determine the:

1. Relationships between mother-daughter, husband-wife, and mother-fetus attachment as measured during the third trimester of pregnancy for a selected sample of primiparous women.
2. Significance of attachment relationships in predicting the level of psychological well-being in a selected sample of pregnant women.
3. Influence of the attachment variables on social support for a selected sample of pregnant women.

4. Influence of attachment variables and social support on the psychological well-being of a selected sample of pregnant women.

The study questions and hypotheses were:

Study Question 1

What is a greater predictor of fetal attachment, the woman's relationship with her original attachment figure (mother) or her current attachment figure (her husband)?

Hypothesis 1: There will be a positive relationship between mother-daughter attachment and maternal-fetal attachment.

Hypothesis 2: There will be a positive relationship between husband-wife attachment and maternal-fetal attachment.

Hypothesis 3: Mother-daughter attachment scores and husband-wife attachment scores will have positive relationships with the pregnant woman's maternal-fetal attachment.

Study Question 2

What is the relationship of mother-daughter attachment to husband-wife attachment?

Hypothesis 4: There will be a positive relationship between mother-daughter attachment and husband-wife attachment.

Study Question 3

Is there a relationship between life-span attachment of the pregnant woman and the social support available to her during pregnancy?

Hypothesis 5: Mother-daughter, husband-wife, and maternal-fetal attachment scores will have positive relationships with the pregnant woman's social support scores during pregnancy.

Study Question 4

Is there a relationship between social support available to the pregnant woman and her psychological well-being during pregnancy?

Hypothesis 6: Social support scores will have a positive relationship with the pregnant woman's psychological well-being during pregnancy.

Study Question 5

What is the significance of attachment relationships during pregnancy on the psychological well-being of the pregnant woman?

Hypothesis 7: Mother-daughter attachment scores, husband-wife attachment scores, and maternal-fetal attachment scores all will have a positive relationship with the pregnant woman's psychological well-being scores.

Study Question 6

How much variance do the attachment and social support variables account for in the psychological well-being of the pregnant woman?

Hypothesis 8: Attachment variables will account for a significantly greater proportion of the variance in the psychological well-being of pregnant women than the social support variable.

Study Question 7

Is there a relationship between age of the pregnant woman and her psychological well-being during pregnancy?

Hypothesis 9: Age of the pregnant woman will have a positive relationship with her psychological well-being during pregnancy.

Based on the conceptual framework and the research questions, the study design was selected. Thus,, the purpose of the research was to examine from a developmental and attachment theoretical framework whether a pregnant woman's overall psychological well-being is associated with her attachment relationships with her mother, husband, and fetus and the social support available to her. The goal was to determine the extent to which these phenomena co-existed with one another. Therefore, the emphasis was placed on their correlational rather than causal relationship.

CHAPTER III

METHODOLOGY

This section encompasses a presentation of the study design and the rationale underlying it. It then presents the sample, characteristics of the sample, instruments employed in the research, and methods of data collection and analysis.

Design

The overall research strategy employed for the study was a passive observational design (Cook & Campbell, 1979) using descriptive and inferential statistical methods. The collection of data was accomplished through the use of a structured questionnaire.

The study design was appropriate for several reasons. First, since the literature revealed no study correlating the study variables for pregnant women, the direction of the study was descriptive and correlational in order to generate empirical data to add to the present body of knowledge. Therefore,, no causal relationships can be inferred from this design. Second, the correlational study was to provide descriptive information regarding the nature of the unique attachment relationships in the lives of pregnant women, the social support available to them, and the impact of these variables on their

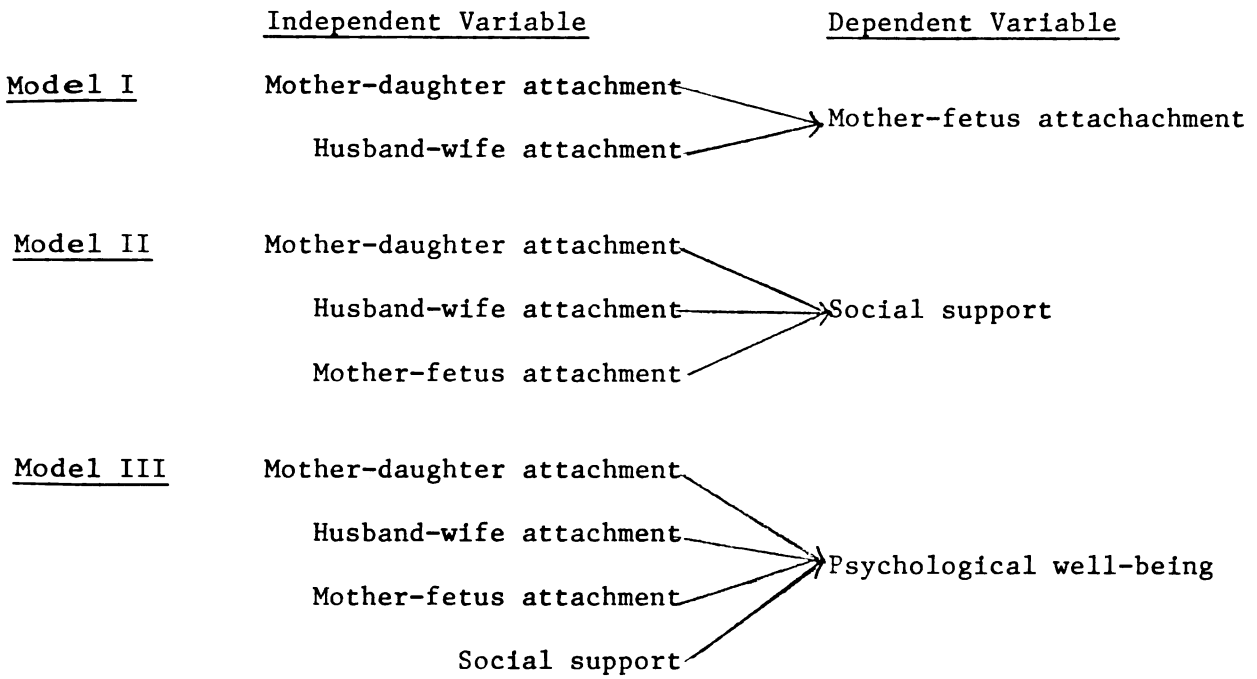
psychological well-being. Third, this study design was also to provide the opportunity of exploring the usefulness of the developmental and attachment theoretical framework in the study of these variables in an attempt to offer theoretical explanations for observations found to be significant with other populations.

In this correlational study the investigator manipulated no treatment but rather observed naturally-occurring events within naturally-occurring groups (Cook & Campbell, 1979). In such studies the investigator has the flexibility of defining what would be the independent and dependent variables. For example, in the first model presented in this study, the dependent variable was maternal-fetal attachment. The model sought to discover the influences of two independent variables, namely the mother-daughter and husband-wife relationships, on maternal-fetal attachment. In the second model, social support was the dependent variable, and the model sought to explore the nature of relationships between attachment variables and social support. For both models the attachment variables were the naturally-occurring independent and dependent variables. Finally, the effects of naturally-occurring events, attachment relationships and social support, upon psychological well-being were examined.

Data collection measures in this study were quantitative. Multiple correlation and regression techniques of analysis (Cohen & Cohen, 1975) were utilized because of the ability of the data analytic approach to handle multiple and complex relationships and interrelationships among the variables under study. Many factors have been associated with constructs that constitute parts of pregnant women's psychological well-being, for example, emotional disequilibrium (Norbeck & Tilden,

1983; Tilden, 1983), self-esteem (Mercer, 1982), and state and trait anxiety during pregnancy (Norbeck & Tilden, 1983). However, these studies have not examined psychological well-being as a multidimensional construct encompassing different aspects of general well-being of the individual during pregnancy. Furthermore, these studies did not look at the interrelationships of the unique and intimate attachment relationships of pregnant women, the social support available to them, and their influence on the psychological well-being of women during pregnancy. Since data from scientific investigations were lacking to justify hierarchical multiple regression analysis for the variables and, also, since the study was exploratory in nature, stepwise multiple regression was used for the analysis of data. The focus of this study, therefore, was to examine the multiple and complex relationships among attachment variables and social support and its association with psychological well-being and also to determine the amount of variance accounted for by the variables in the psychological well-being of pregnant women.

Based on the theoretical framework and purpose of the study, variables for this study were identified as independent and dependent. Psychological well-being was viewed as the outcome measure or dependent variable for the major model while the other variables were considered as having an effect on the outcome. For the first and second models, the dependent variables were different - maternal-fetal attachment and social support, respectively. The independent variables were the attachment variables, first two (mother-daughter, husband-wife) in the first model and all three (mother-daughter, husband-wife, maternal-fetal) in the second model (Figure 2).



Schematic Representation of the Study Design

Figure 2

Within a multiple correlation regression approach the designation of variables as 'independent' and 'dependent' does not infer causality as in an experimental sense but rather addresses how one variable expressed as the dependent variable can be examined in relation to other factors of interest which are expressed as independent variables (Cohen & Cohen, 1975). Therefore,, in the major analysis (third model), psychological well-being was considered as the dependent variable with the other variables viewed as independent variables (Figure 2).

Independent Variables

Maternal-fetal attachment was defined for purposes of this study as the extent to which women engage in behaviors that represent an affiliation and interaction with their unborn child. From the literature about the nature of mothering and the tasks of pregnancy, five aspects of the relationship between mother and fetus were identified and designated as subscale titles for the Maternal-Fetal Attachment Scale (Cranley, 1981a). For the purpose of this study, maternal-fetal attachment is operationalized in terms of (a) role-taking, (b) differentiation of self from the fetus, (c) interaction with the fetus, attributing characteristics and intentions to the fetus, (d) giving of self, and (e) relating. The higher the scores on the Maternal-Fetal Attachment Questionnaire, the greater the attachment.

Mother-daughter attachment was operationalized in terms of the items on the Relationship with Mother subscale of the Prenatal Self-Evaluation Questionnaire (Lederman & Lederman, 1979). The higher the score, the more positive the mother-daughter attachment. The Prenatal Self-Evaluation Questionnaire consists of seven scales out of which the quality of the pregnant woman's relationship with her mother was used to measure mother-daughter attachment in this study. This scale measured the closeness, support, and empathy between the pregnant woman and her mother.

Husband-wife attachment was operationalized in terms of items on the Relationship with Husband subscale of the Prenatal Self-Evaluation Questionnaire (Lederman & Lederman, 1979). The higher the score, the more positive the husband-wife attachment.

Social support was operationalized in terms of items on the Norbeck Social Support Questionnaire (NSSQ) (Norbeck, Lindsey, & Carrieri, 1981). Higher scores on the Emotional Support subscale of the correlated with higher perception of social support for the pregnant woman.

Dependent Variable

Psychological well-being was operationalized for the purpose of this study in terms of items on the General Well-being Schedule GWB (Dupuy, 1974, 1978) as to the states of health, worry, energy level, satisfying interest in life, depressed-cheerful mood, emotional-behavioral control, and relaxed versus tense-anxious stages. The higher the scores on the GWB the more positive the psychological well-being of the pregnant woman.

The purpose of the research was to examine whether a pregnant woman's overall psychological well-being was associated with her attachment relationships with her mother, husband, and fetus and the social support available to her. The goal was to determine the extent to which these phenomena co-existed with one another. Therefore, the emphasis was placed on their correlational, not causal, relationship. Based on the conceptual framework, the research questions and the operational definitions, the study design was selected.

Setting

The setting selected for this study was a community health agency in an urban area in southwestern Canada. This setting was selected on

the basis that it offered a comprehensive and effective program of prenatal classes for primiparous pregnant women who resided in and around the city. Also, primiparous women who attended the obstetric and general practitioner's clinics in the city were almost completely represented in the prenatal classes offered by the agency. The women who attended these classes registered early in their pregnancy, and their husbands attended and participated in the regular prenatal class sessions with the wives. This offered the women the opportunity to consider their participation in the study in consultation with their husbands. In addition, the setting offered the investigator the opportunity to contact potential subjects in a quieter atmosphere compared to the obstetric clinics, which are generally crowded and where the clients are under greater pressure for time. The experience of the investigator as a nurse-midwife and as a researcher working with pregnant women in different countries also facilitated access to subjects.

The health agency is a very spacious and comfortably furnished new building with a large multipurpose room in the center and with offices, clinics, library, and counseling facilities on the periphery of the building. The multipurpose room is equipped with comfortable seating arrangements, tables, audiovisual appliances, and blackboard, as well as an adjacent coffee room for use at regular prenatal classes and other meetings. The room is well equipped for teaching and demonstration purposes, as well as for conducting exercise sessions for the couples. There are chairs for 13 couples, the maximum number attending one session. The couples attend three classes during the first trimester and six during the period from fifth to eighth month of pregnancy.

There was no other setting in the city where organized prenatal classes were offered during the period of the study.

Sample

A convenience sample of 115 mothers was sought from those registered for prenatal classes at the health unit. Criteria for sample selection included women who:

1. were reared by their own mothers
2. were married and living with their husbands
3. were 18 years or older
4. expected their first live-born infant (abortion - therapeutic and spontaneous - or stillbirth not omitted)
5. were 28 weeks or greater gestation
6. were without pre-existing medical condition or illness
7. were fluent in English (spoke and read it).

All primiparous mothers who met the above criteria were approached individually by the investigator at the health agency and invited to participate in the study.

Rationale for Criteria for Sample Selection

The criteria selected helped to control for confounding variables.

1. Since the literature supported the initial mother-child attachment as a prototype for later attachments (Bowlby, 1979), the subjects had to be reared by their mothers in order to have experienced the early attachment relationships with their mothers. Therefore, all pregnant women who participated

in the study were reared by their mothers at least up to 16 years of age.

2. In order to examine the relationships between husband-wife attachment and mother-daughter attachment, the subjects also had to be married and living with their husbands. All subjects selected were married and living with their husbands. Also, according to a report of the Canada Health Survey (Health of Canadians, 1981), the relationship of marital status to emotional well-being and distress revealed clear patterns. Married respondents were more on the positive end, suggesting possible influence of marital status on psychological well-being for other samples.

3. Age was controlled partially, as literature on teenage pregnancy suggests negative or problematic mother-daughter relationships (Abernethy, 1973, 1976). Age is also an important demographic and developmental variable in relation to pregnancy, attachment, social support, and psychological well-being. The influence of age on psychological well-being is supported by the Canada Health Survey (Health of Canadians, 1981).

4. Women who had had an abortion or stillbirth were not excluded from the sample as there was no indication from previous research that there would be significant differences in maternal-fetal attachment between mothers who had had an abortion or stillbirth and those who did not (Cranley, 1981; Wiggins, 1983).

5. Women were selected after 28 weeks gestation because literature on psychology of pregnancy indicated that the mother-daughter relationships were more stabilized during the third trimester due to the renegotiation and reconciliation processes taking place between the mother and daughter during pregnancy (Ballou, 1978a). Also, according to the literature, maternal-fetal attachment scores were higher during the third trimester (Cranley, 1981a; Rubin, 1975).
6. Mothers who participated in the study were free of any known medical condition or illness because chronic illness or other medical conditions might adversely affect the predictor and outcome variables in the study.
7. Understanding of the English language was necessary in order for the subjects to understand and respond to the questionnaire.

These criteria provided the investigator with a select sample that was composed of pregnant women in their third trimester who were free of any medical condition and were controlled for confounding variables as identified.

The demographic profile of study subjects from the health agency was considered comparable to the general profile of primiparous women who attended prenatal classes and prenatal clinics in the area and those women who delivered on the maternity unit of the general hospital in the city. The general hospital in the city provides maternity care services for women from the city and the surrounding rural areas. Further, obstetricians and general practitioners in the city encourage pregnant mothers, particularly primiparous women, to attend prenatal classes.

Due to sampling procedures, every woman who attended the prenatal class during the study period and who was eligible according to the selection criteria was approached by the investigator and invited to participate in the study.

There were 882 births in the area from April 1, 1982 to March 31, 1983. Two hundred forty couples attended prenatal classes, twenty-four sets of ten couples each. Of this total, thirty-two were multiparous women. There were four sets of classes for single mothers with approximately six in each class. Since April 1, 1983, the number in each class was increased to thirteen couples and the number of classes was increased to three per week. Therefore, the community health agency offered prenatal classes for 312 couples during the year.

During 1983-84, there were 1,037 births at the general hospital in the city, of which 383 were primiparous women. During the same year the health agency offered prenatal classes for 312 women. The difference in the numbers of primiparous births and attendance at prenatal classes accounted for those women who were not eligible to participate in the study and those who delivered at the hospital from out of the area and the province. It is therefore conceivable that during the seven months of data collection, all mothers who attended the clinic and who met the criteria for inclusion in the study were seen and invited by the investigator to participate in the study. The sample, therefore, is believed to be representative of the clinic population and of primiparous women in the city and surrounding area.

Informed Consent

Informed consent to participate was obtained before participation of the subjects in the study using the guidelines as approved by the Committee on Human Research, University of California San Francisco, San Francisco, California. A consent form (Appendix A) was written as the cover letter for the questionnaire. Confidentiality and anonymity of information were provided by using code numbers for each subject on the questionnaire and for data analysis and by treating the information as strictly confidential. The investigator was responsible for gathering data, which limited the number of people who had access to the data.

Sample Size

Data were gathered on a sample size of 115 mothers. The rationale for deciding on the number of women for the sample was the following:

1. An approximate approach is to have 10-20 subjects per variable (Cohen & Cohen, 1975).
2. Performing a preliminary power analysis with a Type I error, $a = .05$, and for an estimated moderate effect size, $f^2 = .15$, a sample size of 69 would yield a power of .8 (Cohen & Cohen, 1975, p. 151).
3. Understanding the limitations of estimating effect size a priori, previous research suggests the likelihood of a moderate effect. Cohen and Cohen suggested $f^2 = .15$ as an estimate of moderate effect size in such cases (Cohen & Cohen, 1975, p. 55). Therefore, a sample size of 100 was considered more than adequate for this study (conventional 'medium' effect size is a population r of .30). "Obviously, since little or nothing can be done after the

investigation is completed, determination of statistical power is of primary value as a preinvestigation procedure" (Cohen & Cohen, 1975, p. 55).

Sample Selection

Data were collected from March 1983 to October 1983, following approval of the study protocol. Approval of the administration and staff for use of the prenatal clinic at the health agency was obtained. In order to gain this approval, the proposal was presented to the public health nursing supervisor and the medical officer-in-charge of the health agency at two separate meetings. The purpose and procedure of the study and the extent of involvement necessary from the subjects were elaborated during the discussion. In order to protect confidentiality and anonymity of client information at the health agency, it was decided that the investigator approach the expectant women personally to invite them to participate in the study when they met for their regular prenatal classes at the health unit. At this meeting, the subjects would be assured of maintaining confidentiality and anonymity of the information provided.

The investigator met with the prenatal instructors at the health agency to discuss the purpose of the study and to seek their assistance in arranging for a 15-minute time period with each group at the beginning of one of their regular sessions for discussing the study. The time provided at the beginning of the session allowed the investigator the opportunity to personally invite the women to participate in the study by distributing flyers (Appendix B), to explain briefly the purpose and procedures of the study, and to answer questions

that they might have regarding their participation. The third or fourth class for each group was selected for scheduling the meeting in order to allow enough time for the group members to get to know each other and to be comfortable in the group before a stranger was introduced into their midst--the investigator. At the end of the meeting the women who were willing to participate in the study wrote their names and telephone numbers in the space provided at the bottom of the flyer. This information could either be collected by the investigator at the end of the meeting or be left with the prenatal instructor at the end of the session to be handed over to the investigator. The women who were eligible to participate put their names and telephone numbers on the sheet of paper at the end of the 15-minute meeting and handed it back to the investigator. Others who needed more time to make a decision regarding their participation left their signed consent with the prenatal instructor at the end of the class. Those who declined gave as a reason personal inconveniences, distance, transportation problems, and/or difficulty in adjusting their daily schedule for an appointment. There was an approximate 5% refusal rate among primiparous women who were eligible and were contacted.

In approaching the potential subjects, the investigator introduced herself as a nurse, a faculty member at the college in the city, and a doctoral student in nursing at the University of California, San Francisco. The purpose of the study and its potential for improving emotional aspects of care for expectant mother and families were explained. They were told that their participation in the study was highly valued. The nature of questions on the questionnaire was also described. A sample questionnaire was made available to the group if

they wished to see it. Procedures involved in the process of data collection were described and emphasis was made that their participation was voluntary.

Appointments for testing were made with all women who volunteered to participate. They were offered times most convenient for them as well as their families. The times made available for appointments for the subjects included any time during the day and just before or after prenatal classes, which were held from 7:30 am to 9:30 pm on three consecutive days during the week at the health agency. All but three women kept the appointments promptly. One woman missed the appointment and called immediately following the appointed time to reschedule same. The others were contacted and appointments were rescheduled. Another woman, who was moving out of the city close to the expected date of her delivery, refused to participate in the study in spite of the fact that she had agreed to participate in the beginning. One appointment was missed by the investigator, who was involved in a teaching situation.

The low refusal rate to participate in the study may be attributed to the personal contact of the investigator with the potential subjects, as well as her past experience in working with pregnant women, which might have strengthened the possibility of their participation in the study. Other factors that might have influenced the low number of declined invitations were the subjects' familiarity with the health agency, easy accessibility to the setting from different parts of the city, and interest in being part of a study that had the potential to improve health care for pregnant women. Several women expressed satisfaction and interest in volunteering to be part of a study. Also, as there were not many research projects in progress in the small city,

the idea of participating in a research study might have been novel for several of the subjects. The excellent physical facilities of the health agency also might have contributed to their participation.

Instruments

Each subject completed a paper-and-pencil structured research questionnaire (Appendices C-H), which was administered by the researcher during an appointed time at the health agency. This research questionnaire was composed of five parts, as follows. Part I A (Appendix C), Personal Data, included sociodemographic factors, obstetrical history, aspects of family relationships, and plans for labor and delivery. Part I B (Appendix D), Personal Data, included six questions dealing with their health status and how they felt during pregnancy. Part II (Appendix E), The Prenatal Self-Evaluation Questionnaire (PSEQ) (Lederman & Lederman, 1979), was a standardized instrument that included two subscales that measured mother-daughter attachment and husband-wife attachment for the study. Part III (Appendix F), Maternal-Fetal Attachment Scale (MFA) (Cranley, 1981a), was a standardized instrument that measured maternal-fetal attachment. Part IV (Appendix G), The General Well-Being Schedule (GWB) (Dupuy, 1974, 1978), was a standardized instrument that assessed psychological well-being, and Part V (Appendix H), Norbeck Social Support Questionnaire (NSSQ) (Norbeck, Lindsey, & Carrieri, 1981, 1983), was a standardized instrument that measured social support. The next section contains a description of the research instruments (PSEQ, MFA, GWB, and NSSQ) and a discussion of their validity and reliability.

The selection of a tool for research purposes calls for consideration of three basic validity estimates. According to Allen and Yen (1979), the three basic validity estimates are content, criterion, and construct validity.

Content validity is established through a rational analysis of the content of a test, and its determination is based on individual subjective judgment. Two main types of content validity are face validity and logical sampling validity. The basis of content validity of an instrument is that the instrument measures what it seeks to measure because of the rationale or empirical sources of the actual content (Fox, 1976).

Criterion-related validity represent how the measure obtained by using the instrument corresponds to some other observation that accurately measures the phenomenon (Allen & Yen, 1979). Two subcategories of criterion validity are predictive and concurrent validity estimates.

Construct validity addresses the issues specifying the dimensions of a construct and how the dimensions relate uniquely and jointly. The selection of a tool for research also calls for two types of reliability estimates: test-retest reliability and internal consistency.

These validity and reliability types will be used to support validity and reliability of the instruments selected for this study.

A Prenatal Self-Evaluation Questionnaire for the Measurement of Seven Psychological Dimensions (PSEQ)

Two subscales of the Prenatal Self-Evaluation Questionnaire developed by Lederman and Lederman (1979) to further understanding of

psychological factors in pregnancy were used to measure mother-daughter attachment and husband-wife attachment. The two subscales used in this research were: 1) Relationship with Mother and 2) Relationship with Husband. The self-scored questionnaire took approximately 20 minutes to complete and provided measures of seven psychological dimensions during pregnancy. The psychological dimensions are:

1. Concern for Well-being of Self and Baby (WELL)
2. Acceptance of Pregnancy (ACCP)
3. Identification of a Motherhood Role (IMOR)
4. Preparation for Labor (PREP)
5. Fear of Pain, Helplessness, and Loss of Control (PHLC)
6. Relationship with Husband (RHU)
7. Relationship with Mother (RMO).

The dimensions selected for the instrument have been substantiated in the research literature as predictors of labor complications, fetal and newborn health status, and postpartum maternal adaptation.

The questionnaire contained a total of 79 statements. The expectant woman read the statements and indicated the extent to which they reflected her feelings by marking one of four response categories. There were positively and negatively worded statements for each scale. Separate measures for 'Relationship with Mother' and 'Relationship with Husband' were obtained by scoring the two subscales.

The subscale for relationship with mother was comprised of items 14, 18, 20, 21, 31, 37, 44, 55, 59, and 65 on the PSEQ. As there were positively and negatively worded items on the scale, items 14, 20, 21, 28, 31, 37, 55, and 59 were reversed. The subscale for relationship with the husband was comprised of items 4, 5, 10, 23, 35, 36, 40, 43,

60, and 70. This scale also contained positively and negatively worded items. Therefore, items 4, 10, 23, 35, 40, 60, and 70 were reversed. Each item on both scales offered four choices, which included 'very much so', 'moderately so', 'somewhat so', and 'not at all'. The weights of these responses were coded as 1, 2, 3, and 4 in the order of most agreement to that of least agreement as presented in the questionnaire. Therefore,, reversal of specified items helped to represent positive relationship with high scores on the scale.

Rationale for selecting the subscales from the PSEQ. Lederman and Lederman (1979) defined the subscales of the PSEQ so that each would provide unique information. Examination of items on the two subscales selected as research instruments for this study (RMO and RHU) also revealed agreement with the theoretical basis of the study as the items reflected attachment relationships with the husband and mother. The measure had high content validity since the statements paralleled the types of responses obtained to questions asked in prenatal interviews by Lederman and Lederman (1979). The authors compared the ratings on the PSEQ with interviewer ratings on the same psychological dimensions for 119 subjects in the study (Lederman & Lederman, 1979). The report indicated that there was no significant difference between mean and standard deviation for the sample on the interview and the questionnaire ratings. This finding supported construct validity for the instrument.

Criterion validity relating to the instrument is difficult to establish as there is no other instrument that measures the same variables to compare the findings with. Predictive validity studies for the instrument are being conducted by the author of the scale.

Data on the internal consistency reliability and independence of the questionnaire were reported for a group of 119 multiparous and primparous subjects from several clinical settings (Lederman & Lederman, 1979). A comparison of the Lederman and Lederman data with the study sample's is presented in Tables 1 and 2. The Cronbach alpha reliability coefficients indicating internal consistency of the scales ranged from .75 to .92 for Lederman and Lederman, whereas for the study sample it ranged between .67 and .84. The intercorrelation coefficients among the subscales ranged from .06 to .54 for the Lederman and Lederman sample, whereas for the study sample it ranged between .07 and .55 (Table 3).

TABLE 1

Intercorrelations and Cronbach Alpha Reliability
Among Seven Subscales of the Prenatal
Self-Evaluation Questionnaire
for the Study Sample (N = 115)

Scales	WELL	ACCP	IMOR	PREP	PHLC	RMO	RHU
WELL							
ACCP	.53						
IMOR	.35	.44					
PREP	.41	.46	.38				
PHLC	.51	.47	.34	.50			
RMO	.19	.19	.21	.07	.21		
RHU	.28	.55	.43	.36	.31	.24	
PSEQ	.71	.78	.64	.68	.70	.48	.68
Alpha	.83	.82	.67	.82	.70	.84	.75

TABLE 2

Intercorrelations and Cronbach Alpha Reliability
Among Seven Subscales of the Prenatal
Self-Evaluation Questionnaire
for the Lederman and Lederman Sample
(N = 111)

Scales	WELL	ACCP	IMOR	PREP	PHLC	RMO	RHU
WELL							
ACCP	.31						
IMOR	.21	.54					
PREP	.35	.33	.28				
PHLC	.52	.36	.28	.47			
RMO	.11	.27	.35	.25	.18		
RHU	.19	.25	.24	.15	.06	.30	
Alpha	.83	.90	.79	.80	.75	.92	.82

The intercorrelation coefficients were considerably lower than the Cronbach alpha coefficients of each of the scales for both samples, which established that the scales were relatively independent and that separate measures were justified for each of these constructs. The correlations of the subscales with PSEQ for the study sample was positive and large enough to suggest construct validity.

The Cronbach alpha coefficient for internal consistency of the scale for 'Relationship with Mother' was very high, .92, for the Lederman and Lederman sample. For the same sample, the reliability of the scale for 'Relationship with Husband' was also high, .82. For the study sample, these reliabilities were .84 and .75 (Tables 1 and 2). As

shown in Tables 1 and 2, the intercorrelation coefficients of the two subscales were .30 for Lederman and Lederman's sample and .24 for the study sample, which is considerably lower than the reliabilities for each of the scales. Thus, the scales were considered relatively independent to be used to measure two independent variables in the study.

TABLE 3

Prenatal Self-Evaluation Questionnaire Subscale
Inter-item Correlations and Reliability Coefficients

Scale	# Items	Inter-item Correlation			Coefficient Alphas
		Minimum	Maximum	Mean	
RMO	10	.05860	.73073	.37708	.84976
RHU	10	-.05845	.59790	.25350	.75521
PHLC	10	-.05360	.49470	.19870	.70390
WELL	10	.18638	.54356	.33275	.83118
PREP	10	.07245	.62993	.32514	.82004
ACCP	14	-.04515	.59078	.26653	.82289
IMOR	15	-.07705	.58599	.12226	.67146
TOTAL	79	-.20956	.73073	.13173	.91946

Maternal-Fetal Attachment Scale (MFA)

This 24-item scale with five subscales was developed by Cranley (1981a, 1981b) to measure the construct of maternal-fetal attachment and was tested on 71 subjects during the third trimester of pregnancy. Maternal-fetal attachment was defined by the author as the extent to which women engage in behaviors that represent an affiliation and interaction with the unborn child (Cranley, 1981a, p. 282). The five aspects of maternal-fetal attachment, identified as subscales, were:

1. Differentiation of Self from the Fetus (DIFF)
2. Interaction with the Fetus (INTE)
3. Attributing Characteristics and Interactions to the Fetus (ATTR)
4. Giving of Self (GIV)
5. Role Taking (ROLE).

The MFA was scored by assigning from one to five points for each item. The five points were assigned to all "definitely yes" answers. An MFA total score was computed that ranged from a possible maximum of 115 points to a minimum of 23 points. Higher scores indicated higher attachment while lower scores indicated lower attachment. Subscale scores were calculated on the same basis.

The scale was tested for validity and reliability with two samples for a total of 71 American primigravid and multigravid women between 35 and 40 weeks of gestation (Cranley, 1981a, 1981b). Content validity was built into the scale by consulting with other clinicians and a group of Lamaze teachers who provided a list of statements that mothers frequently make about themselves and the fetus. The statements were organized by subscales and the instrument drafted was submitted for

review to five nurses who were experts in the field of maternal and child health. A group of pregnant women also reviewed it for clarity and appropriateness of items. Thus, the methods used to build in content validity were through the combined use of literature review and clinical experience as well as the judgment of a group of experts. Content validity of the tool was further supported since items were drawn from a group that experienced the content that comprised the tool.

Predictive validity, a subcategory of criterion-related validity, was tested by Cranley (1981a). She attempted to establish predictive validity for the instrument through the use of the Broussard Neonatal Perception Inventory (Broussard, 1979) as a criterion measure for the Maternal-Fetal Attachment Scale. It was predicted by Cranley that the relationship between the woman and her fetus before birth would be positively correlated with her perception of the infant after birth. However, no correlation was found between maternal-fetal attachment or subscale scores and scores on the Broussard Neonatal Perception Inventory ($r = .01$, $p = .435$) (Cranley, 1981a, p. 283). This finding was explained by Cranley as follows. The scales used to measure the two variables measure distinctively different aspects of the maternal-infant relationship and are not comparable. The difficulty of establishing predictive validity might relate to differences in conceptualization of the general construct--Mother-Child attachment--by the authors of the tools, or it might be due to lack of any association between maternal-fetal attachment and postnatal mother-infant attachment relationships. As there is no other tool for measuring maternal-fetal attachment, it is difficult to establish concurrent validity. The author has addressed the issues of specifying the dimensions of the construct and how the

dimensions relate uniquely and jointly; for example, the nesting subscale was deleted and, later, item 22 on the MFA scale was deleted on the basis of Cranley's latest reliability work with 752 mothers, as well as the results of factor analysis with the instrument (Cranley, personal communication, 1984).

Establishing construct validity is an ongoing process. Intercorrelations were performed among the subscales and the total scale. All subscales were positively associated with the total scale and ranged between an $r = .61$ to $r = .83$. The magnitude of this positive association provided support for the convergence of the subscales, indicating that the subscales were measuring dimensions of the construct, thus establishing construct validity. Correlations among the subscales were also positive ($r = .29$ to .60) but low enough to indicate that they were not measuring the same thing.

Correlations among subscales for the study (Table 4) were lower ($r = .03 - .40$) as compared with Cranley's (1981a) results ($r = .29$ to .60) (Table 5). All subscales were positively associated with the total scales for the study ($r = .44$ to .80) and for Cranley ($r = .61$ to .83). The magnitude of this association is statistical evidence that the subscales measure different aspects of the construct, maternal-fetal attachment. Correlations among the subscales also were positive but low enough to indicate they were not measuring the same thing.

Internal consistency reliability estimations for the instrument and subscales were performed. A comparison of internal consistency for the scale and subscales for both the study and Cranley's samples are given in Table 6. Internal consistency reliability was established with a Cronbach's alpha coefficient of .85 for the total scale, with a range of

TABLE 4

Intercorrelation of the Five Subscales
of Maternal-Fetal Attachment for the Study Sample
(N = 115)

Scales	ROLE	DIFF	INTE	ATTR	GIV
ROLE					
DIFF	.12				
INTE	.24	.18			
ATTR	.24	.28	.40		
GIV	.30	.03	.12	.17	
MFA Total	.49	.50	.72	.80	.44

TABLE 5

Intercorrelation of the Five Subscales
of Maternal-Fetal Attachment for Cranley's Sample
(N = 71)

Scales	ROLE	DIFF	INTE	ATTR	GIV
ROLE					
DIFF	.47				
INTE	.41	.44			
ATTR	.45	.41	.60		
GIV	.31	.36	.29	.38	
MFA Total	.70	.69	.80	.83	.61

TABLE 6

Inter-item Correlations for the Maternal-Fetal Attachment Scale. Internal Consistency Reliability Coefficients for the Study Sample and Cranley's Sample

Scale	# Items	Inter-item Correlation			Coefficient Alphas	
		Minimum	Maximum	Mean	Study	Cranley
ROLE	4	.15224	.37218	.29187	.58	.73
DIFF	4	-.04872	.53320	.08670	.42	.62
INTE	5	.04018	.33271	.17250	.51	.68
ATTR	6	.10139	.52762	.22760	.58	.67
GIV	4	.13686	.42721	.23034	.55	.52
TOTAL	23	-.15089	.65028	.11165	.71	.85

.52 to .73 for the subscales (Cranley, 1981a). For the study sample, these reliabilities were .71 for the total scale and between .42 and .57 for the subscales. These coefficients were sufficiently high for claiming internal consistency.

A test-retest reliability estimate was not established for the scale. The fact that maternal-fetal attachment, according to the literature, will change during the course of pregnancy means that it might pose a problem in establishing test-retest reliability.

Rationale for selecting the MFA. Content validity for the instrument, according to Cranley (1981a), was established through the use of literature review and clinical experience as well as the judgment

of a group of experts. Construct validity was established through intercorrelations among the subscales and total scale, which showed a positive association. Internal consistency reliability was also established for the scale. Previous work in the area by Arbeit (1975), Bibring and Valenstein (1976), Leifer (1977), and Rubin (1975) was used by Cranley to develop the construct and define the concept of maternal-fetal attachment. There has also been continuous and extensive research efforts on Cranley's part in refining the scale. Cranley's (1981b) research found positive relationships between social support and maternal-fetal attachment and between marital relationship and maternal-fetal attachment.

Rees (1980a, 1980b) also attempted conceptualization, description, and measurement of the construct of maternal-fetal attachment. Rubin (1975) identified the cognitive process during pregnancy as related to forming a bond with the fetus. Rees (1980a, 1980b) separated fantasies about the unborn child from the formation of a conception of the fetus as a person. There was difficulty in establishing validity and reliability for her scale, even though two of the Rees subscales did reach acceptable reliability and validity. Conceptualization of the fetus as a person and feelings of motherliness, for Rees, reached alpha coefficient levels of .87 and .89.

In spite of the limitation in establishing external validity for the instrument, Cranley's maternal-fetal attachment scale was considered the best available instrument and therefore was chosen as the measurement tool for maternal-fetal attachment for the present study.

The General Well-being Schedule (GWB):

Measure for Psychological Well-being

The General Well-being Schedule (GWB) was developed by Dupuy (1974, 1978) as a self-report instrument to measure the concept of psychological well-being through self-representations of subjective well-being or distress. The instrument contains 22 items designed to measure general psychological well-being, the dependent variable in this study. Six specific domains containing a specified number of items for each one are covered by the GWB. The domains and number of items are as follows:

1. Intrinsic life satisfaction - 4 items
2. Health, worry, concern, or conditions - 3 items
3. Depressed mood - 3 items
4. Behavioral, mental emotional control, or self-control - 3 items
5. Energy level of vitality - 4 items
6. Tension/anxiety/stress - 5 items.

The GWB allows six possible options for each item. There are positively and negatively worded statements for each scale. A score of 0 represents the greatest level of distress, and the maximum score represents the highest level of positive well-being. The total range of scores is 0 to 110, which is interpreted as follows: positive well-being, 73-110; moderate distress, 61-72; severe distress, 0-60. Each item requires that the response is to be answered within a time frame of the past one month.

The total score representing general well-being and the six GWB cluster scores were obtained after recording the necessary items on

scales 1, 2, 3, 4, 5, and 6 to equal 0 through 5. All low scores (0) were considered 'bad' and all high scores (5) 'good'. Thus, high scores on the scale represented high levels of psychological well-being and low scores represented subjective levels of distress.

Validity. National normative data on psychological well-being were developed by the Health and Nutrition Examination Survey (HANES) which was conducted between April 1971 and October 1975 (Miller, 1973) utilizing 100 different locations in the United States. The normative data reported by Dupuy (1978) represented a sample of adults (N = 6,913) between the ages of 25 and 74.

Dupuy (1978) reported that the structure and content of the items on the instrument were considered to be comprehensive operational measurements of general well-being, supporting content validity. Also, a careful examination of the subscales indicates that the six subscales of the instrument provide information about the construct, psychological well-being. These subscales are considered multidimensional and focus primarily on psychological symptoms.

In addition, a factor analysis on the GWB data obtained in the Health and Nutrition Examination Survey revealed a strong general factor for the GWB items (Dupuy, 1978). A varimax rotation resulted in three factors with eigen values greater than 1. The author reported the following information regarding factor loading: (a) the first factor loaded on negatively worded items that reflected anxiety, tension, and depression content; (b) the second factor loaded on items that were neutrally worded and reflected health and energy content; and (c) the third factor loaded on items representing positive well-being. Therefore,, Dupuy concluded that the content of the GWB was

representative of negative, neutral, and positive affective states, which was what the GWB purported to do.

Concurrent validity, a subcategory of criterion validity for the GWB, was examined by Fazio (1977) in a study of a sample of 195 college students who participated in an investigation into ways of assessing depression among college students. The Minnesota Multiphasic Personality Inventory, the Psychiatric Symptoms Scale, a personal interview, and the GWB were administered to all subjects. The subjects were then divided into groups: Group I was administered the Zung Self-rating Depression Scales and the College Health Questionnaire, while Group II received the Personal Feelings Inventory. The GWB was able to differentiate the more depressed students from the less depressed ones and did so better than the other measures. According to Fazio, the major weakness of the instrument was that the "subscales have too few items to provide content homogeneity and reliable subscales for individual assessment on these aspects of well-being or distress" (p. 12). A comparison of the GWB in terms of validity with other measures with which it should correlate showed that the total GWB correlated at .7 with a depression inventory and .8 with the Luben Adjective Checklist. This finding also supported established concurrent validity for the GWB (Ware, Johnston, Davis-Avery, & Brook, 1979).

In a comprehensive review of validity of the GWB, Ware and colleagues (1979) reported that the association between three overall mental health measures--the Screening Score, the Affect Balance Scale, and the GWB--was more highly related to those measures that define mental health from a psychological standpoint than to those that include

physiological phenomena. Therefore, the idea that the instrument possesses construct validity for mental health is supported.

In order to examine the validity of the concept that the subscales were measuring dimensions of the construct of psychological well-being, intercorrelations were performed among the subscales and the total scale for the study sample (see Table 7). All subscales were positively associated with the total scale (r = .73 - .89). The magnitude of this association is statistical evidence that the subscales measure different aspects of the construct of psychological well-being. Correlations among subscales were also positive (r = .15 - .81). These findings of the study, along with other studies reported earlier, support construct validity for the instrument, GWB.

TABLE 7

Intercorrelation of the Six Subscales of the General Well-being Schedule (N = 115)

Scales	C1	C2	C3	C4	C5	C6
C1						
C2	.53					
C3	.73	.51				
C4	.72	.45	.76			
C5	.57	.72	.53	.15		
C6	.67	.52	.81	.66	.60	
Total GWB	.85	.73	.87	.81	.79	.89

Reliability. Internal consistency and test-retest reliability were established for the GWB through different studies utilizing different populations. The HANES study reported that internal consistency among GWB items was .93, suggesting that the index was tapping a general factor. For Dayton sample data (Brook et al., 1979), internal consistency of the HIS-GWB was .94, based on the Health Insurance Study (HIS). This study used four groups differing in educational background, and the estimates indicated similar reliability across all groups.

Dupuy (1978) reported a test-retest reliability coefficient of .80 after a three-month interval (N = 108), indicating stability over time. Fazio (1977), based on a study of 41 depressed students and a three-month retesting, reported a test-retest reliability of .85 for the scale.

Internal consistency estimations for the instrument and subscales based on the study sample (N = 115) are presented in Table 8. The Cronbach's alpha coefficient reliability was .93 for the total scales, whereas the subscales had coefficient alphas ranging from .53 to .83. These coefficients are high enough to support internal consistency for the scales based on the study findings.

The GWB has been used in a number of research projects with different populations and for different purposes. Through the HANES in 1971, a general population of healthy adults was studied, developing national norms on a general population. Edwards and colleagues (1979) used the GWB as part of a community mental health assessment in a psychiatric population, comparing community norms to patient norms, and

TABLE 8

General Well-being Schedule Subscale
Inter-item Correlations and Reliability Coefficients

Scale	# Items	Inter-item Correlation			Coefficient Alphas
		Minimum	Maximum	Mean	
C1	4	.35804	.54450	.44456	.75503
C2	3	.27356	.45522	.33705	.53794
C3	3	.59845	.70723	.65322	.83692
C4	3	.50065	.53821	.51396	.75945
C5	4	.39922	.67756	.57351	.78786
C6	5	.55813	.71985	.61720	.88259
TOTAL	22	.11881	.71985	.42614	.93768

reported that mean scores for patient groups were significantly lower than for the normative sample ($p = .05$) and documented that the GWB was able to differentiate between subjects considered impaired and the general population from the community.

In the present study, the focus is on the psychological well-being of a specific group of pregnant women from a select setting in Canada. As the sample characteristics of the present study represent Caucasian women of British and European descent of second or third generations, the present sample may be considered similar in characteristics to the population of the midwestern United States.

The Norbeck Social Support Questionnaire (NSSQ)

This instrument was developed by Norbeck, Lindsey, and Carrieri (1981) to measure multiple dimensions of social support. The three main variables indicated in the instrument are total network (number and duration of relationships and frequency of contact), total functional support (affect, affirmation, and aid), and total loss (number of categories of persons lost and total amount of support lost).

In the first phase of testing, high levels of test-retest reliability and internal consistency were established. The social desirability response bias was ruled out, the basis for content validity was described, and moderate levels of concurrent validity were established (Norbeck et al., 1981). Subjects in the first phase were graduate and undergraduate nursing students.

During the second phase of testing the NSSQ, a small normative data base was developed for employed adult subjects. Evidence for construct validity was found through significant correlations between the NSSQ and two similar interpersonal correlation constructs (need for inclusion and need for affection) and through lack of correlation with an unrelated interpersonal construct (need for control). As in Phase 1, evidence for concurrent validity was obtained with another instrument which purported to measure social support--the Personal Resource Questionnaire (Brandt & Weinert, 1981)--through medium levels of association. Evidence for predictive validity was found through assessing the buffering effect of social support on negative mood following life stress.

The instrument has established reliability. In a second phase of NSSQ development, stability and sensitivity were measured. The instrument was readministered to 44 beginning graduate students and was

repeated seven months after the initial testing. Correlation between first testing and the seven months following ranged from .58 to .78, which represented a moderately high degree of stability over time, although lower than the one-week test-retest correlation, which ranged from .85 to .92, indicating sensitivity to changes in the network over time (Norbeck et al., 1981).

Currently the NSSQ is being employed in a number of clinical investigations with highly varied populations, which might help in further refinement of the scale.

The NSSQ was chosen as the instrument for measurement of social support for the present study as there is conceptual agreement between the theoretical basis of the instrument and the theoretical basis of the research study (Kahn, 1979). Also, the applicability of the items on the tool to the needs of the selected sample of pregnant women was considered in the selection of the tool. In addition, the fact that the instrument was developed on a nonclinical adult, predominantly female, population supported the rationale for the choice of the instrument.

The NSSQ could be scored directly from the questionnaire or the responses might be transferred to a one-page scoring sheet. For the present study, the one-page scoring sheet was used. All of the subscales and variables and most of the descriptive data are available from direct scoring. The advantage of using the scoring sheet was that the data were fully represented on a single page and additional descriptive data related to source of support could be calculated.

A computer codebook for the data obtained from scoring the NSSQ could also be used. Column numbers correspond to the numbers within

brackets on the NSSQ. The items were listed in the order that they appeared on the questionnaire.

Prior to transferring the subjects' responses to the scoring sheet, the source categories were coded (0-9) as indicated in the direct scoring section. These code numbers were entered in the first column of the scoring sheet, entitled 'Relationships'. For the purpose of this study, code 0, which was usually 'none', was changed to 'mother', which still specified a type of relationship in the personal network. This was done in order to elicit support available from mother as a source separate from the family.

Affect, affirmation, and aid were each measured through the ratings made in response to two questions. These were combined into a single score for each subscale.

Each of the three main variables were composed of three subscales. Total Functional Support was composed of 'affect' plus 'affirmation' plus 'aid'; Total Network Properties was composed of 'number listed' plus 'duration' plus 'frequency of contact'; and Total Loss was composed of 'loss' plus 'loss number' plus 'loss amount'. Emotional Support was composed of 'affect' plus 'affirmation'.

Pilot Study

The research questionnaire was pretested by having 15 pregnant women in the community complete the questionnaire. The instruments had been used by other researchers and therefore it was not necessary to use a large sample. Each was asked to fill out the questionnaire and to return it to the investigator. The purpose of the pretest was to

determine if the overall format of the questionnaire was readable and to determine the range of time within which the questionnaire could be completed. Participants in the pilot testing completed the questionnaire in 30 to 45 minutes. Their comments were collected and reviewed. No major change was necessary on the basis of the comments.

Data Collection Procedures

When the pregnant woman arrived at the health agency, the investigator met her and escorted her to a conference room which was furnished with two comfortable chairs and a desk. The room offered sufficient privacy and quiet surroundings to complete the consent form and the questionnaire. After the subject read the consent form, she was asked if she had any questions about it before she was invited to sign it. She was instructed to complete the questionnaire after reading it carefully. The investigator explained to groups as well as individuals that it was important to have the questionnaire completed by the pregnant woman without any feedback from anyone else as it was to measure the woman's perceptions of the selected factors.

The investigator remained available in the next room to answer any questions regarding the questionnaire. On completion, the questionnaire was checked by the investigator to make sure that every item had been completed. Time for administering the questionnaire varied from 30 to 45 minutes. At the end of the testing period, the investigator expressed her appreciation to each pregnant woman for participating in the study. Several women expressed interest in receiving information about the outcomes of the study. They were told that a brief report of

the major findings would be published in the city's daily newspaper and that, for additional information, the investigator could be contacted.

Data Analysis

Data obtained in this study were based on scales which lend themselves to analysis as interval data. Multiple regression and correlational analysis have been employed for the analysis of the major research questions and hypotheses. Other analysis of descriptive data employed techniques such as frequency distributions and Chi-square analysis, which will not be discussed.

> Multiple regression/correlation analysis (MRC) is a highly general and therefore very flexible data analytic system that may be used whenever a quantitative variable (dependent variable) is to be studied as a function of, or in relationship to, any factors of interest (expressed as independent variables). (Cohen & Cohen, 1975, p. 3)

It is especially useful in social science research where cause/effect relationships are rarely simple and multivariate analysis is essential. Multiple regression assumes that relationships between variables are linear and additive. Also, this method accounts for the interactive influences of the independent variables. "The greatest virtue of the MRC system is its capacity to mirror with high fidelity the complexity of the relationships that characterize the behavioral sciences" (Cohen & Cohen, 1975, p. 7). This method allows for a prediction equation to be obtained, indicating how scores on the predictor variables can be weighted and summed for the best prediction. An estimate of the variance accounted for by the joint influence of the independent variables is obtained (Nie, Hull, Jenkins, Steinbrenner, & Brent, 1975).

In stepwise regression, a forward or backward stepwise analysis may be performed. In the forward stepwise regression analysis, the scores for each of the independent variables as well as the dependent variables are fed into the computer. The computer selects the single most predictive variable as the first variable. The second variable in the equation is then selected, based upon the best predictive value in combination with the first variable. The second variable is selected on the basis of its contribution and interaction with the first variable. This process is continued until the addition of further variables no longer contributes substantially to prediction.

Each step of the regression analysis computes an F value and a probability statement for the individual variable and for the combination of variables at that step. A total multiple R value is also obtained at each step of the regression, representing a linear relationship between variables. The multiple R^2 represents an estimate of the amount of variance accounted for by that combination of independent variables with the dependent variable.

Backward stepdown multiple regression analysis was used in this study as this method, unlike forward stepwise analysis, allows for computing simultaneously the significance of each of the variables given the presence of all others. A stepwise decision is made to throw out variables by removing the least significant variable using the test of significance. A variable has to maintain a .10 level of significance to remain in the model.

Hierarchical regression analysis was not the choice as it requires a strong theory to decide on hierarchy. Also, this method has a disadvantage in that the variance shared between first and second order

variables is due to the first variable. In this method, hierarchy is decided upon ignoring the significance of variables at the end of the hierarchy.

Statistical analysis of the data was done at the Computer Center of the University of California, San Francisco using the Statistical Package for the Social Sciences (SPSSX). The level of significance used for this study was $p < .05$.

Summary

This chapter explained the passive observational design of the study. A convenience sample of 115 expectant mothers who met the study criteria participated in the study. Data were collected using four instruments measuring mother-daughter attachment, husband-wife attachment, maternal-fetal attachment, social support, and psychological well-being. The chapter outlined the sample selection criteria, the study instruments, and the procedures used for collecting and analyzing the quantitative data.

CHAPTER IV

FINDINGS

Introduction

Findings of this study are presented in relation to study questions and hypotheses within the framework of Bowlby's theory of attachment and Erikson's theory of psychosocial development. The first section presents a review of demographic characteristics and descriptive statistics relating to the attachment and social support variables and psychological well-being. In the next section the relevant relationships observed between independent and dependent variables are presented. The last section of the chapter will present additional findings not directly related to the major research questions or hypotheses.

As specific results are presented, they are described and pertinent comments made that might help in providing possible theoretical explanations for individual outcomes. In Chapter V, these results are examined from a broader theoretical perspective in an effort evaluate the relevance of the framework to the research questions.

Preliminary Analysis

Sample Characteristics

Study subjects were a convenience sample of primiparous women in their third trimester who were married and living with their husbands and who attended prenatal classes at an urban community health agency in Canada. All study variables were treated as interval data for the analysis except for nominal variables such as husband or mother staying during delivery.

As far as ethnic background of the general population is concerned, there are no statistics available in the Alberta Bureau of Statistics (1983) report or in city or other institutional records. The Alberta Bureau of Statistics included a classification of the population according to mother tongue instead of ethnicity. According to this report, only 6% of the population spoke and understood a language other than English or German. English was the mother tongue for 82% of the population. The 6% who spoke German were senior citizens who had immigrated to Canada in the early part of this century. Therefore, it is difficult to estimate the distribution of the population according to ethnic background. Occasionally Chinese and Vietnamese or others who belonged to different ethnic backgrounds delivered at the hospital but had not attended prenatal classes. The classes were taught in English and were not specifically geared to the special needs of the small non-English-speaking population. Among the mothers who were contacted during the study period, there was only one who was not Caucasian; she was Chinese and was not included in the study because of her difficulty with the English language.

The demographic profile of the study subjects from the health agency can be considered comparable to the general profile of primiparous mothers who attended prenatal classes and clinics and delivered in the maternity unit of the general hospital in the city. In addition, the demographic characteristics of the subjects were considered comparable to the characteristics of the general population in the area. The sociodemographic data of the sample are presented here to facilitate understanding of the findings relevant to the research questions and hypotheses.

The subjects' ages ranged from 19 to 33 years (mean = 24.48). Husbands' ages ranged from 19 to 36 years, and the mean was 26.84. Number of previous pregnancies ranged from 0 to 2 with a mean of .13. There were 13 women in the sample who had a history of abortion. Stage of pregnancy in number of weeks for the sample ranged between 28 and 40; the mean was 34.07. Length of marriage in months for the mothers ranged from 2 to 132; the mean was 36.88.

Educational level of the sample ranged from 9th grade to a postgraduate degree, as shown in Table 9. A comparison of educational levels of subjects and husbands is given in Table 9. As can be seen, 7.7% of the subjects and 21.4% of the husbands had not graduated from high school. Of the subjects, 91.4% had education ranging from high school diploma to college graduation and of their husbands, 78.7% had similar education. One subject and three husbands had earned a graduate degree. From these educational levels, it can be seen that both the selected sample of women and their husbands possessed comparably high levels of education.

TABLE 9

Comparison of Educational Level of Subjects and Their Husbands
(N = 115)

	Subjects		Husbands	
Education	Frequency	Percent	Frequency	Percent
9th Grade	1	.9	4	3.5
Partial High School	8	7.0	20	17.4
High School Graduate	43	37.4	39	33.9
Partial College or Training	46	40.0	37	32.2
College Graduate	16	13.9	12	10.4
Graduate Degree	1	.9	3	2.6

A comparison of subjects' occupations with that of their husbands is given in Table 10. Hollingshead's (1975) four-factor index was used to compute socioeconomic status for the subjects, utilizing education, occupation, sex, and marital status for both husbands and subjects. Weighting factors of 3 for scores on education and 5 for scores on occupation were used in calculating socioeconomic status. The minimum possible score would be 8 and the maximum 66. This method of computing socioeconomic status is considered advantageous for the study since pregnant women during the third trimester usually do not work and, in the case of young women who did not have time to achieve high levels of education, educational level by itself might not serve as a true indication of socioeconomic status. Hollingshead (1978) recommended a status structure that estimated the social position of an individual or

TABLE 10

A Comparison of Percentages in Different Categories of Occupations for Subjects and Husbands
(N = 115)

Category	Frequency		Percent	
	Subjects	Husbands	Subjects	Husbands
Housewife	24	0	20.9	0.0
Farm laborer (manual)	0	3	0.0	2.6
Unskilled worker	5	7	4.3	6.1
Machine operator	4	17	3.5	14.8
Skilled manual	8	42	7.0	36.5
Clerical, small farm	27	4	23.5	3.5
Technician, semiprofessional	21	19	18.3	16.5
Farm owner, manager	9	10	7.8	8.7
Administrator	17	10	14.8	8.7
Major professional	0	3	0.0	2.6

nuclear family according to five meaningful groups of scores obtained by computing socioeconomic status. The assumption of a meaningful correspondence between a stratum and the social behavior of individuals in nuclear family groups was validated originally by the use of factor analysis (Hollingshead, 1978). Table 11 represents the percentage of subjects in each of the five categories of social strata. As can be seen, the majority of subjects in the study sample belonged to the second and third highest positions, 7% to the top group, 15.6% in the second lowest, and 3.5% in the lowest category. This is representative of the province, which has the second highest average family income in Canada (Canada Update, 1983).

TABLE 11

Socioeconomic Status of the Study Sample

(N = 115)

Hollingshead's Socioeconomic Strata	Range of Scores	% Subjects (nuclear family) in Each Stratum
Major Business and Professional	66-55	7
Medium Business, Minor Professional, Technical	54-40	40
Skilled Craftsmen, Clerical, Sales	39-30	32.1
Machine Operators, Semiskilled Workers	29-20	15.6
Unskilled Laborers, Menial Service Workers	19-8	3.5
Total		98.2*

* Does not add up to 100% due to rounding off.

Descriptive Statistics for the Demographic, Descriptive, Predictor, and Outcome Variables

Mother-daughter attachment. All of the subjects in the study were reared by their mothers, following the sample selection criteria. Table 12 represents the frequency distribution of number of years the subjects lived with their mothers. As can be seen from the table, 82.1% of the sample lived with their mothers for a period ranging from 17 to 20 years, 14.5% of the subjects lived with their mothers for over 20 years, and 3.5% lived with their mothers between 15 and 16 years. Of the subjects, 3.4% contacted their mothers less than once a month, 29.1%

TABLE 12

Number of Years Lived with Mother
(N = 115)

Years	Frequency	Percent
15	1	.9
16	3	2.6
17	20	17.4
18	32	27.8
19	23	20.0
20	19	16.5
21	10	8.7
22	4	3.5
23	2	1.7
26	1	.9
Total	117	100.1

one to four times per month, 20.5% once a week, and 47% two or more times per week.

The range, mean, and standard deviation of the scores for the scales of the Prenatal Self-evaluation Questionnaire are presented in Table 13. The scores for the scale, Relationship with Mother, which measured mother-daughter attachment ranged from 19 to 40. The mean score was 37.7 and the standard deviation was 4.8. A comparison of mean

TABLE 13

Mean, Standard Deviation, and Range for
Prenatal Self-Evaluation Questionnaire Scales
(N = 115)

Variable	$\bar{X}$	SD	Min	Max
RMO*	34.700	4.798	19	40
RHU**	35.217	4.129	22	40
IMOR	55.496	3.288	46	60
ACCP	51.000	4.355	33	56
PREP	33.426	4.230	23	40
WELL	33.452	4.389	17	40
PHLC	31.791	3.679	21	40
TOTAL	275.165	19.192	224	314

* RMO measured mother-daughter attachment
** RHU measured husband-wife attachment

RMO = Relationship with Mother; RHU = Relationship with Husband; IMOR = Identification with Motherhood Role; ACCP = Acceptance of Pregnancy; PREP = Preparation for Labor; WELL = Concern for Well-being for Self and Baby; PHLC = Pain, Helplessness, and Loss of Control

scores for the scales for the study sample and Lederman and Lederman's (1979) sample is presented in Table 14. The mean scores for the study sample were slightly higher than those of Lederman's sample (34.7 for the study sampoe and 32.7 for Lederman's sample). This may be explained on the basis of the study sample being brought up by mothers who are still living. As high scores for Lederman's sample represented a high level of conflict and concern and as high scores for the study sample represented positive attachment relationships, Lederman's mean scores were adjusted to match the positive scores of the study sample. Since the scoring system used for the Prenatal Self-Evaluation Questionnaire in this study was the reverse of the scoring system used in Lederman's

TABLE 14

Descriptive Data for Seven Scales of the
Prenatal Self-Evaluation Questionnaire
Comparison of the Study Sample with Lederman's Sample

Scales	No. Items		$\bar{X}$		SD		Alpha		n	
	L	S	L*	S	L	S	L	S	L	S
RMO	10	10	32.7	34.7	6.9	4.8	.92	.48	118	115
RHU	10	10	33.8	35.2	5.1	4.1	.82	.68	118	115
IMOR	15	15	54.8	55.5	4.6	3.3	.79	.64	119	115
ACCP	14	14	47.7	51.0	7.0	4.4	.90	.78	119	115
PREP	10	10	34.1	33.4	4.5	4.2	.80	.68	119	115
WELL	10	10	33.5	33.5	4.8	4.4	.83	.71	119	115
PHLC	10	10	31.8	31.8	4.2	3.7	.75	.70	118	115

L = Lederman's sample S = Study sample

* Means adjusted for the difference in scoring as explained in the text.

study, Lederman's values were adjusted to make the two scores comparable. For example, if the theoretical range was from 10 to 40, then to convert Lederman's scores to study sample scores, the equation used is S = (High - L) + Low, where S refers to the sample and L refers to Lederman. To convert study sample scores to Lederman's scores, the equation is L = (High - S) + Low. The High and Low in the equations refer to the theoretical range and not the actual range.

Eight mothers planned to have their husband and/or mother present during delivery. There were no cases where the mother would be present and the husband was not, suggesting that there was no substitution between the two; that is, there was no association between the husband and the mother staying during delivery. Chi-square was not significant, and Kendall's Tau was .033, p = .362. Having a friend or sister stay during delivery was reported by 2.6% of the subjects.

There were 38.5% of the subjects who planned to have their mothers stay with them to help after discharge from the hospital. For 59.6%, this was not thought to be possible, and for 2.6% of the subjects, such assistance was uncertain. There were 21.7% who planned to have a friend or sister stay with them and assist after discharge; 74.8% did not feel that such assistance would be available at home, and 3.5% were not sure of the availability of assistance.

Self-reported perceptions of health during pregnancy indicated that 32.2% of the subjects were in excellent health, 45.2% were in very good health, 14.8% in good health, 6.1% in fair health, and 1.7% were in poor health.

Husband-wife relationship. The range, mean, and standard deviation of the scores for the scale, Relationship with Husband, which

measured husband-wife attachment, are presented in Table 13. The scores ranged from 22 to 40. The mean is 35.22 and the standard deviation 4.13, slightly higher than those for Relationship with Mother. A comparison of mean scores of the study sample with those of Lederman's sample is presented in Table 14. As in the case of Relationship with Mother, the mean scores for Relationship with Husband for the study sample are slightly higher than those of Lederman's sample.

Maternal-fetal attachment. The range, mean, and standard deviation of maternal-fetal attachment scores are presented in Table 15. The scores ranged from 59 to 115 with a mean of 95.73 and a standard deviation of 7.55.

TABLE 15

Mean, Standard Deviation, and Range for Maternal-Fetal Attachment Scales (N = 115)

Variable	$\bar{X}$	SD	Min	Max
Roletaking	19.035	1.337	14	20
Differentiations of Self from Fetus	18.009	2.011	12	20
Interaction with Fetus	17.939	3.185	10	25
Attributing Characteristics to Fetus	22.861	3.476	14	30
Giving of Self	17.887	1.895	9	20
TOTAL MFA	95.73	7.554	72	110

Social support. The mean, standard deviation, and range for the major social support variables are compared with Norbeck and colleagues' (1981) sample of 89 females (Table 16). The range was between 34 and 504 for the present study and between 43 and 567 for the study of Norbeck et al. The means for affect, affirmation, and aid for the study sample are lower than the means for Norbeck and colleagues' sample. The range was between 9 and 168 for both affect and affirmation, the first two components of total functional support, and between 11 and 168 for aid, the third component for the study sample. In the case of Norbeck and colleagues' sample, the ranges were wider for affect, affirmation, and aid: 14-196, 11-194, and 18-197, respectively. For total functional support, which represents the sum of affect, affirmation and aid, the mean was lower for the study sample--170.92--compared to 281.18 for Norbeck and colleagues' sample.

The differences may be explained in terms of differences among the two samples in terms of work environment and social goals. Norbeck and colleagues' sample came from a nonclinical general population of working adults. The number of significant individuals in their lives might have been greater than for pregnant women, who are more concerned about pregnancy and preparation for the arrival of the new baby. Also, pregnant women tend to withdraw during the third trimester except to seek out others who are pregnant (Rubin, 1975).

The mean and range for each source of support category and percentage of subjects listing each source as network list and recent loss check list are represented in Table 17. The table also compares findings from Norbeck and colleagues' sample with the study sample.

TABLE 16

A Comparison of Study Sample on Mean Scores, Standard Deviations, and Range of Social Support Variables with the Sample of Norbeck, Lindsey, and Carrieri (1981)

Study Sample (N = 115)				
Variable	$\bar{X}$	SD	Min	Max
Affect	61.122	30.719	9	168
Affirmation	55.878	27.500	9	168
Aid	53.922	27.956	11	168
Total functional	170.922	82.839		
Number in Network	9.574	4.840	2	24
Duration Relationship	42.609	21.575	8	116
Frequency of Contact	37.470	16.788	9	95
Total Network	89.652	42.536		
Recent Losses	1.148	3.288	0	25
Total Loss	2.261	4.482		

Norbeck et al.'s Sample (N = 89)				
Variable	$\bar{X}$	SD	Min	Max
Affect	76.70	44.65	14	196
Affirmation	67.72	40.64	11	194
Aid	62.40	39.93	18	197
Total functional	281.18	121.53		
Number in Network	12.39	5.09	2	20
Duration Relationship	54.70	22.71	10	100
Frequency of Contact	44.84	18.31	8	82
Total Network	111.93	44.71		
Recent Losses	.44	.50	na	na
Total Loss	2.69	3.38		

TABLE 17
Mean and Range for Each Source of Support Category
and Percentage of Subjects Listing Each Source on Network List and Recent Loss Check List
(Comparison of Norbeck et al.'s Sample and the Study Sample)

	$\bar{X}$		Range		Network List			
Source of Support	N	S	N	S	N	S	N	S
Spouse or Partner	.62	1.00	0-2	1	61.0	100.0	8.3	0
Family or Relatives	4.32	4.44	0-15	0-19	97.1	96.5	21.8	17.9
Friends	5.48	2.56	0-16	0-9	94.1	87.8	27.1	14.5
Work or School Associates	1.02	.24	0-7	0-4	50.0	15.7	16.5	7.7
Neighbors	.26	.15	0-4	0-2	16.9	13.0	9.8	2.6
Health-care Providers	.10	.14	0-1	0-2	10.3	11.3	6.8	.9
Counselor/Therapist	.10	.02	0-2	0-1	9.6	1.7	.8	0
Minister/Priest/Rabbi	.12	.04	0-2	0-1	10.3	3.5	.8	1.7
Mother*	-	.98	-	0-1	-	98.3	na	0
Other	.16	.04	0-2	0-1	14.0	3.5	.8	0

N = Norbeck et al.'s sample S = Study sample

* Study sample included an additional category for mother. Norbeck et al.'s sample included mother with family and relatives.

In the source of support category, spouse or partner was reported by 100% of the subjects. As all the subjects were married and living with their husbands, it is not surprising that all of them listed their partners as source of support. There was a slightly higher proportion of support from family or relatives in the study sample when compared to Norbeck and colleagues' (1981) sample (4.44 for the study sample and 4.32 for Norbeck et al.'s sample). As can be seen from Table 17, the mean for each of the other sources of support category was much lower for the study sample than for Norbeck and colleagues' sample. The source of support category, Mother, was added for the study sample in order to examine the proportion of support available from mother and husband apart from other sources. In this study, only 15.7% of the subjects included work or school associates, 13% included neighbors, 11.3% included health-care providers, 1.7% included counselor or therapist, 3.5% included minister/priest/rabbi, and 3.5% included "other" as sources of support. Mother was included as a source of support by 98.3% of the study sample.

These findings reflect the relative contribution of each source of support category in the network for the subjects and need further examination to better understand the need for and the self-perception of support for pregnant women. The highest mean number of persons listed in the network for the study sample was for family or relatives, and the second highest was for friends. In Norbeck and colleagues' sample, the highest mean number of persons listed in the network was for friends and the second highest was for family or relatives.

Table 18 presents a comparison of the proportion of support from each source of support category for Norbeck and colleagues' sample and

the study sample. Total functional support offered by spouse, mother, and family or relatives amounted to 71.78 parts of the total functional support available from all sources of support. Norbeck and colleagues'

TABLE 18

Proportion of Total Number Listed, Total Functional Support, and Total Frequency of Contact by Each Source of Support Category Listed in Network (Comparison between Norbeck et al.'s Sample and Study Sample)

Source of Support	Proportion of Total Number Listed		Proportion of Total Functional Support		Proportion of Total Frequency of Contact	
	N	S	N	S	N	S
Spouse or Partner	6.8	13.42	8.2	16.79	8.8	16.59
Family or Relatives	35.9	42.95	35.3	40.61	33.0	40.64
Friends	43.7	25.13	44.3	22.78	43.2	23.71
Work or School Associates	7.7	2.12	6.8	1.71	9.2	2.52
Neighbors	1.9	1.35	1.7	1.07	2.0	1.51
Health-care Providers	.9	1.28	.8	.8	.7	1.05
Counselor/Therapist	.8	.20	.7	.18	.8	.16
Minister/Priest/Rabbi	1.0	.24	.9	.27	.9	.25
Mother	-	13.19	-	14.38	na	13.40
Other	1.4	.31	1.3	.25	1.5	.37

N = Norbeck et al.'s sample S = Study sample

* Included an additional category for mother. Norbeck et al.'s sample included mother with family and friends.

sample had 43.5 parts of support from spouse, family, or relatives. For the study sample, 16.79 parts of total support was from spouse and 14.38 parts from mother. Mother and husband offered almost equal amounts of support for the subjects. As these findings indicate, husband, mother, family, and relatives appear to assume more importance to women during pregnancy compared to other sources.

Psychological well-being. Total General Well-being (GWB) scores ranged from 41 to 106 with a mean of 81.97 and a standard deviation of 14.17. Table 19 depicts the mean, standard deviation, and range of total GWB and subscale scores. For the study sample, 11.3% experienced severe distress, represented by a score of 0 to 60; 9.6% of the subjects experienced moderate distress (a score of 61-72); and 79.1% of

TABLE 19

Mean, Standard Deviation, and Range for
General Well-Being Schedule Scales
(N = 115)

Variable	$\bar{X}$	SD	Min	Max
G1 (Positive Well-being)	14.6957	2.9385	6	20
G2 (Health Worry/Concern)	11.2609	2.2286	3	15
G3 (Depressed Mood)	12.5304	2.0788	6	15
G4 (Emotional Control)	12.1826	2.2226	5	15
G5 (Energy Level)	12.7565	2.9427	2	17
G6 (Tension/Anxiety)	18.5478	4.6098	3	25
TOTAL GWB	81.9739	14.1691	41	106

the subjects experienced positive well-being (a score of 73-110). The scores for the three categories of psychological well-being ranged from 41-59, 61-72, and 73-106, respectively. A comparison of percentages of study subjects in each category of psychological well-being for the study sample with those of the normative samples in Hanes' (Miller, 1973) and O'Rourke's (1980) studies is given in Table 20 and Figure 3. As may be seen, a higher proportion of the study sample experienced positive well-being: 79.1% in the study sample, 65.5% in Hanes' entire sample, and 68.3 in O'Rourke's entire sample.

A possible explanation for the slightly higher mean scores and higher percentage of positive well-being for the study sample is that the subjects were healthy adult women expecting their first live-born baby. Also, in the study sample most of the demographic variables and all preexisting medical conditions were controlled for by recruiting subjects without medical complications.

Correlations between Demographic, Descriptive, Predictor, and Outcome Variables

A correlation matrix including major demographic, predictor, and outcome variables is presented in Table 21. Correlations between all of these variables were examined to determine which demographic or descriptive variable should be controlled for in the major analysis. A summary table of significant correlations of demographic, descriptive, predictor, and outcome variables is presented in Table 22.

TABLE 20

Comparison of Percentages of Study Subjects in Each GWB Category with Percentage of Subjects in Each GWB Category from the Normative Samples of Hanes' Study, O'Rourke's Study, and the Study Sample

Category	GWB Score	Study Sample (N = 115)	Hanes Entire (N = 3743)	O'Rourke Entire (N = 1110)	Hanes Select (n = 1579)	O'Rourke Select (n = 601)
Severe Distress	0-17	0	.4	0	.2	0
	18-36	0	2.5	1.4	3.0	1.2
	37-48	2.6	4.7	2.4	5.0	2.6
	49-54	1.8	4.6	2.6	4.4	2.5
	55-60	6.8	4.9	6.6	5.0	7.2
Moderate Distress	61-64	4.4	4.9	5.4	4.9	6.1
	65-68	.9	5.1	6.5	5.4	6.5
	69-72	4.4	7.6	6.8	7.7	7.7
Positive Well-Being	73-77	7.8	9.8	11.9	10.5	11.8
	78-82	13.9	10.3	12.4	10.0	12.8
	83-95	43.5	28.8	33.2	29.5	32.1
	96-104	12.2	13.4	9.5	12.9	8.5
	105-110	1.7	3.2	1.3	1.4	1.0
		100.0	100.0	100.0	100.0	100.0

Due to rounding of fractions, the totals may not add up to 100.

FIGURE 3. DISTRIBUTION OF GENERAL WELL-BEING SCORES: COMPARISON OF STUDY SAMPLE, ENTIRE NATIONAL (Hanes) AND ENTIRE O' ROURKE SAMPLES

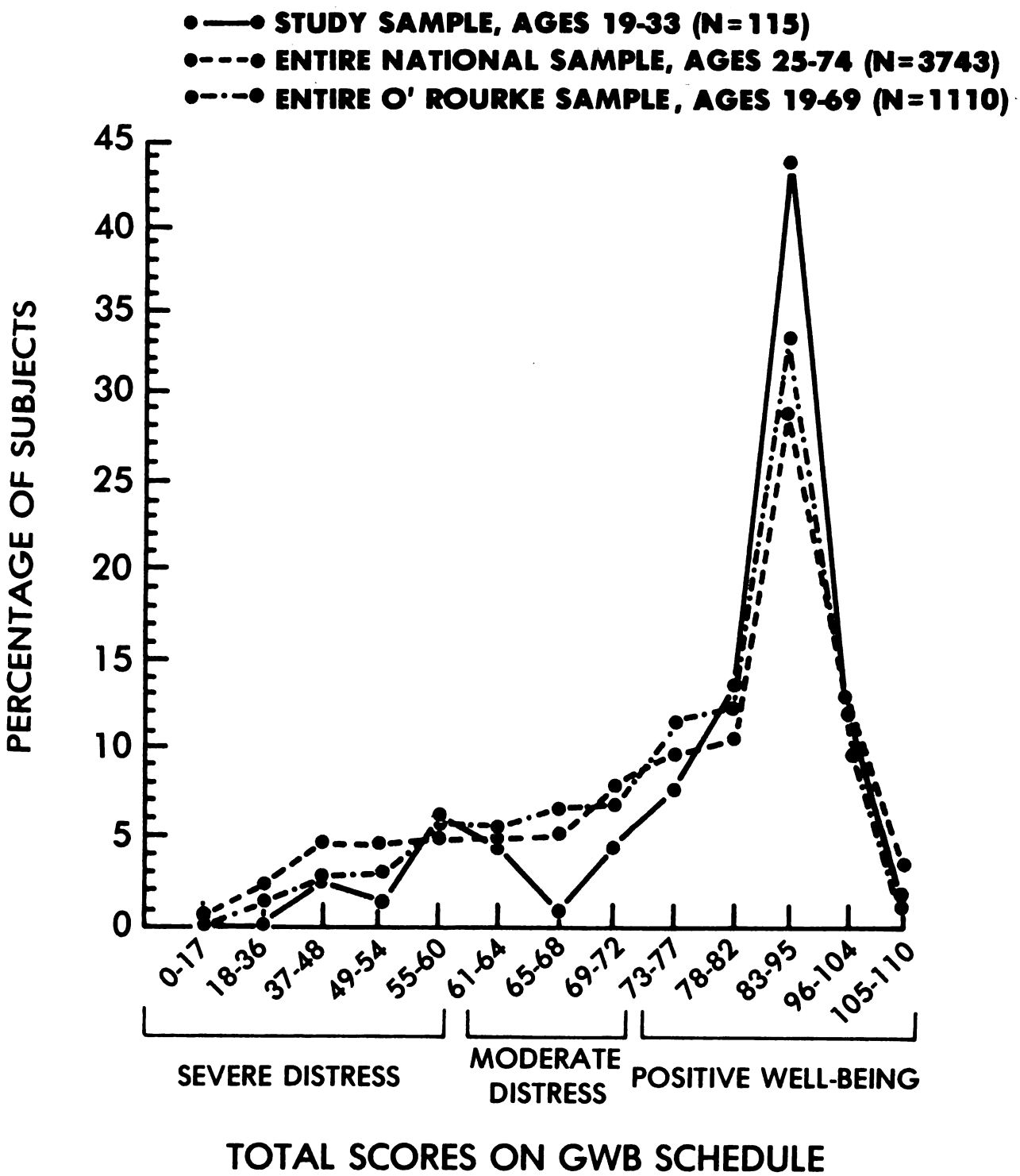


TABLE 21

Correlation Matrix for Demographic, Descriptive, Predictor, and Outcome Variables
(N = 115)

		1	2	3	4	5	6	7	8	9	10	11	12
1.	Psychological well-being	1.0000											
2.	Maternal-fetal attachment	-.0218	1.0000										
3.	Mother-daughter attachment	.2496[b]	.1365	1.0000									
4.	Husband-wife attachment	.4565[c]	.1183	.2420[b]	1.0000								
5.	Total network score	.1491	-.0304	.0339	.0702	1.0000							
6.	Total loss support	-.1192	-.0593	.0281	-.0135	.0083	1.0000						
7.	Length of marriage in months	.1245	-.0511	-.1631	-.1934[a]	.1415	-.1915[a]	1.0000					
8.	Weeks pregnant	-.0933	.3595[c]	.0577	-.0443	.0090	-.1433	.0294	1.0000				
9.	Socioeconomic status	.2204[a]	-.0522	.0578	.0563	.2094[a]	-.0285	.1780	.1080	1.0000			
10.	Age of wife	.2774[b]	-.1381	-.0009	-.0616	.1670	.0026	.5628[c]	.1428	.4367[c]	1.0000		
11.	Number of previous pregnancies	-.0667	.0441	-.2202[a]	-.0523	.0504	-.0384	.0377	-.0156	.0966	.0746	1.0000	
12.	Emotional support	.2120[a]	.0592	.1960[a]	.1612	.9271[c]	.0406	.1020	.0228	.2432[b]	.2488[b]	.0277	1.0000

Tests of significance are based on a two-tailed test.

a = $p < .05$

b = $p < .01$

c = $p < .001$

TABLE 22

Correlations Including Demographic, Descriptive, Predictor, and Outcome Variables

Variables	r	p
Psychological Well-Being and		
Mother-daughter attachment	.2496	.007
Husband-wife attachment	.4565	.000
Emotional support	.2120	.023
Socioeconomic status	.2204	.018
Age of wife	.2774	.003
Maternal-Fetal Attachment and		
Number of weeks pregnant	.3595	.000
Mother-Daughter Attachment and		
Husband-wife attachment	.2420	.009
Number of previous pregnancies	-.2202	.019
Emotional support	.1960	.036
Length married and		
Husband-wife attachment	-.1934	.038
Total loss of support	-.1915	.040
Age of wife	.5628	.000
Socioeconomic status and		
Age of wife	.4367	.000
Total network	.2094	.025
Emotional Support and		
Socioeconomic status	.2432	.009
Total network	.9297	.000
Age of wife	.2488	.007

Among the variables that were significantly correlated with psychological well-being, husband-wife attachment had a strong correlation that approached a large effect size ($r = .4565$, $p = .000$). (According to Cohen & Cohen [1975], a large effect size is $r = .50$.) Mother-daughter attachment demonstrated a statistically significant level of correlation approaching moderate effect size ($r = .2496$, $p = .007$). Emotional support and socioeconomic status demonstrated low but significant correlations of small effect size with psychological well-being ($r = .19$, $p = .038$ and $r = .22$, $p = .018$ respectively).

Mother-daughter attachment showed a weak but significant correlation with husband-wife attachment ($r = .2420$, $p = .009$). The number of previous pregnancies demonstrated small effect size and a negative correlation with mother-daughter attachment ($r = -.22$, $p = .019$).

The length of marriage showed a small effect size and a negative correlation with husband-wife attachment and with total loss of support over the past year ($r = -.1934$, $p = .038$ and $r = -.1915$, $p = .040$, respectively. The two social support variables, total network and emotional support, showed significant small effect size correlations at significant levels with socioeconomic status ($r = .2094$, $p = .025$ and $r = .2432$, $p = .009$, respectively). Age of the subject was highly significant in its correlation with psychological well-being ($r = .2774$, $p = .003$), length of marriage ($r = .5628$, $p = .000$), socioeconomic status ($r = .4367$, $p = .000$), and emotional support ($r = .2488$, $p = .007$).

In addition to the major correlation matrix, intercorrelation among social support variables--affect, affirmation, aid, emotional support,

total functional support, total network--and psychological well-being were performed in order to select the best social support variable for the data analysis. Because the components of total functional support--affect, affirmation, and aid--were highly correlated with each other ($r = .80$, $p = .000$), the correlations of tangible support (aid) and emotional support (sum of affect and affirmation) to other social support variables and psychological well-being were examined. As could be predicted, the social support variables were highly correlated with both aid and emotional support. Emotional support was positively correlated with psychological well-being at a significant level ($r = .2120$, $p = .023$). Tangible support did not show significant correlations with psychological well-being, the outcome variable. Because emotional support correlated positively with psychological well-being, it was chosen as the social support variable for the major analysis. Also, emotional support was considered more suitable in the study of attachment variables and psychological well-being than tangible support, as it represented affect and affirmation and not material and physical help. The intercorrelations among social support variables and psychological well-being are given in Tables 23 and 24. In the use of multiple regression analysis, it is important to rule out the potential danger of misleading results by including independent variables that are highly correlated (Cohen & Cohen, 1975; Kerlinger, 1973).

For the analysis, confounding variables were identified and either controlled for through sampling procedures (age--partially, parity, marital status, living with husband, number of weeks pregnant --partially, raised by mother, language spoken, medical condition) or formally incorporated into the model. For the simultaneous multiple

TABLE 23

Intercorrelations of Social Support Variables

	Affect	Affirmation	Aid	Emotional Support
Affect	1.0000	.9587	.8496	.9907
Affirmation	.9598	1.0000	.8469	.9884
Aid	.8496	.8496	1.0000	.8571
Emotional Support	.9907	.9884	.8571	1.000

Note: p = .000 for all variables

TABLE 24

Intercorrelations of Social Support Variables and Psychological Well-Being

	Aid	p	Emotional Support	p
Affect	.8496	.000	.9907	.000
Affirmation	.8468	.000	.9884	.000
Aid	1.0000		.8571	.000
Emotional Support	.8571	.000	1.0000	
Total Functional	.9336	.000	.9848	.000
Total Network	.8650	.000	.9271	.000
Psychological Well-being	.1377	.142	.2120	.023

regression analysis with the attachment variables and social support (Models I and II) (Figure 2), age was controlled for in the model in order to identify any influence of age as a developmental variables on the predictor and outcomes variables. For testing Model III (Figure 2), backward stepdown multiple regression analysis, including 11 variables demonstrating positive correlations with psychological well-being, was conducted. In the backward step-down multiple regression analysis, all the variables are entered and the significance of each variable, given the presence of all other variables, is computed simultaneously (Nie et al., 1975). A stepwise decision is then made to throw out the variables that are least significant. This was the method of choice as the study was exploratory in nature and therefore lacked a strong theoretical basis for assigning hierarchy to the variables for analysis. In addition, unlike hierarchical multiple regression analysis, this method has the advantage of not forcing the first variable entered to stay in the equation, thereby neglecting the level of significance of the last variable in the equation. The results of the multiple regression analysis are depicted in Tables 25, 26, and 27.

The models for multiple regression analysis adhered to the optimal subject- to-variable ratio of at least 10 to 1. The variables in the regression model included mother-daughter, husband-wife, and maternal-fetal attachment and emotional support. Age was included in the analysis as an important demographic variable and also as a developmental variable in relation to life-span attachment (Mercer, 1984). Age showed a positive correlation with psychological well-being. Socioeconomic status, another important demographic variable, which also correlated positively with maternal-fetal attachment and total

functional support, was also included in the analysis. Other variables included length of pregnancy in weeks, length of marriage in months, number of previous pregnancies, and total loss of support. Psychological well-being was the outcome variable for the model.

Study Questions and Hypotheses

Study Question 1

The first study question asked, "What is a greater predictor of fetal attachment, the woman's relationship with her original attachment figure (mother) or her current attachment figure (her husband)? To answer the study question, three hypotheses were tested.

Hypothesis 1: There is a positive relationship between mother-daughter attachment and maternal-fetal attachment.

Table 22 depicts the Pearson correlation coefficients and the significance levels for paired relationships between the independent variable--mother-daughter attachment--and the dependent variable--maternal-fetal attachment--as represented in Model I (Figure 2). The correlation coefficient of .14 was not statistically significant ($p = .146$). Thus, the hypothesis was rejected.

Hypothesis 2: There will be a positive relationship between husband-wife attachment and maternal-fetal attachment.

The independent variable--husband-wife attachment--was examined for its correlation with the dependent variable--maternal-fetal attachment--

as represented in Model I (Figure 2). Results showed no significant correlation between husband-wife attachment and maternal-fetal attachment ($r = .12$, $p = .208$) (Table 22). Thus, the hypothesis was rejected.

Hypothesis 3: Mother-daughter attachment scores and husband-wife attachment scores will have positive relationships with the pregnant woman's maternal-fetal attachment.

Simultaneous multiple regression analysis was performed in order to examine the variance explained by the independent variables--mother-daughter and husband-wife attachment--for the dependent variable--maternal-fetal attachment - as was represented in Model I (Figure 2). Table 25 depicts the variance explained by mother-daughter and husband-wife attachment on maternal-fetal attachment. Age as an important demographic and developmental variable was controlled for in the model. No significant relationship was found between maternal-fetal attachment scores and mother-daughter and husband-wife attachment scores, whether adjusted for age or not. Thus, the hypothesis was rejected.

Study Question 2

In order to answer the second study question, "What is the relationship of mother-daughter attachment to husband-wife attachment?", the following hypothesis was tested.

Hypothesis 4: There will be a positive relationship between mother-daughter attachment and husband-wife attachment.

Results of correlational analysis are presented in Table 22. Mother-daughter attachment demonstrated a small (approaching moderate)

TABLE 25

Predictors of Maternal-Fetal Attachment
Simultaneous Multiple Regression Analysis

Independent Variables	Beta	p
Age of wife	-.13292	.1557
Mother-daughter attachment	.11654	.2257
Husband-wife attachment	.08195	.3944

Analysis of Variance

R^2	Adj R^2	df	F	p
.04395	.01811	3, 111	1.7010	.1710

correlation (r = .24) with husband-wife attachment at a statistically significant level (p = .009). Thus, the hypothesis was accepted. (According to Cohen & Cohen [1975], r = .30 represents moderate effect size.)

Study Question 3

In order to answer the third study question, "Is there a relationship between life-span attachment of the pregnant woman and the social support available to her during pregnancy?", the following hypothesis was tested.

Hypothesis 5: Mother-daughter, husband-wife, and maternal-fetal attachment scores will have positive relationships with the pregnant woman's social support scores during pregnancy.

The relationships between the independent variables--mother-daughter, husband-wife, and maternal-fetal attachment--with the dependent variable--social support--was examined (as represented in Model II, Figure 2) using simultaneous multiple regression analysis. Age as a significant demographic variable was controlled for in the model. The results of the analysis are represented in Table 26. As can

TABLE 26

Predictors of Social Support
Simultaneous Multiple Regression Analysis

Independent Variables	Beta	p
Maternal-fetal attachment	.05875	.5217
Husband-wife attachment	.13289	.1541
Age of wife	.26520	.0041
Mother-daughter attachment	.15601	.0953

Analysis of Variance

R^2	Adj R^2	df	F	p
.12145	.08950	4, 110	3.80156	.0062

be seen, there is no statistically significant level of variance explained by any of the independent variables for the dependent variable, social support, except for age, which was a significant predictor of social support. As can be seen in the correlation matrix (Table 21), there is also no pairwise correlation between husband-wife and maternal-fetal attachment scores and social support. Mother-daughter attachment demonstrated a weak correlation with emotional support ($r = .1960$, $p = .036$). Thus, the hypothesis was rejected.

Study Question 4

The fourth study question asked, "Is there a relationship between social support available to the pregnant woman and her psychological well-being during pregnancy?" To answer this question, the following hypothesis was tested.

Hypothesis 6: Social support scores will have a positive relationship with the pregnant woman's psychological well-being during pregnancy.

The independent variable--social support--was examined for its correlation with the dependent variables--psychological well-being (Table 22). Results showed a statistically significant small correlation between emotional support and psychological well-being ($r = .2120$, $p = .023$). Thus, the hypothesis was accepted.

Study Question 5

To answer the fifth study question, "What is the significance of attachment relationships during pregnancy on the psychological well-being of the pregnant woman?", the following hypothesis was tested.

Hypothesis 7: Mother-daughter attachment scores, husband-wife attachment scores, and maternal-fetal attachment scores all will have a positive relationship with the pregnant woman's psychological well-being scores.

The relationship between the independent variables--mother-daughter, husband-wife, and maternal-fetal attachment--and the dependent variable--psychological well-being--was examined using backward stepdown multiple regression analysis, which controlled for demographic and descriptive variables. The proportion of variance explained by each attachment variable on psychological well-being are depicted in Table 27. As can be seen in this table, the highly significant predictor of psychological well-being is husband-wife attachment. Husband-wife attachment is a highly significant predictor, whether all the other variables are adjusted or not. Mother-daughter attachment is also significant when it is adjusted for all other variables. Maternal-fetal attachment was not related to psychological well-being controlling for all other variables. Thus, the hypothesis was partly accepted.

TABLE 27

Predictors of Psychological Well-being
Using All Variables in the Model
Backward Stepdown Multiple Regression

Source of Variance	Beta	p
Husband-wife attachment	.42758	.0000
Age wife	.32600	.0001
Mother-daughter attachment	.15973	.0487
Weeks pregnant	-.15087	.0603
Total loss of support	-.13991	.0757

Analysis of Variance

R^2	Adj R^2	df	F	p
.35660	.32682	5, 108	11.97179	.0000

Study Question 6

In order to answer the sixth study question, "How much variance do the attachment and social support variables account for in the psychological well-being of the pregnant woman?", the following hypothesis was tested.

Hypothesis 8: Attachment variables will account for a significantly greater proportion of the variance in the psychological well-being of pregnant women than the social support variable.

As represented in Model III (Figure 2), the relationships between four independent variables--mother-daughter attachment, husband-wife attachment, maternal-fetal attachment, and social support--and the dependent variable--psychological well-being--were examined using backward stepdown multiple regression analysis, which controlled for other demographic and descriptive variables. Table 27 depicts the relationships between the major independent variables and the dependent variable in the study. As can be seen, the highly significant predictor of psychological well-being in this model is husband-wife attachment (Beta = .42758, p = .000). Mother-daughter attachment is also a significant predictor of psychological well-being (Beta = .1597, p = .0487).

Although there is significant pairwise relationship between psychological well-being and social support (r = .2120, p = .023), after adjusting for husband-wife and mother-daughter attachment, there is no longer any significant relationship between the two variables. All of the predictive information in social support is already contained in the information in husband-wife and mother-daughter attachment. Thirty-six percent of variability in psychological well-being is explained by husband-wife attachment, mother-daughter attachment, and age of the subject (R^2 = .3566, Adj. R^2 = .32682 for the model) as is shown in Table 27.

Study Question 7

The seventh question asked, "Is there a relationship between age of the pregnant woman and her psychological well-being during pregnancy?" To answer this question, the following hypothesis was tested.

Hypothesis 9: Age of the pregnant woman will have a positive relationship with her psychological well-being during pregnancy.

The relationship between age of the pregnant woman and her psychological well-being was examined using the multiple regression analysis presented in Table 27. The results showed that age of the pregnant woman was a highly significant predictor of psychological well-being during pregnancy (Beta = .326, p = .0001). Table 28 depicts distribution of subjects under three age categories experiencing three different categories of levels of psychological well-being. As can be seen from the table, the percentage of subjects experiencing positive well-being increased with age. There were 61.76% of subjects who experienced positive well-being among 19-22 year olds, 85.71% among 23-26 year olds, and 87.5% among 27-33 year olds. Also, as can be seen

TABLE 28

Percentage of Subjects in Three Age Categories Experiencing Different Levels of Psychological Well-being

	Psychological Well-being (Percentage of subjects in each category)		
Age in Years	Severe Distress	Moderate Distress	Positive Well-being
19 - 22	14.7	23.52	61.76
23 - 26	12.24	2.04	85.71
27 - 33	6.25	6.25	87.50

from the table, severe distress levels of psychological well-being decreased as age increased, with 14.7% among 19-22 year olds, 12.24% among 23-26 year olds, and only 6.25% among 27-33 year olds. Thus, the hypothesis was accepted.

Additional Findings

In order to address a competing hypothesis raised by clinicians as to whether there is a difference in maternal-fetal attachment between mothers who had no previous pregnancy and those who had one or more previous pregnancies, correlations between the major independent and dependent variables were performed. For those mothers who had no previous pregnancies (N = 101), the correlations between maternal-fetal attachment scores and mother-daughter and husband-wife attachment scores, total functional support, psychological well-being, and socioeconomic status ranged from -.0038 to .1170. The correlations for the sample (N = 115), including 14 subjects who had previous pregnancies, ranged from -.05 to .13. These correlations are similar to the other sample (N = 101) in that the correlations are near zero and none of them is statistically significant. Thus,, the findings show that there is no difference in maternal-fetal attachment for the study sample on the basis of previous pregnancies. This finding is in agreement with Cranley's study (1981a) demonstrating no difference in maternal-fetal attachment on the basis of number of pregnancies. Testing the competing hypothesis would require a larger sample size of mothers who had previous pregnancies, which is beyond the scope of this study.

Summary

Table 29 depicts a summary of study questions, hypotheses, and findings. Controlling for all demographic and descriptive variables, husband-wife attachment and psychological well-being showed highly significant relationships (Beta = .43, p = .000), as was the case when the variables were not controlled for. Maternal-fetal attachment and social support did not demonstrate significant relationships with psychological well-being with all the demographic and descriptive variables controlled for in the analysis. Mother-daughter attachment and husband-wife attachment demonstrated positive correlations at a significant level (p .01). Mother-daughter attachment was also a significant predictor of psychological well-being (Beta = .16, p = .04). Thirty-six percent of the total variability in psychological well-being was explained by husband-wife and mother-daughter attachments and the age of the subject (R^2 = .36, Adj. R^2 = .33). Length of pregnancy in weeks and total loss of support were not significant, but were inversely related to psychological well-being (p = .06 and p = .08, respectively). Maternal-fetal attachment was not significantly related to any variable, either adjusting for or without adjusting for other variables.

TABLE 29

Study Questions, Hypotheses, and Findings

Question	Hypotheses	Supported
1. Mother-daughter and husband-wife attachment as predictors of maternal-fetal attachment	1. ↑mother-daughter attachment ⟶ ↑maternal-fetal attachment	No
	2. ↑husband-wife attachment ⟶ ↑maternal-fetal attachment	
	3. ↑mother-daughter and ↑husband-wife attachment ⟶ ↑maternal-fetal attachment	
2. Relationship between mother-daughter and husband-wife attachment	4. ↑mother-daughter attachment ⟶ ↑husband-wife attachment	No
3. Attachment relationships and social support	5. ↑mother-daughter, ↑husband-wife, and ↑maternal-fetal attachment ⟶ ↑social support	No
4. Social support and psychological well-being	6. ↑social support ⟶ ↑psychological well-being	Yes
5. Attachment relationships and psychological well-being	7. ↑mother-daughter, ↑husband-wife, and ↑maternal-fetal attachment ⟶ ↑psychological well-being	Yes*
6. Variance in psychological well-being accounted for by social support and psychological well-being	8. greater variance accounted for by attachment variables	Yes
7. Relationship between age and psychological well-being	9. ↑age ⟶ ↑psychological well-being	Yes

* Maternal-fetal attachment not significant

CHAPTER V

DISCUSSION

This chapter discusses the study findings in relation to study questions and purposes, within the context of attachment theory of Bowlby (1979) and developmental theory of Erikson (1963, 1968). The first part of the chapter presents an overview of study purposes, questions, and hypotheses. In the next section, the relevant relationships observed between independent and dependent variables are discussed. The last part of the chapter addresses study limitations, implications of the study findings for clinical research, and recommendations for future research.

Through propositions stemming from attachment and developmental theories, pregnancy was viewed as a stage of maturational crisis necessitating physiological and emotional changes during which intimate attachment relationships and social support help maintain the psychological well-being of the pregnant woman. The purpose of the study was to generate knowledge in relation to intimate attachment relationships of the pregnant woman with her mother, husband, and fetus and their relationship to her psychological well-being. The study also examined the relationships of demographic and descriptive variables, social support, and attachment variables with psychological well-being

during pregnancy. Table 29 in Chapter IV depicts a summary of the study hypotheses and results.

Intergenerational Attachment and Psychological Well-being

The study addressed the unique question of the relationship of intergenerational attachment and psychological well-being of women during pregnancy, a dynamic developmental process during adulthood. Both the developmental and attachment theorists have stressed the interrelationships of intergenerational attachment and psychological well-being. Bowlby spoke of the early and original attachment with one's mother as the prototype for all other attachment relationships over the life span. Erikson stressed the importance of trust relationships established during early infancy and their impact on the formation of intimacy with one's partner later during early adulthood. Laing (1971) spoke of individuals in one generation projecting onto individuals in the next generation that which was once projected onto them. The theorists from attachment and developmental frameworks also stressed the significance of early attachment relationships in an individual's life and his/her emotional well-being later in life. Attachment theory supports the idea that many forms of psychiatric disturbances can be attributed either to deviations in the development of attachment or to failure of its development (Bowlby, 1979). In the study of attachment relationships and psychological well-being during pregnancy, the high level of anxiety experienced by pregnant women during the third trimester of pregnancy, documented by Bibring (1959),

Colman and Colman (1973), Deutsch (1945), Leifer (1977), and Rubin (1975), needs to be considered. The existence of emotional disequilibrium during pregnancy and factors associated with it were identified by Tilden (1981). Therefore,, there is a need to systematically explore the level of psychological well-being of pregnant women and the interrelationships between psychological well-being and the intergenerational attachment relationships of the pregnant woman.

Maternal-Fetal Attachment, Other Attachment Variables, Social Support, and Psychological Well-being

As may be seen from Table 29, the first three hypotheses tested the relationships between husband-wife, mother-daughter, and maternal- fetal attachment. These hypotheses were rejected as there were no significant relationships between maternal-fetal attachment and mother-daughter attachment or husband-wife attachment or any other variable examined in the study, except for a weak correlation with socioeconomic status and the number of weeks of pregnancy.

There are several potential explanations for the lack of significant relationships between maternal-fetal attachment and other variables as observed in the study. First, it may be explained in terms of conceptual limitations relating to the construct, that the construct is inadequately developed and therefore the model is not appropriate to test the relationships between maternal-fetal attachment and other variables as hypothesized. A second possible explanation is that the instrument--Maternal-Fetal Attachment Scale--did not adequately measure the construct. A third possibility is that maternal-fetal attachment is a construct whose manifestations differ from other attachment

relationships developed in later mother-child situations. Perhaps these constructs--maternal-fetal attachment and mother-child attachment later in life--differ so substantially that they must be tested and analyzed differently. In the following section, an attempt will be made to discuss these points in greater detail.

The first important question that needs consideration is whether there is in fact a lack of association between mother-daughter, husband-wife, and maternal-fetal attachment. Also, is it likely that there is a lack of association between maternal-fetal attachment and other variables, particularly social support and psychological well-being of the woman during pregnancy? The construct, maternal-fetal attachment, at present is inadequately developed in spite of a number of researchers' and authors' attempts during the past decade to identify, define, and develop the construct in order to facilitate the study of early beginnings of attachment relationships.

Several approaches have been adopted by different researchers to describe what they thought of as manifestions of maternal-fetal attachment. Deutsch (1945) described the process as a progression of incorporation of the fetus, investing with narcissistic love, and gradually differentiating the fetus from herself and increasingly appreciating a separate individual. Cranley (1981a) discussed attachment as a result of dynamic psychological as well as physiological events taking place during pregnancy. Tanner (1969) described the woman's first relationship with the unborn as narcissistic which later changes to the notion of the fetus as an individual, separate and different from herself. A form of narcissistic love (attachment) is very different from attachment between two individuals who have their

own identities but allow for space for another in their life without being completely possessive. Adult-adult attachment is also interdependent, but it is different from the narcissistic type of attachment most represented in maternal-fetal attachment.

Since the phenomenon of a woman's beginning attachment to her unborn is not visible and concrete, and therefore cannot be observed clinically, it poses difficulty in establishing clarity in conceptualization and measurement of the construct. Perhaps construction of items that clearly relate to the woman's concern and commitment toward the fetus' well-being, which are different from those relating to fantasy and interaction, might better tap the dimension of developing closeness between the pregnant woman and the unborn. The fact that the fetus is within the woman as part of her makes it difficult to conceptualize the relationship as attachment or intimacy. Descriptive studies with different samples at different stages of pregnancy might help to identify possibilities and problems in this area. The scale used in this study measures a hierarchy of behaviors, with some types of behaviors being more prevalent than others in the third trimester. However, it is yet to be determined what exactly these behaviors really do signify. Thus,, as the construct is not clearly delineated, it is difficult to determine whether there is a real lack of association between maternal-fetal attachment and the other variables in the study.

Secondly, does the instrument--Maternal-Fetal Attachment Scale--truly measure the construct it proposes to measure? While this question deserves careful consideration, it needs also to be recognized that there are no accurate indicators of maternal-fetal attachment

identified at present for purposes of comparison. The basis for the definition of maternal-fetal attachment as employed in this study was the literature about the nature of mothering and the tasks of pregnancy (Cranley, 1981a). Statements some pregnant women made about themselves and their fetuses served as the source of items for the Maternal-Fetal Attachment Scale. An important question that may be raised about the scale is whether the items comprising statements made by women during pregnancy describing their fantasies and interactions with the fetus are a real reflection of attachment relationship between the women and their unborn. In responding to the items on the scale, is there a likelihood for the woman to relate to her fantasy of a developing baby in general rather than to her own individual baby? The findings of Cranley's study to establish external criterion validity for the scale, comparing the woman's attachment with the fetus to her attachment to the newborn on the third day postpartum, demonstrated no significant relationship between the two. Therefore,, another question to be addressed in relation to the scale is the lack of external criterion validity. This also needs to be considered carefully in order to interpret accurately the findings in relation to maternal-fetal attachment.

Finally, is there such a construct as maternal-fetal attachment? If so, are all the verbal items representing fantasy and interaction with the fetus fully representative of such an attachment? Are these verbal items adequate for all categories of people with different levels of verbal abilities and styles? Also, the items on the Maternal-Fetal Attachment Scale seem to represent the thinking processes of middle-class American culture, women who attend prenatal classes, and experts dealing with similar populations. What about women who are not very

verbal, who may spend time knitting for the baby rather than talking about it? Individual differences in women's responses to pregnancy and the fetus need to be considered in interpreting responses to the items on the scale. In this context, the finding of the weak association between socioeconomic status and maternal-fetal attachment, that has not been reported by others, raises the question as to whether self-perception of attachment with the developing fetus is a function of educational and occupational status of the pregnant woman or the nuclear family.

The finding demonstrating an association between maternal-fetal attachment scores and number of weeks pregnant is in agreement with that of Cranley (1981a), who reported positive relationships between maternal-fetal attachment and number of weeks pregnant, and with earlier observations by Caplan (1959) and Rubin (1975), who reported increasing attachment after fetal movement.

Mother-Daughter Attachment and Husband-Wife Attachment

The significant relationship observed between mother-daughter attachment and husband-wife attachment (Hypothesis 4) supports the theoretical stance of Bowlby (1979) and Erikson (1963, 1968) that the original and early attachment is related to later establishment of an intimate and close attachment relationship with the husband in the individual's life span. All the subjects in the study had been brought up by their mothers, who were still living, and had lived with their mothers until at least 16 years of age. Also, the fact that the subjects were married and living with their husbands renders the findings generalizable in terms of the observed impact of the two

attachment relationships. There is additional significance for the finding as there has not been any research examining both these attachment relationships during pregnancy, controlling for the above factors (being brought up by mothers and living with husbands) and their relationship to emotional well-being of women during pregnancy.

The process of renegotiation and reconciliation that takes place between the pregnant daughter and her mother (Ballou, 1978a), positively influenced by husband-wife attachment, helps to strengthen mother-daughter attachment during pregnancy, particularly by the third trimester. If this process does not take place during pregnancy, further passage of time does not change the mother-daughter attachment. The assumption in this study was that by measuring the mother-daughter attachment during the last trimester, the earlier conflicts between mother and daughter have been resolved by most women. If mother-daughter attachment was measured earlier during pregnancy, conflicts could be expected, and these could alter the effects. Longitudinal studies are needed to demonstrate the changes that take place in mother-daughter attachment during pregnancy.

Mother-Daughter Attachment and Psychological Well-being

The finding that mother-daughter attachment showed a significant relationship with psychological well-being of pregnant women (Hypothesis 7) supports the findings of Rubin (1975) and Lederman (1984b) with regard to the importance of positive mother-daughter relationships during pregnancy. The external factors such as presence of mother with the pregnant daughter during and after delivery and availability of mother after discharge for assistance at home were not

significantly related to psychological well-being of the pregnant woman. The positive attachment between mother and daughter remained a significant predictor of psychological well-being. This finding is also supported by Rubin (1975), who discussed the importance of contact between the pregnant woman and her mother in order to promote well-being of the daughter during pregnancy. Lederman (1984b) also discussed the importance of the reminiscing aspect of mother-daughter relationships where the mother relived her past experiences during pregnancy, which built confidence for the daughter during pregnancy. This finding has implications for the care of pregnant women during pregnancy in nuclear family settings, for those who belong to different cultural backgrounds with differing views about mother-daughter attachment based on cultural differences, for those among new immigrants who are separated from their mothers by long distances, and also for women performing in different career roles that often separate them from their mothers through distance. It is not clear at present, however, whether positive attachment between mother and pregnant daughter will be influenced by separation through distance and also whether physical separation will have any influence on the psychological well-being of the pregnant woman.

Husband-Wife Attachment and Psychological Well-being

Findings of this study show that husband-wife attachment is a highly significant predictor of the psychological well-being of pregnant women and thus confirm Hypothesis 7. Although theoretically and clinically the importance of husband-wife attachment is given consideration, empirical evidence supporting the significance of it in

the psychological well-being of women during pregnancy is an important and timely finding in the health-care arena. The findings also show that the external factors relating to relationship with husband, such as presence with wife during delivery or after delivery and husband's availability at home to help after discharge, do not make any difference in terms of the psychological well-being of pregnant women. On the other hand, positive attachment relationships as measured in the study made a significant difference in the level of psychological well-being of the women. The findings supporting the significance of husband-wife attachment on the psychological well-being of pregnant women enhance findings of other researchers in nursing as well as other disciplines.

There is already an increased awareness of the importance of husband-wife relationships during different stages of pregnancy and childbirth and the quality of childbearing outcomes (Arizmendi & Affonso, 1984; Mercer, 1981). For example, the literature on psychosocial precursors of postpartum depression has demonstrated the significant correlation between postpartum depression and a deterioration or termination of the marital relationship or the perception by the woman of inadequate emotional support from her spouse (Braverman & Roux, 1978; Kumar & Robson, 1978; O'Hara, Rehm, & Campbell, 1983). Scarf (1980), in advancing an interpersonal etiology of postpartum depression, suggested that women invest themselves powerfully in emotional ties with others and, because their lives are bound by a variety of complicated intimate relationships, are more vulnerable to experiencing loss, a sense of not being loved, or not feeling important when their interpersonal relationships are disrupted. Searf identified marriage, childbearing, and parenting as examples of life events that

arouse intense affectional attachments and powerful emotional relationships and expose a woman to greater risk to depression when emotional needs are unmet or when the woman feels she is not being loved. Braverman and colleagues (1978), in screening women for risk of postpartum depression, concluded that a disturbance in a woman's marital relationship and her feeling of not being loved were serious predictors of postpartum depression, regardless of the causes for such feelings. Affonso (1982) found an association between a woman's negative judgment of her interaction with the baby's father and depression symptoms at the third and eighth weeks postpartum. All these findings show the importance of husband-wife attachment during the childbearing period.

Barnard (1981) found in a nursing child assessment study that the mother's prenatal perception of the father's involvement in the pregnancy was positively correlated with her involvement and responsiveness to the child, as measured by observation during the first four years of life. In addition, the mother's perception of the father's involvement was correlated with the child's IQ at 4 years of age, and more strongly in low education families than in high education families. The questions they asked the mothers were: How much emotional support did your husband give you during pregnancy? How much physical support did he give during pregnancy? Was he pleased about the pregnancy when you first found out you were pregnant and also later in pregnancy? According to Barnard, these sets of responses were tapping into information about the mother's perception of attachment of the mother and father. Thus, Barnard's study stresses the importance of husband-wife attachment in the social and intellectual development of the child. Wiggins (1983) found that high-risk pregnant women who

indicated their husbands as confidants had low anxiety, depression, and crisis scores. Wiggins' findings further reinforce the significant role husband-wife attachment plays in the psychological well-being of pregnant women. To summarize, improved methodology in assessing psychological well-being of women during pregnancy and more clinical and research attention given to provide comparative data in the area will assist in identifying mental health problems during pregnancy.

Social Support, Attachment, and Psychological Well-being

Although social support variables measured in this study did not show significant relationships as predictors of psychological well-being (Hypotheses 4 and 6), there was pairwise relationship between emotional support and psychological well-being. Emotional support was also positively correlated with socioeconomic status and age of the wife. This may be explained by the fact that the longer-married women were probably older and were more likely to be better established financially, which resulted in better socioeconomic status as well as greater sources of emotional support. These mothers might also enjoy greater security economically and emotionally, which might also help explain the positive correlation between emotional support and psychological well-being.

There was no significant relationship observed between social support variables and maternal-fetal attachment for the study sample. Cranley (1981a) found a strong positive relationship ($r = .51$, $p = .002$) between social support and maternal-fetal attachment. As social support was measured differently in Cranley's study, it will be difficult to compare the findings. Social support was measured by Cranley through a

series of open-ended, forced-response questions which elicited information about the social support network available to the subject. The current study attempted to measure the emotional support available to the subject and not just the available network.

The subjects in the current study were free from any known medical condition, were married and living with their husbands, and their mothers were still living. Perhaps this contributed to the fact that the sample scored higher in terms of total functional support offered by spouse, mother, and relatives, 71.78 parts of the total functional support as compared with 43.5 parts for Norbeck and colleagues' sample. This finding also supports Rubin's (1975) finding that pregnant women tend to withdraw during the third trimester and seek company of other women who are pregnant. Also, they seek help and support from the immediate family more than any other source during pregnancy. The proportion of support from friends category for the study sample was lower than that of a general sample of Norbeck and colleagues. In terms of these findings, it could be said that the predictive information that was present in social support for psychological well-being, as shown by the positive pairwise correlations, was already contained in the information in husband-wife and mother-daughter attachment. The pairwise relationship was no longer significant after adjusting for the two attachment relationships.

On the basis of findings from other studies, a main effect for social support may not be expected in the study (Norbeck & Tilden, 1983; Nuckolls et al., 1972). Although the main effects were not significant, in the Norbeck and Tilden study the interaction of life stress during pregnancy and strength of support was a significant predictor of each

type of complication (9.1% infant complications, 6% labor complications, 6.2% gestation complications). It may also be noted that the effects of social support are perhaps more observable with the presence of life stress for the individuals, as found in other studies (Nuckolls et al., 1972; Tilden, 1983; Wiggins, 1983). Wiggins' and Nuckolls' samples included high-risk adolescents and were not controlled for preexisting medical conditions. Wiggins' total study sample was comprised of high-risk pregnant women.

Tilden's (1983) study revealed that social support and life stress exerted separate and main effect on emotional disequilibrium of pregnant women. The effect of social support on emotional disequilibrium in Tilden's sample was significant, but the magnitude was small (3.11%), much smaller than the effects of social support in reducing pregnancy complications found by Nuckolls and colleagues (1972). As discussed earlier in Chapter II, Nuckolls' results should be viewed with caution as the social support construct for the study included ego strength, self-esteem, attitudes toward pregnancy, and emotional support, thus confounding the variable. Therefore, the association found between social support and outcome variables in these studies might have been on account of the presence of life stress for them. Kaplan, Cassel, and Gore (1977) proposed that social support is likely to be protective only in the presence of stressful circumstances and suggested that studies of social support need to be carried out in the presence of stressors. In addition, in all three study samples cited, the tools for measuring social support were different, which might also explain the differences in findings.

The negative findings in this study in relation to social support variables should be considered in the light of the lack of agreement in conceptualization, definition, and measurement of the variables. The instrument used for measuring the variable in the study has established validity and reliability information. Yet, the need for further refinement of the tool as well as individual variations in the need for and perception of support on the basis of specific types of situations need to be considered in order to interpret the results fully. Dean and Lin (1977) proposed a shift from the case-control approach to cohort studies, studies with normal populations, and longitudinal studies in a path-analytic model to find cause-effect relationships that will show that social support may buffer different categories of life events differently and only at certain times.

The study findings in general support the relationships between social support, attachment, and well-being, as proposed by Kahn (1979). According to the study data, social support and attachment are not one and the same construct. There was a small percentage (4%) of shared variance between mother-daughter attachment and emotional support when the attachment variable was held constant in the regression equation. The emotional support was no more significant when social support was adjusted for attachment variables remained significant. Lowenthal and Haven (1968) reported that maintenance of closeness with another is the center of existence up to the very end of life. The major finding of the study, that attachment relationships with husband and mother were the significant predictors of psychological well-being, supports this view.

Age and Psychological Well-being

Significant effects of age on psychological well-being during pregnancy point to the necessity of controlling for the variable in research related to psychological well-being and pregnancy. In this study, age was controlled through sampling procedures to eliminate high-risk adolescents and women over 35. However, a significant effect was still found for age in relationship with the psychological well-being of pregnant women. Age was found to have significant effects on pregnancy outcomes by different researchers. Norbeck & Tilden (1983), in examining the relationship between psychological and social factors in complications of pregnancy, found that age had significant effects on labor and delivery complications. Both the very young and older mothers were reported to experience increased health problems, compared to women in their twenties, as reflected in national morbidity and mortality rates (Mercer, 1981). As reported by Wiggins (1983), age influenced maternal-fetal attachment. As age increased, the maternal-fetal attachment decreased in high-risk mothers (Wiggins, 1983). Based on the findings of the study, psychological well-being would be expected to increase with age of the pregnant woman. This trend may not be true with physical outcome, which is found to decrease with age (Naeye, 1983). The study sample consisted of women who were all low-risk in terms of medical conditions. In the current study, age is also positively correlated with emotional support and socioeconomic status of the pregnant woman.

Limitations of the Study

The selection of design for the study was considered appropriate, yet several limitations need consideration relating to the study design. The first limitation was that the study used a structured questionnaire to gather data from a self-selected sample. Since data were gathered at one point in time, the relationship must be considered in terms of the specific time frame of the study. Subsequent data gathered during a different time frame could generate different data and relationships.

The second limitation was in the use of a structured questionnaire. The investigator must assume that the respondent understood the intent of the question and responded in an open and honest manner. In this study, as the researcher was available to the subject for verification and clarification during the process of completing the questionnaire, the possible effects of the limitation were kept to a minimum.

A third limitation of the design was the voluntary nature of participation by subjects, which could introduce bias. The lack of information about nonrespondents could make a difference in terms of generalizability to the target population. Again, in this study very few who were eligible to participate declined to participate in the study. Therefore,, in this study, lack of information about nonrespondents was not thought to pose a serious problem in terms of generalizability. For those who refused to participate as well as those who participated, detailed records were not kept by the prenatal classes. Therefore, demographic data were not available on nonrespondents for comparison purposes.

Sociodemographic data could also be used to describe and compare respondents in as precise terms as possible. Therefore,, another way of assessing the nature of the sample was through a comparison of sample norms of those who responded to the norms of other known populations. For this study, sample data were compared with data on psychological well-being obtained from a national survey in the United States and also with data from another research study conducted in California, U.S.A. Furthermore, in an effort to assess the nature of the sample, comparisons were also made between sample norms on attachment variables and social support with other known population norms from previous studies. It is important to keep the scope of generalizability for the findings of the study within study limitations. For example, the study sample included young adult Caucasian women who were pregnant. Even if the results were replicated with other similar samples of women, findings would not be presumed to apply to pregnant women in other cultures. Future research on relationships between the study variables in other cultures would provide an important test of the study's generalizability. Also, the subjects in the study were married and living with their husbands. Therefore, the findings may not apply to unmarried women. Thus, generalizations from the study sample to other populations did not exceed the limitations of the study.

Theoretical and Methodological Implications of the Study

This study was conceived with an attachment and developmental theoretical base (Bowlby, 1979) which stressed the importance of the earliest relationship with one's own mother and its impact on

psychological well-being for women during pregnancy. The earliest attachment with one's own mother as a prototype for later attachment relationship with the husband was also explored, based on Bowlby's theory. Erikson's (1963) theory of psychological development added another dimension to the framework in exploring the earliest and original mother-daughter relationship as it evolves through the life span, shaping the individual's ability to develop an intimate attachment relationship with the husband. (Social and cultural influences upon development through socialization were taken into account.) Thus, the conceptual framework for this study, from a developmental and attachment stand point, specifically attempted to tie the developmental stages of basic trust in childhood and intimacy in adulthood in terms of attachment relationships and the beginning of another and new attachment in the individual with yet another generation. The chief practical application is the intergenerational perspective, although further development through research will provide a framework that will help to better understand attachment relationships during pregnancy. The significant relationships observed between attachment that develops between two generations, namely the mother and the pregnant daughter, and husband-wife attachment supports the interrelatedness of intergenerational attachments. Findings of the study are in conceptual agreement with other earlier studies (Ballou, 1978a; Benedek, 1956; Caplan, 1961; Deutsch, 1945; Lederman, 1979; Mercer, 1981; Rubin, 1975). The other dimension of the intergenerational aspect needs to be explored further to see whether there is any relationship between mother-daughter attachment, the new and developing maternal-fetal attachment, and husband-wife attachment. Perhaps another approach to examine the

intergenerational aspect would be to examine mother-daughter attachment, husband-wife attachment, and mother-infant attachment in order to assess what the relationships are among these three generational attachments, as there was no conceptual agreement between the study findings and other studies (Cranley, 1981a). It is also an important area to explore the differences, if any, in attachment relationships for those pregnant women who are married and those who have partners but are not married.

The importance of social support during pregnancy needs further investigation. The relationship between attachment and social support needs further research for clarification. The function and sources of social support during adulthood need to be developed further. The finding that intimate attachment relationships, compared to other social support sources, are significant predictors of psychological well-being of women during pregnancy needs to be replicated to see whether the findings of the study hold true in other situations. The relationship of social support to well-being will need further investigation. In this study, the predictive information that was present in social support for psychological well-being, as shown by the pairwise correlations, was already contained in the information in husband-wife and mother-daughter attachment. There is conceptual agreement between the study findings and other studies in that no other study found a direct relationship between social support and well-being. The effect noticed was only through interaction with other variables such as life stress (Norbeck & Tilden, 1983; Nuckolls et al., 1972).

Kahn and Antonucci (1980) described social support using the metaphor of convoy consisting of three concentric circles, an inner, middle, and outer circle representing individuals who are "closest",

"close", and "not that close". The closest attached individuals of the inner circle remain "stable over time and are no longer role-dependent" (p. 273). Kahn and Antonucci used the instrument with men and women in later life, and they pointed out the importance of attachment to be traced throughout the life span. Lowenthal and Haven (1968) pointed out the importance of a confidant in maintaining well-being. Berkman and Syme (1979) showed the importance of a marital partner as confidant on the well-being of the individual.

Thus, the theoretical framework selected for the study of life-span attachment from the perspectives of developmental, attachment, and social support theorists has been very beneficial in explaining observed relationships between attachment, social support, and psychological well-being. Further research using the framework is considered valuable and productive. Lederman (1984a) pointed out that research findings in general, supporting the unique and developmental nature of pregnancy and the multiple factors influencing development, stress the need for multivariate designs and serial data collection throughout the reproductive or maternity cycle.

Recommendations for Future Research

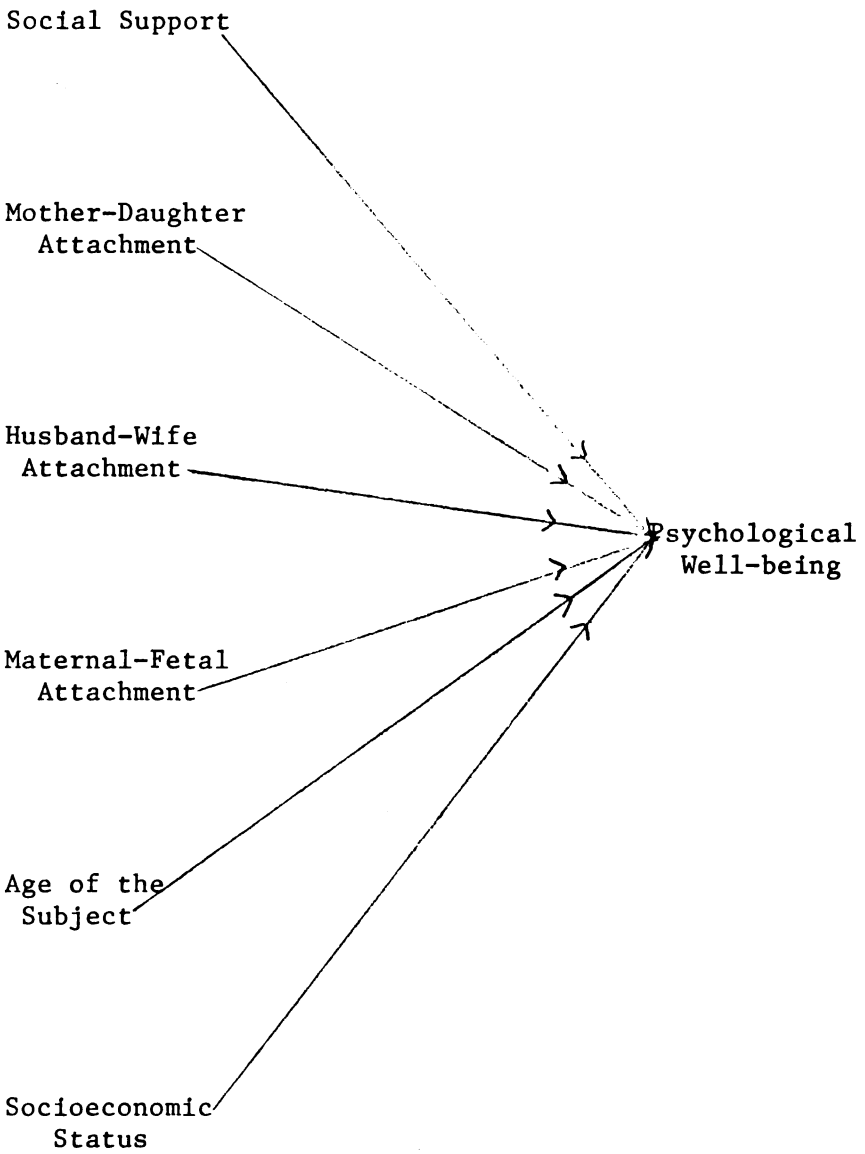
Recommendations for future research evolve from the literature review, the study's limitations, and implications of the findings. The primary implication of this study falls under the need for further research to verify, clarify, and develop the trends noted here. Research is necessary to further test the theoretical framework selected in testing attachment relationships and also to identify behavioral

manifestations as well as the impact of these attachment relationships over the life span, particularly during adulthood.

The relationships between study variables as proposed for the study are represented in Figure 4. Arrows a to f represent relationships between variables as predictors of psychological well-being. Arrows g to o represent correlations between variables.

The findings of the study demonstrated significant predictors of psychological well-being represented by arrows a, b, and c and correlations between variables as represented by arrows d to g, as shown in Figure 5.

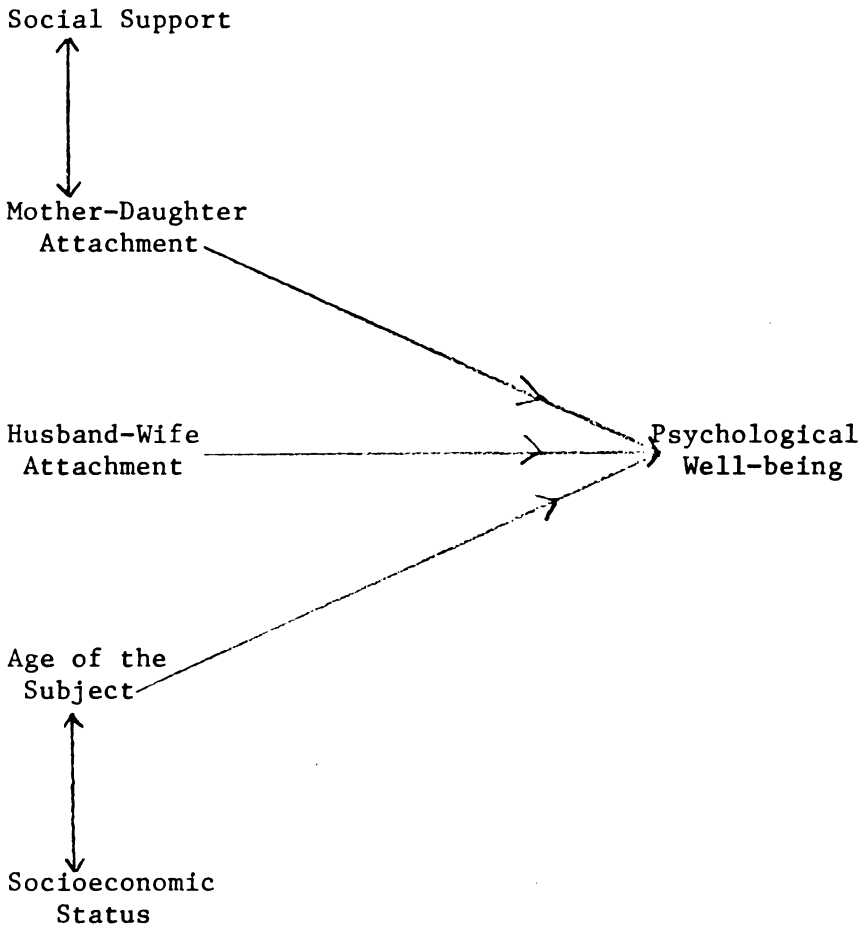
Using the findings of the study, as represented in Figure 4, and incorporating Norbeck and Tilden's (1983) findings that life stress interacting with social support is a significant predictor of pregnancy outcomes as well as level of emotional disequilibrium, a path model for predicting psychological well-being from six independent variables is proposed (Figure 6). If the model is correct, then this will be the best estimate of paths representing the relationships. Gathering data at one point in time will identify the paths for these variables. For some variables it will be clear that the path could go in only one direction. For example, it is clear for the path between age and psychological well-being that psychological well-being could not influence age. For other variables, the direction of relationship is not logically clear. If the direction of relationships is to be established, then data should be collected at two points in time during pregnancy, which will help in evaluating the direction of relationship. The theory specified by the path is that psychological well-being is influenced by what is measured in terms of mother-daughter attachment,



Proposed Model for the Study

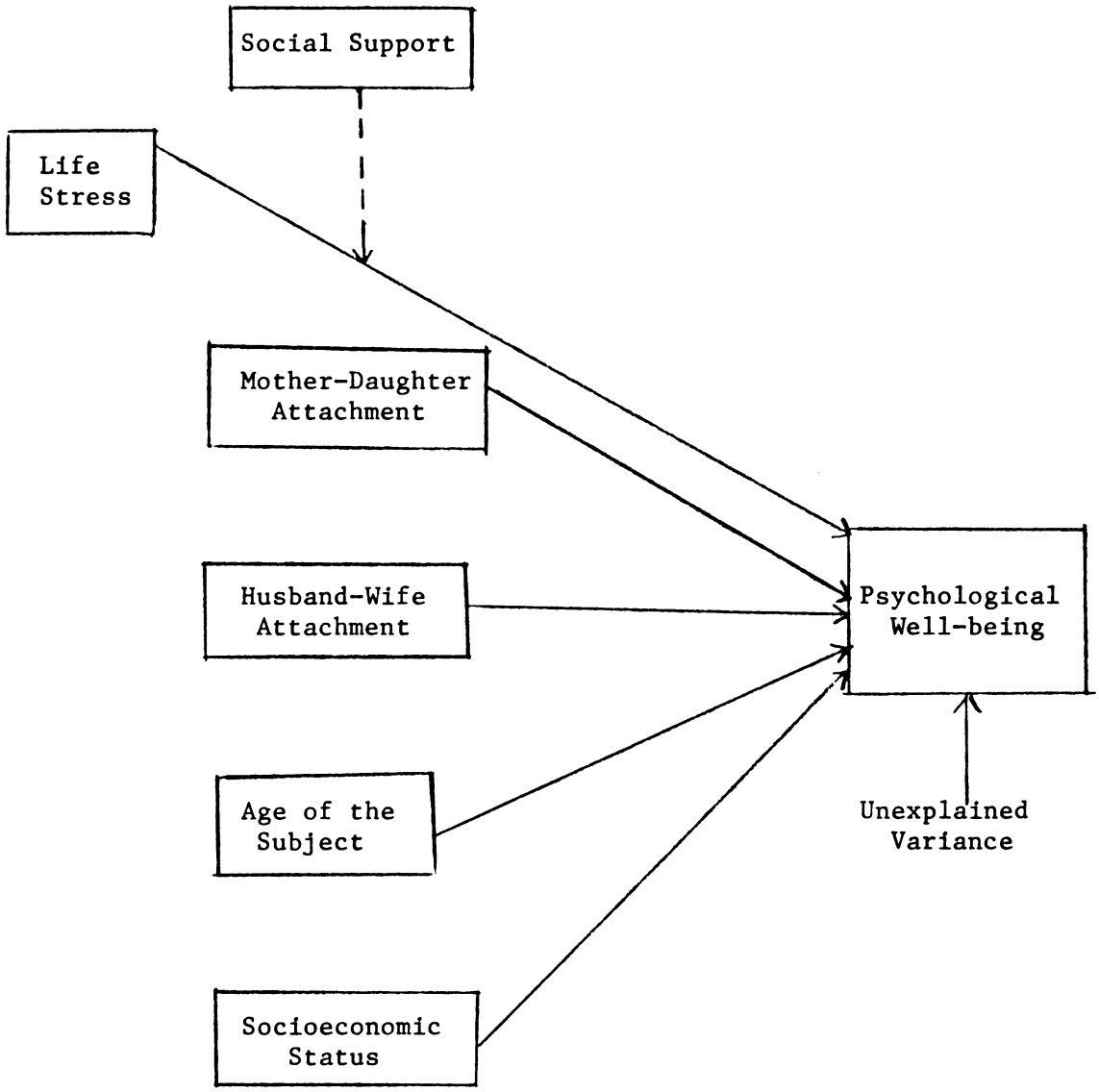
FIGURE 4

Predictors of Psychological Well-being



Findings of the Study

FIGURE 5



Path Model for Predicting Psychological Well-being from Six Independent Variables

Revised Model for Future Research

FIGURE 6

husband-wife attachment, and age of the pregnant woman. A unit change in mother-daughter and husband-wife attachment is associated with some change in psychological well-being. While this is not strictly a cause and effect statement, it represents what is referred to as a weak causal ordering. This is not to say that mother-daughter and husband-wife attachment cause the psychological well-being but that the two attachment relationships have direct impact upon the psychological well-being. In this sense, a pregnant woman who has a positive attachment relationship early in life is expected to have positive psychological well-being in comparison with those who have poor relationships initially.

Drawing path diagrams using the best available background information, the most trusted theories, and making plausible guesses as to path coefficients can be of fundamental help in the theory-relevant interpretation of correlational data (Cook & Campbell, 1979, p. 301). Two major functions of model building and path analysis are theory clarification and causality (Asher, 1976). Path analysis is basically concerned with estimating the magnitude of the linkages between variables and using these estimates to provide information about the underlying causal processes. Therefore, path analysis is chosen for further research study in identifying interrelationships between attachment relationships and age and their effect on the psychological well-being of pregnant women.

One of the main advantages of path analysis is that it enables one to measure the direct and indirect effects that one variable has upon another. Path analysis is superior to ordinary regression analysis as it allows one to move beyond the estimation of direct effects, the basic

output of regression. Rather, path analysis allows one to examine the causal processes underlying the observed relationships and to estimate the relative importance of alternative paths of influence. The model testing permitted by path analysis further encourages a more explicitly causal approach in the search for explanations of the phenomena under investigation (Asher, 1976).

The literature review revealed the need for an increased number of tools to measure attachment relationships. Instruments need further refinement. The important role of husband-wife attachment, as identified in the findings, need to be investigated further in relation to psychological well-being during pregnancy and other outcomes of childbearing. There is an indication in the literature that postpartum depression may be a continuation of psychological distress during pregnancy (Brew, 1950). The relationship between attachment relationships during pregnancy and postpartum depression may be a useful approach to prevent depression and promote mental health during pregnancy. The important role of early attachment relationships in life and current attachment relationships as predictors of well-being during pregnancy need to be considered in preparing men and women for parenthood.

The study of attachment poses a challenge in identifying behaviors as indicators of the construct for developing appropriate research design for further theory development. A construct has been defined in most situations with the investigator attributing meaning to the behaviors observed as attachment. Operationalization of this construct, which is abstract in nature, is difficult.

At present, in spite of all attempts by researchers from different disciplines to define and measure maternal-fetal attachment, the concept is unclear. If maternal-fetal attachment is defined and measured in terms of interaction between the mother and fetus, there is no accurate method of measuring the interaction between the two except through the self-expressed fantasies and feelings of the mother in relation to her fetus. This in turn is difficult for different individuals based on personal background, cultural beliefs, and social setting. For example, some individuals are more verbal compared with those who may be quieter. The fetus is capable of responding to physiological and emotional stimuli from the mother, but how much of this is an indication of affection between the mother and fetus? How can this be measured in terms of degrees of attachment? Are the variations in feelings relating to the fetus due to hormonal, socioeconomic, historical, biological, or psychological factors or a combination of all these? These questions need to be answered through further research.

One purpose of nursing research is to raise questions that will add to the knowledge base that we can use to guide and assist in our interventions. As nursing science is in the beginning stages, descriptive studies such as this can help identify relationships between behaviors, individuals, and events. One main advantage of this approach is to identify natural relationships that exist; a disadvantage is not allowing us to come to conclusions about cause and effect of relationships. It will be valuable to replicate the study with variables identified as significant and with more than a one-time observation, using the path analysis model. Replication of the study using similar populations with a more refined approach and replication

of the study using other cultures will be valuable in determining the relationships between the variables and variations in different populations. The development of attachment is embedded in the cultural background of the individual, and therefore human responses to situations involving attachment relationships are culture-specific.

Summary

The nature of mother-child relationship has been of central concern to psychoanalysts as well as attachment and developmental theorists and researchers in the health professions. The selection of mother-daughter relationship as a variable in this study was deliberate but not intended to ignore other significant relationships in the woman's life. It was chosen as the original and earliest attachment and a prototype of all other attachment relationships in human life. Therefore, it is a key factor in determining the nature of attachment relationships the individual forms with others, representing different generations. The findings of the study supported the important role the mother-daughter attachment plays in the psychological well-being of the pregnant woman. It is also of interest to note that mother-daughter attachment and husband-wife attachment were significantly related to each other, which again supports the prediction of the study in this area. Out of the two intimate attachment relationships, the husband-wife attachment was the most intense and was a highly significant predictor of psychological well-being. It is also an important observation of the study that global social support is not significant in predicting psychological

well-being of the pregnant woman, but the primary unique attachment relationships are.

These results emphasize the importance of the concept of attachment with a particular other in life and the impact of it on the mental health of the individual during an important stage of transition. Thus, this study scrutinized an aspect of the nature of human attachment relationship during a dynamic developmental process. The consensus of the literature shows that mother love gives something indispensable to the growing infant (Bowlby, 1979).

If mother-daughter attachment and husband-wife attachment are significant predictors of psychological well-being of the individual during pregnancy, researchers from nursing as well as other related disciplines need to focus more on relevant features of these concepts. What are the implications of these findings to disturbed family relationships which come from emotional problems of the parents, derived from their own unhappy childhoods (Bowlby, 1979)? The findings of the study are in the direction of support for the key point of Bowlby's (1979) thesis that

> There is a strong causal relationship between an individual's experiences with his parents and his later capacity to make affectional bonds . . . certain common variations in that capacity, manifesting themselves in marital problems and trouble with children as well as in neurotic symptoms and personality disorders, can be attributed to certain common variations in the ways that parents perform their roles. (p. 135).

The relationships established by the study may not be causal, as the study was designed to be exploratory. Based on the findings of this study, further research is recommended using causal modeling in order to investigate causal relationships among the variables identified as significant.

CHAPTER VI

SUMMARY AND CONCLUSIONS

The purpose of this study was to explore the nature of human attachment from a life-span perspective, with particular emphasis upon the phenomena of attachment relationships and the social support of women during pregnancy and their influence on the psychological well-being of these women.

Through an examination of propositions stemming from attachment (Bowlby, 1979) and developmental theories (Erikson, 1963, 1968), intergenerational attachment was perceived as attachment relationships of the individual developing over a life span, the component parts being mother-daughter, husband-wife, and maternal-fetal attachment. Thus the conceptual framework for this study was both attachmental and developmental, specifically attempting to tie the stages of basic trust and intimacy based on Erikson's theory and the phenomena of the earliest mother-infant attachment growing and evolving continuously through the life-span, influencing other intimate attachment relationships and psychological well-being of the individual, as proposed by Bowlby. Earliest and original attachment with one's own mother was perceived as prototype for later attachment relationships in an individual's life (Bowlby, 1979). Attachments acquired in infancy were considered as prototypes of supportive interactions in adulthood, as proposed by

social support theorists in recent years (Kahn & Antonucci, 1980). In addition, there has been some evidence for a positive correlation between social support and well-being (Lin et al., 1979). Therefore, this study examined the relationship of attachment variables, social support, and psychological well-being of women during pregnancy.

Several important questions were addressed in relation to the most intimate attachment relationships during adulthood from an intergenerational perspective. Major questions were:

1. "What is a greater predictor of fetal attachment, the woman's relationship with her original attachment figure (mother) or her current attachment figure (her husband)?"
2. "What is the significance of attachment relationships during pregnancy on the psychological well-being of the pregnant woman?"
3. "How much variance do the attachment and social support variables account for in the psychological well-being of the pregnant woman?"

The study design represented a passive observational approach. Multiple correlational and regression techniques were used to analyze the relationships among study variables. The findings were based on data derived from the following self-completed structured questionnaires: Prenatal Self-evaluation (Lederman & Lederman, 1979), Maternal-Fetal Attachment (Cranley, 1981a), Norbeck's Social Support (Norbeck et al., 1981), and the General Well-being Schedule (Dupuy, 1974). The sample consisted of 115 women between 18 and 35 years of age who were married and living with their husbands and who did not have any

preexisting medical conditions. Access to mothers was available through the prenatal classes at an urban community health agency in Canada.

Results of the study supported the hypotheses that mother-daughter and husband-wife attachments have positive relationships with psychological well-being during pregnancy ($p < .05$ and $p < .001$, respectively). Husband-wife attachment, mother-daughter attachment, and the age of the subject accounted for 36% of the total variability in psychological well-being ($R^2 = .36$, adj $R^2 = .33$). Although there was a significant pairwise correlation between psychological well-being and social support ($r = .212$, $p = .023$), there was no longer any significant relationship between these two variables after adjusting for husband-wife attachment and mother-daughter attachment. All the predictive information in social support is contained in the information in husband-wife attachment and mother-daughter attachment. Primary attachment relationships are, therefore, more important for women during pregnancy than more generalized social support. A loss of such support also was more of an issue for the study sample than had been reported for a nonpregnant sample (Norbeck et al., 1981). Study predictions that maternal-fetal attachment scores were related to mother-daughter attachment, husband- wife attachment, and social support scores of pregnant women were not supported.

The study findings confirm that the earliest and original attachment with a woman's mother does impact on the intimate attachment relationship she develops with her husband during adulthood. The findings also demonstrate that both these unique and intimate attachment relationships function as significant predictors of psychological well-being of women during pregnancy. The results also provide new

insights into the role of these attachment relationships in promoting psychological well-being for pregnant women. Additionally, results may be viewed as one means of identifying risks in the emotional health of women during pregnancy.

The lack of significant relationships between maternal-fetal attachment and mother-daughter attachment, husband-wife attachment, and social support variables raises important questions pertaining to clarity in conceptualization of the construct, validity and reliability of the measurement tool, and the need for replication of studies with more generalizable samples of pregnant women.

The study prediction that self-perceptions of social support available for pregnant women influence their psychological well-being was supported. However, contrary to what was proposed in the study, no significant relationship was found between attachment variables and social support. Results of the study demonstrated that primary attachment relationships with mother and husband were more significant for pregnant women's psychological well-being than more generalized and global social support. Descriptive findings in relation to social support also supported the fact that pregnant women identified a higher proportion (71.78) of the total functional support from spouse, family, and relatives as compared with 43.5 for nonclinical general adult female population (Norbeck et al., 1981).

In conclusion, the study recommends a framework combining attachment and developmental theories for research focused on life-span attachment relationships and psychological well-being during a developmental transition such as pregnancy. There is need to develop valid and reliable measures that are specific to given situations for

all the variables selected in the study. Longitudinal studies are needed to determine the process of and variations in developing attachment relationships during pregnancy and their impact on psychological well-being of pregnant women. Longitudinal studies dealing with social support functions and sources also will be beneficial in determining needs and perceptions of available support for pregnant women. Further research to investigate the impact of intimate attachment relationships on childbearing outcomes is needed. Health practice implications include emphasizing the need for and discovering ways of promoting early and original mother-daughter attachment, which is perceived as a prototype for later human attachment relationships, an important contributing factor for emotional health of women during pregnancy. Professionals involved in the promotion of health for pregnant women are in an enviable position as initiators of research and creators of innovative approaches in nursing practice specific to this area.

BIBLIOGRAPHY

Abernethy, V.D. (1973) Social network and response to the maternal role. International Journal of Sociology of the Family, 3, 86-92.

Abernethy, V. (1976) Cultural perspectives on the impact of women's changing roles on psychiatry. American Journal of Psychiatry, 133 (6), 657-661.

Affonso, D. (1982) Assessment of women's postpartal adaptation as indicator of vulnerability to derpression. Unpublished doctoral dissertation, University of Arizona, Tucson.

Ainsworth, M. (1967) Infancy in Uganda: Infant care and growth of love. Baltimore: The Johns Hopkins Press.

Ainsworth, M. (1969, August) Object relations, dependency and attachment: A theoretical review of the infant-mother relationship. Child Development, 40, 969-1025.

Ainsworth, M. (1972) Attachment and dependency: A comparison. In J.L. Gewirtz (Ed.), Attachment and dependency (pp. 97-138). New York: Halsted Press.

Alberta Bureau of Statistics. (1983) Alberta statistical review, Annual 1982. Edmonton, Alberta: Alberta Bureau of Statistics.

Allen, M.J. & Yen, W.M. (1979) Introduction to measurement theory. Monterey, CA: Brooks/Cole.

Antonucci, T. (1979) Attachment: A life-span concept. Human Development, 19 (3), 135-142.

Arbeit, S.A. (1975) A study of women during their first pregnancy. Unpublished doctoral dissertation, Yale University, New Haven, CT.

Arizmendi, T.G. & Affonso, D. (1984) Research on psychosocial factors and postpartum depression: A critique. Birth, 11 (4), 237-240.

Asher, H.B. (1976) Causal modeling series: Quantitative applications in the social sciences. Beverly Hills, CA: Sage.

Ballou, J.W. (1978a) The psychology of pregnancy. Lexington, MA: D.C. Heath & Company.

Ballou, J.W. (1978b) The significance of reconciliative themes in the psychology of pregnancy. Bulletin of the Menninger Clinic, 42 (5), 383-413.

Barnard, K. (1981) Birth defects. Original Article Series, 17 (6), 285-288.

Benedek, T. (1949) The psychosomatic implications of the primary unit: Mother-child. American Journal of Orthopsychiatry, 19, 642-654.

Benedek, T. (1956) Psychobiological aspects of mothering. American Journal of Orthopsychiatry, 26, 272-278.

Benedek, T. (1960) The organization of the reproductive drive. International Journal of Psychoanalysis, 61, 1-15.

Benedek, T. (1970a) Motherhood and nurturing. In E. Anthony and T. Benedek (Eds.), Parenthood: Its psychology and psychopathology. Boston: Little, Brown and Company.

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

Berkman, L.F. & Syme, S.L. (1979) Social networks, host resistance, and mortality: A nine-year follow-up study of Alameda County residents. American Journal of Epidemiology, 109, 186-204.

Bibring, G.L. (1959) Some considerations of the psychological processes in pregnancy. Psychoanalytic Study of the Child, 14, 113-121.

Bibring, G.L., Dwyer, T.F., Huntington, D.S., & Valenstein, A.F. (1961) A study of the psychological processes in pregnancy and the earliest mother-child relationship. Psychoanalytic Study of the Child, 16, 9-71.

Bibring, G.L. & Valenstein, A.F. (1976, June) Psychological aspects of pregnancy. Clinical Obstetrics and Gynecology, 19, 357-371.

Bott, E. (1972) Families and social networks (2nd ed.). London: Tavistock.

Bowlby, J. (1958) The nature of the child's tie to his mother. International Journal of Psychoanalysis, 39, 350-373.

Bowlby, J. (1965) Childcare and the growth of love (2nd ed.). New York: Penguin Books.

Bowlby, J. (1969) Attachment and loss (Vol. I). Attachment London: Hogarth Press.

Bowlby, J. (1979) The making and breaking of affectional bonds. London: Tavistock.

Brandt, P.A. & Weinert, C. (1981) The PRQ - A social support measure. Nursing Research, 30 (5), 277-280.

Braverman, J. & Roux, J.F. (1978) Screening for the patient at risk for postpartum depression. Obstetrics and Gynecology, 52 (6), 731-736.

Breen, D. (1975) The birth of a first child: Towards an understanding of femininity. London: Tavistock.

Brew, M. (1950) Psychotic reactions associated with pregnancy and childbirth. Journal of Nervous and Mental Disease, 111, 408-415.

Brook, R.H. et al. (1979) Conceptualization and measurement of health for adults. In The health insurance study: Overview (Vol. 8). Santa Monica, CA: Rand Company.

Broussard, E.R. (1979) Assessment of the adaptive potential of the mother-infant system: The neonatal perception inventories. Seminar in Perinatology, 3, 91-100.

Brown, L.B. (1964) Anxiety in pregnancy. British Journal of Medical Psychology, 37, 45-57.

Canada Bureau of Statistics. (1983) Statistics Canada. Ottawa: Canada Bureau of Statistics.

Canada Update. (1983) 1 (6).

Caplan, G. (1959) Concepts of mental health and consultation: Their application in public health social work. Washington, DC: U.S. Department of Health, Education, and Welfare.

Caplan, G. (1961) An approach to community mental health. New York: Grune & Stratton.

Cassel, J. (1976) The contribution of the social environment to host resistance. American Journal of Epidemiology, 104, 107-123.

Chertok, L. (1969) Motherhood and personality. London: Tavistock.

Chodorow, N. (1978) The reproduction of mothering: Psychoanalysis and the sociology of gender. Berkeley: University of California Press.

Chojnacki, S. (1976) Preparation for motherhood: A comparison of high risk and low risk pregnant women. Thesis, University of Wisconsin-Madison.

Cobb, S. (1976) Social support as a moderator of life stress. Psychosomatic Medicine, 38 (5), 300-314.

Cohen, J. & Cohen, P. (1975) Applied multiple regression/ correlation analysis for the behavioral sciences. New York: John Wiley & Sons.

Cohen, L.J. (1974) The operational definition of human attachment. Psychological Bulletin, 81 (4), 207-217.

Cohen, M.B. (1966) Personal identity and sexual identity. Psychiatry, 29, 45-68.

Cohen, R.L. (1970) Experiences of pregnancy: Some relationships to the syndrome of mental retardation. In F. Menalaseino (Ed.), Psychiatric approaches to mental retardation. New York: Basic Books.

Cohen, R.L. (1979) Maladaptation to pregnancy. Seminars in Perinatology, 3 (1), 15-24.

Colman, A. (1969) Psychological state during first pregnancy. American Journal of Orthopsychiatry, 39 (4), 788-797.

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

Colman, A. & Colman, L. (1973) Pregnancy as an altered state of consciousness. Birth and the Family Journal, 1 (1), 7-11.

Cook, T.D. & Campbell, D.T. (1979) Quasi-experimentation, design and analysis issues for field settings. Chicago: Rand McNally College Publishing Company.

Cranley, M.S. (1981a) Development of a tool for the measurement of maternal attachment during pregnancy. Nursing Research, 30 (5), 281-284.

Cranley, M.S. (1981b) Roots of attachment: The relationship of parents with their unborn. In B.S. Raff & P. Carroll (Eds.), Perinatal parental behavior: Nursing research and implications for newborn health. New York: Alan R. Liss.

Crawford, M. (1968) Physiological and behavioral cues to disturbance in childbirth. Bulletin of the Floane Hospital for Women, 14, 132-142.

Davids, A. & DeVault, S. (1962) Maternal anxiety during pregnancy and childbirth abnormalities. Psychosomatic Medicine, 24, 464-470.

Dean, A. & Lin, N. (1977) The stress-buffering role of social support problems and prospects for systematic investigation. The Journal of Nervous and Mental Disease, 165 (6), 403-417.

Deutsch, H. (1944) The psychology of women (Vol. 1). London: Grune & Stratton.

Deutsch, H. (1945) The psychology of women (Vol. II). Motherhood. New York: Grune & Stratton.

Deutscher, M. (1970) Brief family therapy in the course of first pregnancy: A clinical note. Contemporary Psychoanalysis, 7, 21-35.

Dupuy, H. (1974, April 1-4) Assessment of self-representations of subjective well-being and distress. Unpublished paper presented at the National Conference on Evaluation in Alcohol, Drug Abuse, and Mental Health Programs, Washington, DC.

Dupuy, H. (1978, October 17) Self-representations of general psychological well-being of American adults. Unpublished paper, American Public Health Association Meeting, Los Angeles, CA.

Dyer, E.D. (1963) Parenthood as crisis: A restudy. Marriage and Family Living, 25, 196-201.

Edwards, D.W., Jarvis, R.M., Swaback, D., Mueller, D.P., & Wagman, W.J. (1979) Developing comparison groups for community mental health: The utility of community surveys. American Journal of Community Psychology, 7 (1), 123-127.

Entwisle, D.R. & Doering, S.G. (1981) The first birth: A family turning point. Baltimore: The Johns Hopkins University Press.

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

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

Fazio, A.F. (1977, September) A concurrent validational study of the NCHS General Well-being Schedule (DHEW Publication No. [HRA] 78-1347, Series 2, No. 73). Hyattsville, MD: National Center for Health Statistics.

Feiring, D. (1976) The influence of the child and secondary parent on maternal behavior. Toward a social systems view of early infant-mother attachment. Unpublished doctoral dissertation, University of Pittsburgh.

Feldman, H. & Rogoff, M. (1977) Correlates of changes in marital satisfaction with the birth of a first child. Department of Child Development and Family Relationships, Cornell University.

Fox, D. (1976) Fundamentals of research in nursing (3rd ed.). New York: Appleton-Century-Crofts.

Freud, A. (1965) The writings of Anna Freud (Vol. 7). New York: International Universities Press.

Gewirtz, J.L. (1972) Attachment and dependency. New York: Halsted Press.

Giles-Sims, J. (1983) Wife battering: A systems approach. New York: Guilford Press.

Glazer, G. (1980) Anxiety levels and concerns among pregnant women. Research in Nursing and Health, 3 (3), 107-113.

Goethals, G.W. (1976) The evolution of sexual and genital intimacy. A comparison of the views of Erik H. Erikson and Harry Stack Sullivan. Journal of the American Academy of Psychoanalysis, 4 (4), 529-544.

Goldfarb, A.I. (1969) The psychodynamics of dependency and the search for aid. In R.A. Kalish, The dependencies of old people. Ann Arbor, MI: Institute of Gerontology.

Gorsuch, R.L. & Key, M.K. (1974) Abnormalities of pregnancy as a function of anxiety and life stress. Psychosomatic Medicine, 36, 352-362.

Grimm, E.R. (1961) Psychological tension in pregnancy. Psychosomatic Medicine, 23 (6), 520-527.

Grossman, F.K., Eichler, L.S., & Winickoff. (1980) Pregnancy, birth and parenthood. San Francisco: Jossey-Bass.

Harlow, H.F. (1958) The nature of love. American Psychologist, 13, 673-685.

Harris, R., Linn, M.W., Good, R., & Hunter, K. (1981) Attitudes and perceptions of perinatal concepts during pregnancy in women from three cultures. Journal of Clinical Psychology, 37 (8), 477-483.

Health of Canadians. (1981) Report of the Canada Health Survey/Health and Welfare Canada, Statistics Canada. Ottawa: Minister of Supply and Services Canada.

Heller, K. (1979) The effects of social support: Prevention and treatment implications. In A. Goldstein & F.H. Kanfer (Eds.), Maximizing treatment gains: Transfer enhancement in psychotherapy. New York: Academic press.

Helper, M.M., Cohen, R.L., Beitenman, E.T., & Eaton, L.F. (1968) Life events and acceptance of pregnancy. Journal of Psychosomatic Research, 12, 183-188.

Hoffman, L.W. & Manis, J.D. (1978) Influences of children on marital interaction and parental satisfactions and dissatisfactions. In R.W. Lerner & G.B. Spanier (Eds.), Child influences on marital and family interaction. New York: Academic Press.

Hollingshead, A.B. (1978) Four-factor index of social status. A working paper, Department of Sociology, Yale University.

Holmes, T.H. & Rahe, R.H. (1967) The social readjustment rating scale. Journal of Psychosomatic Research, 11, 213.

Jessner, L., Weigert, E., & Foy, J.L. (1970) The development of parental attitudes during pregnancy. In E.J. Anthony & T. Benedek (Eds.), Parenthood: Its psychology and psychopathology. Boston: Little, Brown, and Company.

Johnson, D.E. (1961) The significance of nursing care. American Journal of Nursing, 61 (11), 63-66.

Jordan, B. (1980) Birth in four cultures. Montreal: Eden Press.

Kahn, R.L. (1979) Aging and social support. In M.W. Riley (Ed.), Aging from birth to death: Interdisciplinary perspectives (pp. 82-88). Boulder, CO: Westview Press.

Kahn, R.L. & Antonucci, T.C. (1980) Convoys over the life course: Attachment, roles, and social support. In P.B. Bates & O. Brim (Eds.), Life span development and behavior (Vol. 1). New York: Academic Press.

Kaplan, B.H., Cassel, J.C., & Gore, S. (1977) Social support and health. Medical Care, 5 (Supplement), 47-58.

Kerlinger, F.N. (1973) Foundations of behavioral research (2nd ed.). New York: Holt, Reinhart & Winston.

Kumar, R. & Robson, K. (1978) Neurotic disturbance during pregnancy and the puerperium: Preliminary report of a prospective survey of 119 primiparae. In M. Sandler (Ed.), Mental illness in pregnancy and the puerperium. London: Oxford University Press.

Laing, R.D. (1971) The politics of the family and other essays (rev. ed.). New York: Pantheon Books.

Lederman, R.P. (1984a) Anxiety and conflict in pregnancy: Relationship to maternal health status. Annual Review of Nursing Research, 2, 27-61.

Lederman, R.P. (1984b) Psychosocial adaptation in pregnancy: Assessment of seven dimensions of maternal development. Englewood Cliffs, NJ: Prentice-Hall.

Lederman, R. & Lederman, E. (1979, December 6) The development of a prenatal self-evaluation questionnaire for the measurement of seven psychological dimensions. Paper presented at the Council of Nurse Researchers Annual Meeting, San Antonio, Texas.

Lederman, E., Lederman, R., Work, B.A., & McCann, D.S. (1978) The relationship of maternal anxiety, plasma catecholamines and plasma cortisol to progress in labor. American Journal of Obstetrics and Gynecology, 132, 495-500.

Lederman, E., Lederman, R., Work, B.A., & McCann, D.S. (1979) Relationship of Psychological factors in pregnancy to progress in labor. Nursing Research, 28, 94-97.

Lederman, E., Lederman, R., Work, B.A., & McCann, D.S. (1981, April) Maternal psychological and physiological correlates of fetal-newborn health status. American Journal of Obstetrics and Gynecology, 139, 956-958.

Leifer, M. (1971) Psychological changes accompanying pregnancy and motherhood. Unpublished doctoral dissertation, University of Chicago.

Leifer, M. (1977) Psychological changes accompanying pregnancy and motherhood. Genetic Psychological Monographs, 95, 55-96.

Leifer, M. (1980) Psychological effects of motherhood: A study of first pregnancy. New York: Praegar.

Lin, N., Simeone, R.S., Ensel, W.M., & Kuo, W. (1979) Social support, stressful life events, and illness: A model and empirical test. Journal of Health and Social Behavior, 20 (2), 108-119.

Lowenthal, M. & Haven, C. (1968) Interaction and adaptation: Intimacy as a critical variable. American Sociological Review, 33, 20-30.

Lubin, B., Gardner, S.H., & Roth, A. (1975) Mood and somatic symptoms during pregnancy. Psychosomatic Medicine, 37 (2), 136-146.

Lumley, J. (1980a) The development of maternal-fetal bonding in first pregnancy. In L. Zichella (Ed.), Emotional and reproduction. New York: Academic Press.

Lumley, J. (1980b) The image of the fetus in the first trimester. Birth and the Family Journal, 7, 5-14.

Lumley, J. (1982a) Attitudes to the fetus among primigravidae. Australian Pediatric Journal, 18, 106-109.

Lumley, J. (1982b) Maternal-fetal bonding, II: Implications for the next three months. Unpublished manuscript, Monash University, Melbourne, Australia.

Marris, P. (1982) Attachment and society. In C.M. Parkes & J.S. Hinde (Eds.), The place of attachment in human behavior (pp. 185-201). New York: Basic Books.

McDonald, R.L. & Christakos, A.C. (1963) Relationship of emotional adjustment during pregnancy to obstetrical complications. American Journal of Obstetrics and Gynecology, 86, 341-348.

Mead, M. & Newton, N. (1967) Cultural patterning of perinatal behavior. In S.A. Richardson & A.F. Guttmacher (Eds.), Childbearing: Its social and psychological aspects. Baltimore: Williams & Wilkins Company.

Medwar, P. (1967) The art of the soluble. London: Malthuen.

Mercer, R.T. (1981) A theoretical framework for studying factors that impact on the maternal role. Nursing Research, 30 (2), 73-77.

Mercer, R.T. (1982) Factors having an impact on maternal role attainment in the first year of motherhood. San Francisco: University of California, San Francisco, Department of Family Health Care Nursing.

Mercer, R.T. (1984) The relationship of developmental variables to maternal behavior. Research in Nursing and Health. Manuscript submitted for publication.

Mercer, R.T., Hackley, K.C., & Bostrom, A.G. (1983) Relationship of psychosocial and perinatal variables to perception of childbirth. Nursing Research, 32 (4), 202-207.

Meyerowitz, J.H. (1970) Satisfaction during pregnancy. Journal of Marriage and the Family, 32 (1), 38-42.

Miller, H.W. (1973) Plan and operation of the health and nutrition examination survey, United States, 1971-1973 (DHEW Publication No. [HSM] 73-1310). Rockville, MD: National Center for Health Statistics.

Mitchell, J.C. (Ed.). (1969) Social networks in urban situations. Manchester, England: University Press.

Nadelson, C. (1973) "Normal" and "special" aspects of pregnancy. Obstetrics and Gynecology, 41, 611-620.

Naeye, R.L. (1983) Maternal age, obstetric complications, and the outcome of pregnancy. Obstetrics and Gynecology, 61, 210-216.

Neki, J.S. (1975) Dependence: Cross-cultural consideration of dynamics. In S. Arieti (Ed.), Newer dimensions in psychiatry. New York: Wiley.

Nie, N., Hull, C., Jenkins, J., Steinbrenner, K., & Brent, D. (1975) Statistical package for the social sciences (SPSS) (2nd ed.). New York: McGraw-Hill.

Nilsson, A. & Almgren, P.E. (1970) Paranatal emotional adjustment. A prospective investigation of 165 women. Acta Psychiatrica Scandinavica, 220 (Supplement), 65-141.

Nilsson, A., Uddenberg, N., & Almgren, P.E. (1971) Prenatal relations and identification in women with special regard to paranatal emotional adjustment. Acta Psychiatrica Scandinavica, 47, 57-78.

Norbeck, J.S. (1981) Social support: A model for clinical research and application. Advances in Nursing Science, 3 (4), 43-59.

Norbeck, J.S., Lindsey, A.M., & Carrieri, V.L. (1981) The development of an instrument to measure social support: Phase one. Nursing Research, 30 (5), 264-269.

Norbeck, J. & Tilden, V. (1983) Life stress, social support, and emotional complications of pregnancy. Journal of Health and Social Behavior, 24 (1), 30-46.

Norbeck, J.S., Lindsey, A.M., & Carrieri, V.L. (1983) Further development of the Norbeck social support questionnaire: Normative data and validity testing. Nursing Research, 32, 4-9.

Nuckolls, K.B., Cassel, J., & Kaplan, B.H. (1972) Psychosocial assets, life crisis and the prognosis of pregnancy. American Journal of Epidemiology, 95 (5), 431-441.

O'Hara, M., Rehm, L., & Campbell, S. (1983) Postpartum depression: A role for social network and life stress variables. Journal of Nervous and Mental Disease, 171 (6), 336-341.

O'Rourke, M.W. (1980) The subjective appraisal of psychological well-being and self-reports of menstrual and nonmenstrual symptomatology in employed women. Unpublished doctoral dissertation, University of California, San Francisco.

Piaget, J. (1952) The origins of intelligence in children (rev. ed.). New York: International Universities Press.

Piaget, J. (1954) The construction of reality in the child (rev. ed). New York: Basic Books.

Pugh, T.F., Jerald, B.K., Schmidt, W.M., & Reed, R.B. (1963) Rates of mental disease related to childbearing. New England Journal of Medicine, 268, 1224-1228.

Rees, B.L. (1980a) Maternal identification and infant care: A theoretical perspective. Western Journal of Nursing Research, 2, 666-706.

Rees, B.L. (1980b) Measuring identification with the mothering role. Research in Nursing and Health, 3, 49-56.

Robson, K.S. & Moss, H.A. (1970) Patterns and determinants of maternal attachment. Journal of Pediatrics, 77, 976-985.

Rubin, R. (1967) Attainment of the maternal role, Part 1: Processes. Nursing Research, 16 (3), 237-245.

Rubin, R. (1970) Cognitive style in pregnancy. American Journal of Nursing, 70 (3), 502-508.

Rubin, R. (1972) Fantasy and object constancy in maternal relationships. Maternal-Child Nursing Journal, 1, 101-111.

Rubin, R. (1975, Fall) Maternal tasks in pregnancy. Maternal-Child Nursing Journal, 4, 143-153.

Rubin, R. (1977) Binding-in in the postpartum period. Maternal-Child Nursing Journal, 6 (2), 67-75.

Ryder, R.G. (1973) Longitudinal data relating marriage satisfaction and having a child. Journal of Marriage and Family, 35, 604-606.

Scarf, M. (1980) Unfinished business: Pressure points in the lives of women. New York: Doubleday.

Shereshefsky, P.M. & Yarrow, L.J. (1973) Psychological aspects of a first pregnancy and early postpartum adaptation. New York: Raven Press.

Sosa, R., Kennell, J., Klaus, M., Robertson, S., & Urrutia, J. (1980) The effect of a supportive companion on perinatal problems, length of labor, mother-infant interaction. New England Journal of Medicine, 303, 597-600.

Standley, K., Soule, B., & Copans, S. (1979) Dimensions of prenatal anxiety and their influence on pregnancy outcome. American Journal of Obstetrics and Gynecology, 135 (1), 22-26.

Sullivan, H.S. (1953) The interpersonal theory of psychiatry. New York: W.W. Norton & Company.

Tanner, L.M. (1969) Development tasks of pregnancy. In B.S. Bergerson et al. (Eds.), Current concepts in clinical nursing (Vol. 2). St. Louis: C.V. Mosby.

Tilden, V.P. (1981) The relationship of single status during pregnancy to life stress, social support, and emotional disequilibrium. Unpublished doctoral dissertation, University of California, San Francisco.

Tilden, V.P. (1983) The relation of life stress and social support to emotional disequilibrium during pregnancy. Research in Nursing and Health, 6, 167-174.

Uddenberg, N. (1974) Reproductive adaptation in mother and daughter. Acta Psychiatrica Scandinavica Supplementum, 254.

Uddenberg, N., Fagerstrom, C.F., & Hakanson-Zaunders, M. (1976) Reproductive conflicts, mental symptoms during pregnancy and time in labor. Journal of Psychosomatic Research, 20, 575-581.

Ware, J., Johnston, S., Davies-Avery, A., & Brook, R. (1979) Conceptualization and measurement of health for adults in the health insurance study (Vol. III). Mental health. Santa Monica, CA: Rand Company.

Weaver, R.H. & Cranley, M.S. (1983) An exploration of paternal-fetal attachment behavior. Nursing Research, 32 (2), 68-72.

Weinraub, M., Brooks, J., & Lewis, M. (1977) The social network: A reconsideration of the concept of attachment. Human Development, 20, 31-47.

Weiss, R.S. (1974) The provisions of social relationships: In doing unto others. Englewood Cliffs, NJ: Prentice-Hall.

Wenner, N., Cohen, M.B., Weigert, E.V., Kearnes, R.G., Ohaneson, E.M., & Fearing, J.M. (1969) Emotional problems in pregnancy. Psychiatry, 32, 389-410.

Westbrook, M. (1978) The reaction to childbearing and early maternal experience of women with differing marital relationships. British Journal of Medical Psychology, 51, 191-199.

Wiggins, K.M. (1983) The origins of attachment: An explanatory study of prenatal maternal attachment. Unpublished doctoral dissertation, Syracuse University, New York.

Wilcox, B.L. (1981) Social support, life stress, and psychological adjustment: A test of the buffering hypothesis. American Journal of Community Psychology, 9, 371-386.

Winnicott, D.W. (1958) Primary maternal preoccupation. In Collected papers: Through paediatrics to psychoanalysis (pp. 300-305). London: Tavistock.

Yamamoto, K.J. & Kinney, D.K. (1976) Pregnant women's ratings of different factors influencing psychological stress during pregnancy. Psychological Reports, 39, 203-214.

Zajicek, E. & Wolkind, S. (1978) Emotional difficulties in married women during and after the first pregnancy. British Journal of Medical Psychology, 51, 379-385.

APPENDIX A

CONSENT FORM

Consent to be a Research Subject

Mrs. Rachel Zachariah, a doctoral student in nursing at the University of California, San Francisco, San Francisco, California, U.S.A., is doing a study to learn more about the influence of close relationships with unborn baby, mother, and husband, on the well-being of pregnant women. Since I am pregnant and am attending prenatal classes at the Medicine Hat Health Unit, Medicine Hat, Alberta, Canada, I have been invited to be subject in this study.

If I agree to be in the study, the following will occur:

1. I will be contacted by Mrs. Zachariah to make an appointment, and will be asked to complete a questionnaire used for the study.

2. I will have the freedom to refuse to answer any particular question on the questionnaire, if I do not wish to do so.

3. The investigator will be available for answering any question I may have relating to the questionnaire or the study.

4. This will take place in the conference room at the Medicine Hat Health Unit, during my visit for the prenatal classes, unless otherwise desired.

5. The time needed for this will be about 30 minutes.

Any information I provide will be treated as strictly confidential. My name will not appear on any of the forms I complete.

There will be no benefit to me from the study procedure except that I will have the opportunity to talk to the investigator.

I have talked with Mrs. Zachariah about this study and she has answered my questions.

If I have other questions, I may call her at 529-3914 (office) or 527-2970 (residence).

I have been offered a copy of this consent form to keep.

Participation in research is voluntary. I may refuse to participate or may withdraw at any time without jeopardy to the services I receive from the Medicine Hat Health Unit.

_____ _____

Date Subject's Signature

APPENDIX B

FLYER

SPECIAL MESSAGE

WE'D LIKE YOUR HELP

WHAT: A study on the emotional well-being of pregnant women and how it is influenced by her developing baby, husband, mother, and other supportive individuals.

WHO: Pregnant women.

WHY: To learn about the needs and resources for well-being of pregnant women.

WHEN: 30-40 minutes of your time to fill out questionnaires.

WHERE: Conference Room, Health Unit, Crestwood Branch

ALL INFORMATION WILL BE KEPT CONFIDENTIAL

If you have any questions, please telephone Rachel Zachariah at 529-3850 at the Medicine Hat College or at 527-2970 at her residence.

- -

If you are interested in participating in this study, please fill out this blank form and return it to your prenatal instructor. You will be contacted for more information and to set up a time to answer the questionnaire.

NAME: _____

HOW TO CONTACT ME: _____

DAYS I CAN STAY FOR 30-40 MINUTES: _____

_____

_____

APPENDIX C

PERSONAL DATA - PART I A

PERSONAL DATA - PART I A
(Strictly Confidential)

Name: _____

Age: Wife _____ Telephone # _____

Husband _____

No. of Pregnancies in the Past: _____ (including abortions and still-births, if any)

Expected Date of Delivery: _____

Marital Status

How Long Married? _____

Occupation: Wife _____

Husband _____

Education: Wife _____

Husband _____

Are you living with your husband at present? _____

Does your husband plan to stay with you

1. during delivery? _____
2. after delivery (in the hospital)? _____

Is your mother living? _____

Up to what age did you live with your mother? _____

How often do you contact your mother? _____
(telephone, mail, or meeting in person)

Does your mother plan to stay with you

1. during delivery? _____
2. after delivery (in the hospital)? _____
3. after discharge from the hospital? _____

Is there a friend or sister who plans to stay with you

1. during delivery? _____

2. after delivery (in the hospital)? _____

3. after discharge from the hospital? _____

APPENDIX D

PERSONAL DATA - PART I B

PERSONAL DATA - PART I B

For each of the questions given below, please circle the most appropriate response.

1. How does this pregnancy affect your health?

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
1	2	3	4	5

2. How are you feeling during this pregnancy?

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
1	2	3	4	5

3. How would you rate your health during pregnancy?

POOR	FAIR	GOOD	VERY GOOD	EXCELLENT
1	2	3	4	5

4. Do you discuss your general health status with your mother?

NEVER	SELDOM	OFTEN	FREQUENTLY	ALWAYS
1	2	3	4	5

5. Do you discuss your general health status with your husband?

NEVER	SELDOM	OFTEN	FREQUENTLY	ALWAYS
1	2	3	4	5

6. Do you discuss your general health with any other individual who is close to you?

NEVER	SELDOM	OFTEN	FREQUENTLY	ALWAYS
1	2	3	4	5

APPENDIX E

PRENATAL SELF-EVALUATION QUESTIONNAIRE

PRENATAL SELF-EVALUATION QUESTIONNAIRE

Directions

The statements below have been made by expectant women to describe themselves. Read each statement and decide which response best describes your feelings. Then circle the appropriate letter next to each statement.

		Very Much So	Moderately So	Somewhat So	Not At All
1.	This is a good time for me to be pregnant.	A	B	C	D
2.	I like to watch other parents and children together.	A	B	C	D
3.	I can tolerate the discomforts that I have had during pregnancy.	A	B	C	D
4.	My husband and I talk about the coming baby.	A	B	C	D
5.	My husband has been critical of me during the pregnancy.	A	B	C	D
6.	I feel that rearing children is rewarding.	A	B	C	D
7.	I feel it is necessary to know a lot about labor.	A	B	C	D
8.	I can cope well with pain.	A	B	C	D
9.	It's hard for me to get used to the changes brought about by pregnancy.	A	B	C	D
10.	My husband is understanding (calms me) when I get upset.	A	B	C	D
11.	I can perform well under stress.	A	B	C	D
12.	I think my labor and delivery will progress normally.	A	B	C	D
13.	There is little I can do to prepare for labor.	A	B	C	D
14.	My mother shows interest in the coming baby.	A	B	C	D

		Very Much So	Moderately So	Somewhat So	Not At All
15.	I have confidence in my ability to maintain composure in most situations.	A	B	C	D
16.	I am worried that the baby will be abnormal.	A	B	C	D
17.	I think the worst whenever I get a pain.	A	B	C	D
18.	Realizing that labor has to end will help me maintain control in labor.	A	B	C	D
19.	I look forward to caring for the baby.	A	B	C	D
20.	My mother is happy about my pregnancy.	A	B	C	D
21.	My mother offers helpful suggestions.	A	B	C	D
22.	I have enjoyed this pregnancy.	A	B	C	D
23.	My husband is interested in discussing the pregnancy with me.	A	B	C	D
24.	I have a good idea of what to expect during labor and delivery.	A	B	C	D
25.	I understand how to work with the contractions in labor.	A	B	C	D
26.	I look forward to childbirth.	A	B	C	D
27.	I suspect the doctors and nurses will be indifferent to my concerns in labor.	A	B	C	D
28.	It's easy to talk to my mother about my problems.	A	B	C	D
29.	I have doubts about being a good mother.	A	B	C	D
30.	I dwell on the problems the baby might have.	A	B	C	D
31.	My mother looks forward to this grandchild.	A	B	C	D
32.	I am glad I'm pregnant.	A	B	C	D
33.	I like having children around me.	A	B	C	D
34.	It will be hard for me to balance childcare with my other commitments and activities.	A	B	C	D

		Very Much So	Moder-ately So	Some-what So	Not At All
35.	My husband helps me at home when I need it.	A	B	C	D
36.	I find it hard to talk to my husband about any changes in sex drive during this pregnancy.	A	B	C	D
37.	I feel good when I'm with my mother.	A	B	C	D
38.	I am preparing myself to do well in labor.	A	B	C	D
39.	I feel sure that I will lose control in labor.	A	B	C	D
40.	I can count on my husband's support in labor.	A	B	C	D
41.	I am afraid that I will be harmed during delivery.	A	B	C	D
42.	I feel that babies aren't much fun to care for.	A	B	C	D
43.	My husband feels I burden him with my feelings and problems.	A	B	C	D
44.	When we get together my mother and I tend to argue.	A	B	C	D
45.	It will be difficult for me to give enough attention to a baby.	A	B	C	D
46.	I think the baby will be a burden to me.	A	B	C	D
47.	I feel prepared for what happens in labor.	A	B	C	D
48.	I know some things I can do to help myself in labor.	A	B	C	D
49.	When the time comes in labor, I'll be able to push even if it's painful.	A	B	C	D
50.	I think about the kind of mother I want to be.	A	B	C	D
51.	I am anxious about complications occurring in labor.	A	B	C	D
52.	I feel that the stress of labor will be too much for me to handle.	A	B	C	D

		Very Much So	Moder-ately So	Some-what So	Not At All
53.	I think I can bear the discomfort of labor.	A	B	C	D
54.	I am concerned that caring for a baby will leave me little time for myself.	A	B	C	D
55.	My mother reassures me when I have doubts about myself.	A	B	C	D
56.	I feel well informed about labor.	A	B	C	D
57.	I am worried that something will go wrong during labor.	A	B	C	D
58.	It's difficult for me to accept this pregnancy.	A	B	C	D
59.	My mother encourages me to do things in my own way.	A	B	C	D
60.	I think my husband would say we have made a satisfactory sexual adjustment during this pregnancy.	A	B	C	D
61.	This has been an easy pregnancy so far.	A	B	C	D
62.	I wish I wasn't having the baby now.	A	B	C	D
63.	I worry that I will lose the baby in labor.	A	B	C	D
64.	If I lose control in labor it will be hard for me to regain it.	A	B	C	D
65.	My mother criticizes my decisions.	A	B	C	D
66.	I'm having a problem adjusting to this pregnancy.	A	B	C	D
67.	I am worried that my baby may not like me.	A	B	C	D
68.	I focus on all the terrible things that could happen in labor.	A	B	C	D
69.	This pregnancy has been a source of frustration to me.	A	B	C	D
70.	I can count on my husband to share in the care of the baby.	A	B	C	D

		Very Much So	Moder-ately So	Some-what So	Not At All
71.	I am confident of having a normal childbirth.	A	B	C	D
72.	I feel that childbirth is a natural, exciting event.	A	B	C	D
73.	I feel I already love the baby.	A	B	C	D
74.	I have found this pregnancy gratifying.	A	B	C	D
75.	I believe I can be a good mother.	A	B	C	D
76.	I have regrets about being pregnant at this time.	A	B	C	D
77.	I find many things about pregnancy disagreeable.	A	B	C	D
78.	I feel I will enjoy this baby.	A	B	C	D
79.	I am happy about this pregnancy.	A	B	C	D

SUBSCALES OF THE PRENATAL SELF-EVALUATION QUESTIONNAIRE

Relationship with Mother (RMO)

14. My mother shows interest in the coming baby.

20. My mother is happy about my pregnancy.

21. My mother offers helpful suggestions.

28. It's easy to talk to my mother about my problems.

31. My mother looks forward to this grandchild.

37. I feel good when I'm with my mother.

44. When we get together, my mother and I tend to argue.

55. My mother reassures me when I have doubts about myself.

59. My mother encourages me to do things in my own way.

65. My mother criticizes my decisions.

Relationship with Husband (RHU)

4. My husband and I talk about the coming baby.

5. My husband has been critical of me during the pregnancy.

10. My husband is understanding (calms me) when I get upset.

23. My husband is interested in discussing the pregnancy with me.

35. My husband helps me at home when I need it.

36. I find it hard to talk to my husband about any changes in sex drive during this pregnancy.

40. I can count on my husband's support in labor.

43. My husband feels I burden him with my feelings and problems.

60. I think my husband would say we have made a satisfactory sexual adjustment during this pregnancy.

70. I can count on my husband to share in the care of the baby.

Identification of Motherhood Role (IMORO)

2. I like to watch other parents and children together.

6. I feel that rearing children is rewarding.

19. I look forward to caring for the baby.

29. I have doubts about being a good mother.

33. I like having children around me.

34. It will be hard for me to balance child care with my other commitments and activities.

42. I feel that babies aren't much fun to care for.

45. It will be difficult for me to give enough attention to a baby.

46. I think the baby will be a burden to me.

50. I think about the kind of mother I want to be.

54. I am concerned that caring for a baby will leave me little time for myself.

67. I am worried that my baby may not like me.

73. I feel I already love the baby.

75. I believe I can be a good mother.

78. I feel I will enjoy the baby.

Acceptance of Pregnancy (ACCPR)

1. This is a good time for me to be pregnant.

3. I can tolerate the discomforts that I've had during pregnancy.

9. It's hard for me to get used to the changes brought about by pregnancy.

22. I have enjoyed this pregnancy.

32. I an glad I'm pregnant.

58. It's difficult for me to accept this pregnancy.

61. This has been an easy pregnancy so far.

62. I wish I wasn't having the baby now.

66. I'm having a problem adjusting to this pregnancy.

69. This pregnancy has been a source of frustration for me.

74. I have found this pregnancy gratifying.

75. I have regrets about being pregnant at this time.

77. I find many things about pregnancy disagreeable.

79. I am happy about this pregnancy.

Preparation for Labor (PREPL)

7. I feel it is necessary to know a lot about labor.

13. There is little I can do to prepare for labor.

24. I have a good idea of what to expect during labor and delivery.

25. I understand how to work with the contractions in labor.

26. I look forward to childbirth.

38. I am preparing myself to do well in labor.

47. I feel prepared for what happens in labor.

48. I know some things I can do to help myself in labor.

56. I feel well informed about labor.

72. I feel that childbirth is a natural, exciting event.

Well-being of Self and Baby (WELLB)

12. I think my labor and delivery will progress normally.

16. I am worried that the baby will be abnormal.

17. I think the worst whenever I get a pain.

30. I dwell on the problems the baby might have.

41. I am afraid that I will be harmed during delivery.

51. I am anxious about complications occurring in labor.

57. I am worried that something will go wrong during labor.

63. I worry that I will lose the baby in labor.

68. I focus on all the terrible things that could happen in labor.

71. I am confident of having a normal childbirth.

Help/Control (PHLC)

8. I can cope well with pain.

11. I can perform well under stress.

15. I have confidence in my ability to maintain composure in most situations.

18. Realizing that labor has to end will help me maintain control in labor.

29. I suspect the doctors and nurses will be indifferent to my concerns in labor.

39. I feel sure that I will lose control in labor.

49. When the time comes in labor, I'll be able to push even if it's painful.

52. I feel that the stress of labor will be too much for me to handle.

53. I think I can bear the discomfort of labor.

64. If I lose control in labor, it will be hard for me to regain it.

APPENDIX F

MATERNAL-FETAL ATTACHMENT SCALE

MATERNAL-FETAL ATTACHMENT SCALE

	Definitely Yes	Yes	Uncertain	No	Definitely No
1. I talk to my unborn baby.	____	____	____	____	____
2. I feel all the trouble of being pregnant is worth it.	____	____	____	____	____
3. I enjoy watching my tummy jiggle as the baby kicks inside.	____	____	____	____	____
4. I picture myself feeding the baby.	____	____	____	____	____
5. I'm really looking forward to seeing what the baby looks like.	____	____	____	____	____
6. I wonder if the baby feels cramped in there.	____	____	____	____	____
7. I refer to my baby by a nickname.	____	____	____	____	____
8. I imagine myself taking care of the baby.	____	____	____	____	____
9. I can almost guess what my baby's personality will be from the way s/he moves around.	____	____	____	____	____
10. I have decided on a name for a girl baby.	____	____	____	____	____
11. I do things to try to stay healthy that I would not do if I were not pregnant.	____	____	____	____	____
12. I wonder if the baby can hear inside of me.	____	____	____	____	____
13. I have decided on a name for a boy baby.	____	____	____	____	____
14. I wonder if the baby thinks and feels things inside of me.	____	____	____	____	____
15. I eat meat and vegetables to be sure my baby gets a good diet.	____	____	____	____	____
16. It seems my baby kicks and moves to tell me it's eating time.	____	____	____	____	____

	Definitely Yes	Yes	Uncertain	No	Definitely No
17. I poke the baby to get him/her to poke back.	_____	_____	_____	_____	_____
18. I can hardly wait to hold the baby.	_____	_____	_____	_____	_____
19. I try to picture what the baby will look like.	_____	_____	_____	_____	_____
20. I stroke my tummy to quiet the baby when there is too much kicking.	_____	_____	_____	_____	_____
21. I can tell that the baby has the hiccoughs.	_____	_____	_____	_____	_____
22. I feel my body is ugly.	_____	_____	_____	_____	_____
23. I give up doing certain things because I want to help my baby.	_____	_____	_____	_____	_____
24. I grasp my baby's foot through my tummy to move it around.	_____	_____	_____	_____	_____

APPENDIX G

THE GENERAL WELL-BEING SCHEDULE

GENERAL WELL-BEING SCHEDULE

Check only one box for each question. Do not leave any questions unanswered. Work quickly.

1. How have you been feeling in general? (during the past month)

1 ( ) In excellent spirits
2 ( ) In very good spirits
3 ( ) In good spirits mostly
4 ( ) I have ups and downs in spirits a lot
5 ( ) In low spirits mostly
6 ( ) In very low spirits mostly

2. Have you been bothered by nervousness or your "nerves"? (during the past month)

1 ( ) Extremely so - to the point where I could not work or take care of things
2 ( ) Very much so
3 ( ) Quite a bit
4 ( ) Some - enough to bother me
5 ( ) A little
6 ( ) Not at all

3. Have you been in firm control of your behavior, thoughts, emotions, or feelings? (during the past month)

1 ( ) Yes, definitely so
2 ( ) Yes, for the most part
3 ( ) Generally so
4 ( ) Not too well
5 ( ) No, and I am somewhat disturbed
6 ( ) No, and I am very disturbed

4. Have you felt so sad, discouraged, hopeless, or had so many problems that you wondered if anything was worthwhile? (during the past month)

1 ( ) Extremely so - to the point that I have just about given up
2 ( ) Very much so
3 ( ) Quite a bit
4 ( ) Some - enough to bother me
5 ( ) A little
6 ( ) Not at all

5. Have you been under or felt you were under any strain, stress, or pressure? (during the past month)

1 ( ) Yes, almost more than I could bear or stand
2 ( ) Yes, quite a bit of pressure
3 ( ) Yes, some - more than usual
4 ( ) Yes, some - but about usual
5 ( ) Yes, a little
6 ( ) Not at all

6. How happy, satisfied, or pleased have you been with your personal life? (during the past month)

1 ( ) Extremely happy - could not have been more satisfied or pleased
2 ( ) Very happy most of the time
3 ( ) Generally satisfied, pleased
4 ( ) Sometimes fairly happy, sometimes fairly unhappy
5 ( ) Generally dissatisfied, unhappy
6 ( ) Very dissatisfied or unhappy most or all of the time

7. Have you had any reason to wonder if you were losing your mind, or losing control over the way you act, talk, think, feel, or of your memory? (during the past month)

1 ( ) Not at all
2 ( ) Only a little
3 ( ) Some, but not enough to be concerned or worried about
4 ( ) Some, and I have been a little concerned
5 ( ) Some, and I am quite concerned
6 ( ) Yes, very much so, and I am very concerned

8. Have you been anxious, worried, or upset? (during the past month)

1 ( ) Extremely so - to the point of being sick or almost sick
2 ( ) Very much so
3 ( ) Quite a bit
4 ( ) Some - enough to bother me
5 ( ) A little
6 ( ) Not at all

9. Have you been waking up feeling fresh and rested? (during the past month)

1 ( ) None of the time
2 ( ) A little of the time
3 ( ) Some of the time
4 ( ) A good bit of the time
5 ( ) Most of the time
6 ( ) All of the time

10. How often were you bothered by any illness, bodily disorder, aches or pains? (during the past month)

1 ( ) Every day
2 ( ) Almost every day
3 ( ) About half the time
4 ( ) Now and then, but less than half the time
5 ( ) Rarely
6 ( ) None of the time

11. Has your daily life been full of things that were interesting to you? (during the past month)

1 ( ) All of the time
2 ( ) Most of the time
3 ( ) A good bit of the time
4 ( ) Some of the time
5 ( ) A little of the time
6 ( ) None of the time

12. Have you felt down-hearted and blue? (during the past month)

1 ( ) All of the time
2 ( ) Most of the time
3 ( ) A good bit of the time
4 ( ) Some of the time
5 ( ) A little of the time
6 ( ) None of the time

13. Have you been feeling emotionally stable and sure of yourself? (during the past month)

1 ( ) All of the time
2 ( ) Most of the time
3 ( ) A good bit of the time
4 ( ) Some of the time
5 ( ) A little of the time
6 ( ) None of the time

14. Have you felt tired, worn out, used-up, or exhausted? (during the past month)

1 ( ) All of the time
2 ( ) Most of the time
3 ( ) A good bit of the time
4 ( ) Some of the time
5 ( ) A little of the time
6 ( ) None of the time

15. Have you been concerned, worried, or had any fears about your health? (during the past month)

1 ( ) Extremely so
2 ( ) Very much so
3 ( ) Quite a bit
4 ( ) Some, but not a lot
5 ( ) Practically never
6 ( ) Not at all

16. Did you feel relaxed, at ease, or high strung, tight, or keyed up? (during the past month)

1 ( ) Felt relaxed and at ease the whole month
2 ( ) Felt relaxed and at ease most of the time
3 ( ) Generally felt relaxed but at times felt fairly high strung
4 ( ) Generally felt high strung but at times felt fairly relaxed
5 ( ) Felt high strung, tight, or keyed-up most of the time
6 ( ) Felt high strung, tight, or keyed-up the whole month

17. How much energy, pep, or vitality did you have or feel? (during the past month)

1 ( ) Very full of energy - lot of pep
2 ( ) Fairly energetic most of the time
3 ( ) My energy level varied quite a bit
4 ( ) Generally low in energy, pep
5 ( ) Very low in energy or pep most of the time
6 ( ) No energy or pep at all - I felt drained, sapped

18. Did you feel depressed? (during the past month)

1 ( ) Yes - to the point that I felt like taking my life
2 ( ) Yes - to the point that I did not care about anything
3 ( ) Yes - very depressed almost every day
4 ( ) Yes - quite depressed several times
5 ( ) Yes - a little depressed now and then
6 ( ) No - never felt depressed at all

19. Did you feel healthy enough to carry out the things you like to do or had to do? (during the past month)

1 ( ) Yes, definitely so
2 ( ) For the most part
3 ( ) Health problems limited me in some important ways
4 ( ) I was only healthy enough to take care of myself
5 ( ) I needed some help in taking care of myself
6 ( ) I needed someone to help me with most or all of the things I had to do

20. Were you generally tense or did you feel any tension? (during the past month)

1 ( ) Yes - extremely tense, most or all of the time
2 ( ) Yes - very tense most of the time
3 ( ) Not generally tense, but did feel fairly tense several times
4 ( ) I felt a little tense a few times
5 ( ) My general tension level was quite low
6 ( ) I never felt tense or any tension at all

21. Did you feel active, vigorous, or dull, sluggish? (during the past month)

1 ( ) Very active, vigorous every day
2 ( ) Mostly active, vigorous - never really dull, sluggish
3 ( ) Fairly active, vigorous - seldom dull, sluggish
4 ( ) Fairly dull, sluggish - seldom active, vigorous
5 ( ) Mostly dull, sluggish - never really active, vigorous
6 ( ) Very dull, sluggish every day

22. Have you felt cheerful, lighthearted? (during the past month)

1 ( ) None of the time
2 ( ) A little of the time
3 ( ) Some of the time
4 ( ) A good bit of the time
5 ( ) Most of the time
6 ( ) All of the time

APPENDIX H

SOCIAL SUPPORT QUESTIONNAIRE

SOCIAL SUPPORT QUESTIONNAIRE

PLEASE READ ALL DIRECTIONS ON THIS PAGE BEFORE STARTING.

Please list each significant person in your life on the right. Consider all the persons who provide personal support for you or who are important to you.

Use only first names or initials, and then indicate the relationship, as in the following example:

Example:

	First Name or Initials	Relationship
1.	MARY T.	FRIEND
2.	BOB	BROTHER
3.	M.T.	MOTHER
4.	SAM	FRIEND
5.	MRS. R.	NEIGHBOR

etc.

Use the following list to help you think of the people important to you, and list as many people as apply in your case.

- spouse or partner
- family members or relatives
- friends
- work or school associates
- neighbors
- health care providers
- counselor or therapist
- minister/priest/rabbi
- other

You do not have to use all 24 spaces. Use as many spaces as you have important persons in your life.

WHEN YOU HAVE FINISHED YOUR LIST, PLEASE TURN TO PAGE 2.

Number _____ [1-4]
Date _____

PERSONAL NETWORK

	First Name or Initials	Relationship	
1.			[32]
2.			[33]
3.			[34]
4.			[35]
5.			[36]
6.			[37]
7.			[38]
8.			[39]
9.			[40]
10.			[41]
11.			[42]
12.			[43]
13.			[44]
14.			[45]
15.			[46]
16.			[47]
17.			[48]
18.			[49]
19.			[50]
20.			[51]
21.			[52]
22.			[53]
23.			[54]
24.			[55]

[5-6]

For each person you listed, please answer the following questions by writing in the number that applies.

1 = not at all
2 = a little
3 = moderately
4 = quite a bit
5 = a great deal

Question 1:

How much does this person make you feel liked or loved?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[7-9]

Question 2:

How much does this person make you feel respected or admired?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[10-12]

GO ON TO NEXT PAGE

Number _____ [1-4]
Date _____

PERSONAL NETWORK

	First Name or Initials	Relationship	
1.	_____	_____	[32]
2.	_____	_____	[33]
3.	_____	_____	[34]
4.	_____	_____	[35]
5.	_____	_____	[36]
6.	_____	_____	[37]
7.	_____	_____	[38]
8.	_____	_____	[39]
9.	_____	_____	[40]
10.	_____	_____	[41]
11.	_____	_____	[42]
12.	_____	_____	[43]
13.	_____	_____	[44]
14.	_____	_____	[45]
15.	_____	_____	[46]
16.	_____	_____	[47]
17.	_____	_____	[48]
18.	_____	_____	[49]
19.	_____	_____	[50]
20.	_____	_____	[51]
21.	_____	_____	[52]
22.	_____	_____	[53]
23.	_____	_____	[54]
24.	_____	_____	[55]

[5-6]

1 = not at all
2 = a little
3 = moderately
4 = quite a bit
5 = a great deal

Question 3:

How much can you confide in this person?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[13-15]

Question 4:

How much does this person agree with or support your actions or thoughts?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

[16-18]

GO ON TO NEXT PAGE

Number _____ [1-4]
Date _____

PERSONAL NETWORK

	First Name or Initials	Relationship	
1.	_____	_____	[32]
2.	_____	_____	[33]
3.	_____	_____	[34]
4.	_____	_____	[35]
5.	_____	_____	[36]
6.	_____	_____	[37]
7.	_____	_____	[38]
8.	_____	_____	[39]
9.	_____	_____	[40]
10.	_____	_____	[41]
11.	_____	_____	[42]
12.	_____	_____	[43]
13.	_____	_____	[44]
14.	_____	_____	[45]
15.	_____	_____	[46]
16.	_____	_____	[47]
17.	_____	_____	[48]
18.	_____	_____	[49]
19.	_____	_____	[50]
20.	_____	_____	[51]
21.	_____	_____	[52]
22.	_____	_____	[53]
23.	_____	_____	[54]
24.	_____	_____	[55]

[5-6]

1 = not at all
2 = a little
3 = moderately
4 = quite a bit
5 = a great deal

Question 5:

If you needed to borrow $10, a ride to the doctor, or some other immediate help, how much could this person usually help?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

Question 6:

If you were confined to bed for several weeks, how much could this person help you?

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____

GO ON TO NEXT PAGE

Number _____ [1-4]
Date _____

PERSONAL NETWORK

	First Name or Initials	Relationship	
1.	_____	_____	[32]
2.	_____	_____	[33]
3.	_____	_____	[34]
4.	_____	_____	[35]
5.	_____	_____	[36]
6.	_____	_____	[37]
7.	_____	_____	[38]
8.	_____	_____	[39]
9.	_____	_____	[40]
10.	_____	_____	[41]
11.	_____	_____	[42]
12.	_____	_____	[43]
13.	_____	_____	[44]
14.	_____	_____	[45]
15.	_____	_____	[46]
16.	_____	_____	[47]
17.	_____	_____	[48]
18.	_____	_____	[49]
19.	_____	_____	[50]
20.	_____	_____	[51]
21.	_____	_____	[52]
22.	_____	_____	[53]
23.	_____	_____	[54]
24.	_____	_____	[55]

Number _____ [1-4]
Date _____

Question 7:

How long have you known this person?

1 = less than 6 months
2 = 6 to 12 months
3 = 1 to 2 years
4 = 2 to 5 years
5 = more than 5 years

Question 8:

How frequently do you usually have contact with this person? (Phone calls, visits, or letters)

5 = daily
4 = weekly
3 = monthly
2 = a few times a year
1 = once a year or less

PERSONAL NETWORK

	First Name or Initials	Relationship	
1.			[32]
2.			[33]
3.			[34]
4.			[35]
5.			[36]
6.			[37]
7.			[38]
8.			[39]
9.			[40]
10.			[41]
11.			[42]
12.			[43]
13.			[44]
14.			[45]
15.			[46]
16.			[47]
17.			[48]
18.			[49]
19.			[50]
20.			[51]
21.			[52]
22.			[53]
23.			[54]
24.			[55]

	Question 7	Question 8
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
21.		
22.		
23.		
24.		

[25-27]

PLEASE BE SURE YOU HAVE RATED EACH PERSON ON EVERY QUESTION. GO ON TO THE LAST PAGE

[28-30]

[56]

9. During the past year, have you lost any important relationships due to moving, a job change, divorce or separation, death, or some other reason? [57]

_____ 0. No
_____ 1. Yes

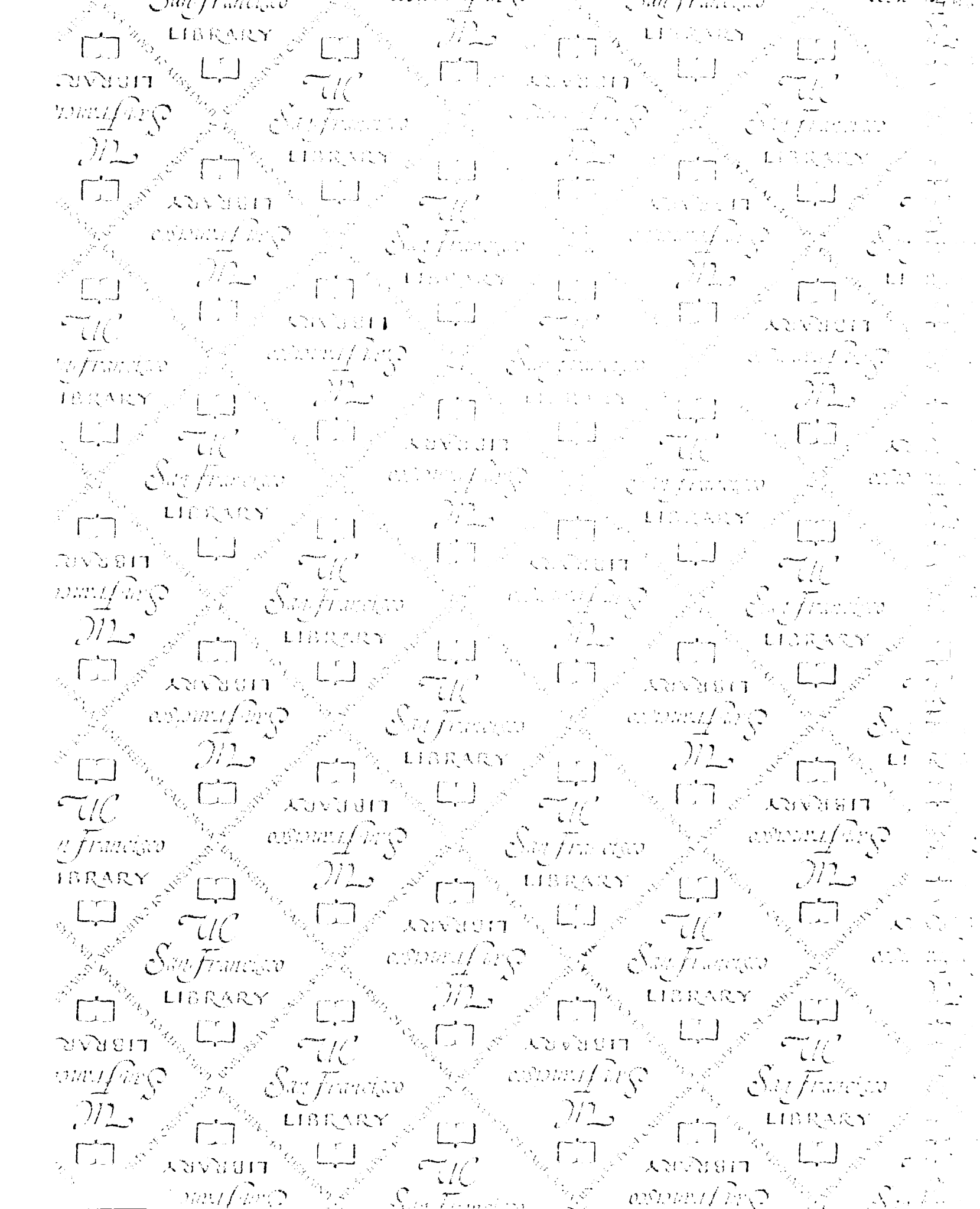
IF YES:

9a. Please indicate the number of persons from each category who are *no longer available* to you.

_____ spouse or partner [58]
_____ family members or relatives [59-60]
_____ friends [61-62]
_____ work or school associates [63-64]
_____ neighbors [65-66]
_____ health care providers [67]
_____ counselor or therapist [68]
_____ minister/priest/rabbi [69]
_____ other (specify) _____ [70] [71-72]

9b. Overall, how much of your support was provided by these people who are no longer available to you? [73]

_____ 0. none at all
_____ 1. a little
_____ 2. a moderate amount
_____ 3. quite a bit
_____ 4. a great deal


San Francisco
LIBRARY