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Prenatal Maternal Attachment: The Lived Experience

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PRENATAL MATERNAL ATTACHMENT: THE LIVED EXPERIENCE

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ABSTRACT

Prenatal maternal attachment and the practice of health promoting behaviors during pregnancy are considered universal phenomena to women. Yet, the understanding of these phenomena from the lived experiences of pregnant women has not been well researched. The purpose of this phenomenological study was to describe the experience of maternal attachment to the unborn child and how that attachment might relate to the practice of these behaviors during pregnancy. The participants in this study were ten English speaking women, college educated, professionally employed, who were pregnant for the first time.

Unstructured interviews were conducted with the participants at 14-16 weeks and at 26-28 weeks gestation. The data was analyzed using procedural steps of the phenomenological method.

The themes that emerged through data analysis were: awareness of a life-changing event, experiencing a mixture of feelings, being protective, imaging a new life, being connected to this growing life, experiencing the reality of the life within, creating a dream or fantasy, and anticipating the birth.

The awareness that this pregnancy would change their lives created a mixture of feelings. From the moments

after their pregnancies were confirmed, these women embraced the awareness of the life inside of them and began to practice health-promoting behaviors that provided a certain reassurance for a healthy outcome.

They were able to image the growing fetus through their changing body features, in addition to feeling a strong physical connectedness to this new life. Feeling the first fetal movements about 20 weeks gestation, confirmed the reality of this life within them. Dreaming and fantasizing occurred as more mental images of the baby were created, which encouraged these women to begin anticipating the birth while continuing to focus on a healthy outcome.

The findings in this study shed new light on the phenomenon of prenatal maternal attachment and suggest that health-promoting behaviors may be an integral piece of the process of developing maternal attachment. Since promoting the health of the mother and fetus is a focus of the nursing role, further research about health teaching to foster these behaviors needs to be generated.

THIS DISSERTATION IS

DEDICATED TO

MY PARENTS

Ronald and Barbara Leva

The gift of the pelican that I wear so proudly
Has signified your love, support, and encouragement,
Which has given me the strength and endurance
To strive beyond what I thought was possible.
Your belief in me has given me the perseverance
To achieve my dreams and to become the person that I am.

You have truly been the wind beneath my wings.
I love you always

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Table of Contents

Page

Appendices

Chapter I: Focus of the Study

The richness and splendor of an individual's life is magnified by unique relationships with a small number of persons. These relationships, or bonds, between two people exist and endure through times of pleasure and heartache. The daily experiences of living that shape one's being revolves around those relationships - establishing them, breaking them, and adjusting to their loss caused by death (Klaus and Kennell, 1976).

The strongest of all human relationships is considered to be between a mother and her child. This relationship is known to persist during long separations of time and distance. A call for help even after many years of separation will bring a mother to her child and will foster behaviors equal in strength to those in the first year of life. This original mother-infant tie is considered the major source for all the infant's subsequent ties and is the formative relationship whereby the child develops a sense of self. Throughout life, the strength and character of this bond will influence the quality of all future ties to other individuals (Klaus & Kennell, 1976).

The essence of the maternal-child relationship was popularized in the 1970's as researchers studied the patterns of mothers' interactions with their newborns during

the initial postpartum period. This interaction immediately after birth became known as bonding, and was characterized by certain maternal behaviors called bonding behaviors that mothers exhibited for their newborns The bonding behaviors included gazing, fingertip touching, kissing, cuddling, and speaking in soft tones (Klaus & Kennell, 1976). These bonding behaviors were theorized to characterize the development of maternal identity which includes the participation in the care-taking skills by the mother that satisfy the basic physiological needs of the infant, as well as the establishment of a mutuality between the mother and newborn (Rubin, 1984).

Based upon this research, nurses have been educated to focus on the presence of these bonding behaviors in their care of postpartum mothers as a way to identify those who might be at risk for alterations in parenting behaviors such as neglect or abuse. Since Klaus and Kennell's research (1976), a substantial amount of literature has focused on outcomes of abuse and violence toward children. These are devastating problems that our nation continues to face.

The emphasis of inquiry, however, about the nature of human relationships has more recently focused on a process called attachment beginning during the prenatal period. This aspect of the maternal-child relationship emerged in the literature in the late 1970's, and suggested that the early development of the mother-child relationship actually begins with a process called attachment between the woman

and fetus before birth (Rubin, 1977, Leifer, 1977, Deutsch, 1945).

For approximately the last five to six months of the pregnancy the woman has had an intellectual awareness of the reality of her child, as well as, a physical awareness through fetal growth and various intrauterine movements. Behaviors and attitudes of an affective or emotional nature toward the unborn child have been demonstrated to exist in women during the prenatal period (Leifer, 1977). For example, talking to the fetus, and calling the fetus by a pet name, has been described as attachment behaviors that form an essential part of the prenatal relationship. This attachment experienced by the woman, both biologically and psychosocially during pregnancy has been called maternal-fetal attachment and more commonly prenatal maternal attachment. At birth the mother experiences qualitative changes in this attachment with her newborn that reflect a continuation and further development of this process begun several months earlier (Rubin, 1977).

The gestational period is also a dynamic developmental process for the woman, as she becomes a mother (Cranley, 1981). During the first stage of pregnancy, a woman must come to terms with the knowledge that she will be a mother. A number of considerations such as economic concerns, role relationships between mother, daughter, husband and wife, and preparing for the birth all influence her acceptance of the pregnancy. This initial stage, as outlined by Bibring

and associates (1961) is the mother's identification of the growing fetus as an "integral part of herself."

The second developmental stage involves a growing awareness of the baby in the uterus as a separate individual that usually starts with the sensation of fetal movement called quickening. During this period, the woman must begin to change her concept of the fetus from a being that is part of herself to a living baby who will soon be a separate individual. Bibring and associates (1961) believe that this realization prepares the woman for birth and physical separation from her child. This preparedness in turn lays the foundation for a relationship with her child.

Prenatal maternal attachment has been recognized for many years as a potent human experience influencing the affectional tie between the mother and infant (Deutsch, 1945, Leifer, 1977). This attachment, theorized to begin during pregnancy, represents a crucial developmental task for the pregnant woman.

Pregnancy, as a maturational crisis, can be a stressful time for the woman. Her self-concept must change in readiness for parenthood as the dynamic interaction between intrapsychic and biologic processes cause her to reassess her self-image, beliefs, values, priorities, behavior patterns, relationships with others, and problem-solving skills (Lederman, 1984).

During pregnancy, a woman initially becomes attached to the idea of being pregnant and then gradually "binds-in" or

develops an attachment for the individual inside her. This "binding-in" is an active process occurring in progressive stages over a period of 12 to 15 months. This process has been described as a psychological and a biological interdependent reciprocity or symbiosis between the mother and child during the gestational period (Rubin, 1977).

Since the concept of prenatal maternal attachment was popularized in the nursing literature in the early 1980's, it has been largely studied from a quantitative perspective, using the Maternal Fetal Attachment Scale (MFAS) developed by Cranley (1981). More recently, Muller (1990) developed the Prenatal Attachment Inventory (PAI), not only to increase the knowledge base about prenatal attachment, but in response to inconsistent measurement of variables and comparison of findings across a multitude of studies using the MFAS.

Interestingly, though, with all the research that supports the critical nature of this human experience during the antepartum period, the concept of prenatal maternal attachment has not emerged in the care of patients with the same intensity and value as postnatal attachment. Most physicians and nurses have not been educated to examine the nature and meaning of this prenatal relationship during their interactions with these women on a daily basis. With the majority of pregnant women continuing to seek prenatal care in the traditional medical arena, they are not routinely asked about their feelings toward the unborn

child, nor are their behaviors assessed in this regard, as well.

It has long been recognized that women generally demonstrate behaviors during pregnancy to ensure safe passage through the gestation, labor, and birth. For example, medical and nursing care is sought to expertly guide the course of the pregnancy from a biological and psychosocial perspective. Knowledge is sought from various types of literature, as well as from discussions with others who are pregnant or have borne children in order to gain a sense of control over a rapidly changing experience. Self-care activities change regarding diet, exercise, rest, responsibilities of work, and perceptions of environmental threats in order to maintain personal health and stability of the developing child. All these behaviors can be categorized as self health-promoting and are generally accepted and practiced by pregnant women. These behaviors are greatly encouraged, not only by health care providers, but by support persons as well in order to provide reassurance for a positive outcome. Nevertheless, what does the practice of these behaviors signify? Is the desire for a safe pregnancy and the birth of a healthy child linked to the process of attachment through the practice of these self health-promoting behaviors?

On the other hand, there are women who choose to participate in health-reducing behaviors such as smoking, abuse of drugs and alcohol, and poor nutrition during their

pregnancies. Certainly, these practices are not socially or medically accepted to promote the health of the mother or fetus during this critical period of growth and maturation. Nevertheless, what does the unsafe practice of these behaviors signify? How might these health-reducing behaviors be linked to the process of attachment for these women?

The prenatal period seems a most opportune time for assessment of prenatal attachment just by the nature of the duration of the gestational period and the many interactions health care providers have with the woman over this period. It is very apparent that postpartum recovery and discharge have become processes lasting only a few hours for the majority of hospitalized mothers and newborns, and yet, nursing assessment and documentation of the attachment process has in the past, and currently, occurs primarily after birth.

The process by which a woman attaches to the growing fetus inside her must be recognized as an individual lived experience that develops over time with the essence of that relationship residing within the woman in the form of emotions, values, and behaviors. The qualitative aspects of prenatal maternal attachment have not been fully explored from the perspective of the individual lived experience. Data from this perspective would increase not only nursing's understanding of the meaning of attachment, but also how this process interfaces with other behaviors practiced

during pregnancy that have the potential to affect the health of the mother and fetus, as well.

Lines of Inquiry

The purpose of this research study was to describe the process of prenatal maternal attachment in a selected group of women who were experiencing pregnancy for the first time. Lines of inquiry generated from the purpose of this research were:

1. How did women describe the attachment that developed to their unborn child?

2. How did this attachment change during the pregnancy?

3. How did this attachment affect their self health-promoting or health-reducing behaviors practiced during pregnancy?

Method

The phenomenological method of inquiry was selected for this study. The lived experience of the world of everyday life is the central focus of the phenomenological method. Schutz (1970) described the world of everyday life as the "total sphere of experiences of an individual which is circumscribed by the objects, persons, and events encountered by the pursuit of the pragmatic objectives of living." In simpler terms, phenomenology is the lived experience of the individual that presents what is true or real in life.

Phenomenological philosophy, as a school of thought and as a method, has been largely attributed to the works of the German philosopher, Edmund Husserl (1965). His educational foundations and investigations in philosophy, mathematics, science, and metaphysics generated a philosophical interest in uniting a psychological analysis of consciousness with a philosophical grounding of formal mathematics. He believed that the truths of mathematics have validity regardless of the way people come to discover and believe in them.

Husserl (1965) noted that consciousness is always directed toward something. He called this "directedness intentionality" and argued that consciousness contains ideal, unchanging structures, called meanings, which determine what object the mind is directed toward at any given time.

Husserl (1965) designated this method of conscious analysis as "phenomenological", that is, the analysis of reality as it immediately presents itself to consciousness. Husserl (1965) drafted the outline of phenomenology as a universal philosophical science. The fundamental methodological principle underlying this philosophical science is known as "phenomenological reduction." This principle focuses the philosopher's attention on un-interpreted basic experience and the quest for the essence of things. He contended that the philosopher's task is to contemplate the essences of things, and that essence of an object can be arrived at by systematically varying that

object in the imagination. In other words, phenomenological reduction is the reflection on the meaning that the mind employs when it contemplates an object.

Because this method concentrates on meanings that are in the mind, whether or not the object present to consciousness actually exists, Husserl (1965) said the method involves "bracketing existences", which means setting aside the question of the real existence of the contemplated object. According to Husserl (1965), phenomenology is devoted, not to inventing theories, but rather to describing the "things themselves."

The primary source of data collection using the phenomenological approach in this study was the voices of the persons experiencing the phenomenon. The conscious awareness of the phenomenon under investigation was derived from the personal lived experiences of pregnant women and the development of their attachment to their unborn children. This particular method focused on the individual as the unit of analysis to provide the richest and most valuable qualitative data regarding this human experience.

Assumptions

Phenomenology requires the researcher to critically examine assumptions and biases in order to identify and bracket them so that the researcher may view the phenomenon under investigation in its purest form. Several assumptions for this research were identified before this study began.

The experience of pregnancy is socially accepted as a very positive and rewarding experience for women, in general. The idea that a woman will be able to birth a child, who represents a part of herself, represents a normal developmental experience for women, in terms of their biological capabilities for reproduction. It is assumed that experiencing pregnancy represents, for most, a sense of fulfillment and completeness as a woman, which is viewed as a very satisfying experience. Consider, though, the women for whom pregnancy is not perceived as that positive experience. Consider the women for whom pregnancy is not part of the developmental process that they would choose for themselves. What meaning might be generated from a negative pregnancy experience and how might that experience connect to the attachment process?

Inherent to this perception that pregnancy is perceived as a positive experience for most women, is that the attachment process during the prenatal period is assumed to be a universal phenomenon among pregnant women. Empirical data has supported theoretical notions that women develop a relationship with the unborn child, which has been highlighted by the occurrence of fetal movement in the second trimester of the pregnancy. This relationship is unique in its existence and has been identified as the beginning of the relationship that continues beyond the birth of the baby. Given that this experience is a unique one, not all women may be able to experience this

phenomenon. What meaning will be generated by those women who may not able to demonstrate this attachment experience?

The attachment that a woman feels for her unborn child is a very intimate and personal experience for the pregnant woman. There are theories that explain attachment, which has contributed to our understanding of this phenomenon, but these theories have not been able to create a wholeness of that experience. Captivated largely by an emotional affiliation, it is assumed that women will be comfortable in expressing these emotions as they are living through the experience. Will words be able to give meaning to the perceptions of these women as they explain what it is like to be living this experience of pregnancy? Will new meaning and wholeness be found from these original experiences of women?

Having lived the experience of pregnancy twice and working in this area of nursing for over 20 years, it is assumed by the investigator that women are encouraged to seek a healthy lifestyle during pregnancy to provide the best environment for the fetus to grow and mature. The changes that women are expected to make are, for the most part, physiological in nature, as their bodies are seen as one with the growing fetus. Consider those women, though, who do not practice this healthy lifestyle, who choose to deviate from these behaviors. What is being taken away from the experience of pregnancy by not practicing these health-promoting behaviors?

Discussing another woman's pregnancy experience somehow generates personal thoughts from the past, a sort of re-living or re-enactment of a very positive experience for this researcher. This re-account of the past is a common phenomenon among many women as they are able to vividly talk about their pregnancy experiences as if it occurred just yesterday. It is an experience, no matter how long ago, one never forgets. It is an experience, though, that belongs to the individual. Putting aside personal experiences as the participants' stories were being told was necessary as it allowed for the richness of their data to be recognized

Significance of the Study

For several decades, health care professionals, psychologists, and sociologists directed their research about the nature of human relationships and` focused on negative outcomes such as child abuse, neglect, and other forms of violence. These researchers were looking from a frame of reference of cause and effect, which implied that if negative human relationships existed, negative outcomes would persist with grave consequences. This perspective primarily occurred because the human relationship was conceptualized as beginning from the point of birth and the not the point of conception.

Nevertheless, research has theorized a phenomenon far greater, and that is, that this most potent human experience begins before this life exists outside the human body. This experience for the most part is considered to be universal

to most women, and yet, the phenomenon has not been well researched from the perspective of women actually living the experience during pregnancy.

The abundance of nursing research about prenatal maternal attachment is dated and limited to the extent that this experience was studied primarily from a quantitative perspective. The focus of the studies that appeared in the literature in the 1980's was not about the developing process of this phenomenon, but rather, how it was influenced by such factors as age, social support, anxiety, and high-risk pregnancies. The findings in those studies certainly increased nursing's knowledge base about prenatal maternal attachment and sparked other research endeavors concerning this phenomenon to continue. However, the data about attachment revealed in many of those studies, has not conveyed the affective component of this phenomenon that explains this experience as a process lived through pregnancy.

Despite the research findings that do exist regarding prenatal maternal attachment, little data about this phenomenon has been written about in the popular literature to educate the general public, and little in the professional literature to educate nurses and physicians. In clinical practice, too, attention to this phenomenon has not occurred with the intensity that it seemingly deserves, despite the theory that explains it as being one of life's most potent experiences. The descriptions of the emotional

and psychological aspects of the reproductive period continue to focus strongly on the postnatal period as the primary experience for developing life-long attachment.

Pregnancy is a dynamic period saturated with an overwhelming abundance of emotional and physical changes for the woman. Captivating the emotional and affective realities of the pregnancy period is certainly a significant factor in this study as these realities are heard from the voices of the women telling their stories. From a physical standpoint, the expectation for a healthy pregnancy is that she will adjust her behaviors to support the developing fetus in order to provide a certain reassurance for a positive outcome. These accommodations are universally accepted and practiced by most pregnant women as self health-promoting, but at the same time, there are women who choose to participate in health-reducing behaviors, such as smoking or use of drugs and alcohol. There is a lack of research that examines how these behaviors are linked to the process of attachment. This study investigates that link, as the knowledge about this connection has the potential to significantly influence the promotion of these behaviors through appropriate health teaching.

What is significant in this study is that women described their own stories about a very delicate process during the prenatal period, using their words which best reflected a very personal experience. Their accounts were their own; they did not have to fit the descriptions of

experiences and feelings titled by others through instrumentation. There is no richer data that can be presented as the researcher was linked into the emotions and thoughts as these women unveiled their stories of their pregnancies. The data obtained from these stories can only build strength to what is already known about this prenatal phenomenon and spark continued research that will have the potential to impact nursing education and practice in the future.

Chapter II: Review of the Literature

A review of the literature reveals an abundance of research about the concept of attachment from many different perspectives. From the 1950's to the present, investigators from a variety of disciplines have studied attachment ethnographically, psychoanalytically, and quantitatively in human and animal species. For example, Bowlby (1958), the pioneer of attachment theory, described attachment as being a process whereby the child develops a tie to his mother, not the tie from mother to child.

Attachment, as defined in Webster's Dictionary is the "state of bringing oneself into an association or being bound; or to bind by personal ties as of affection or sympathy. This definition and the manner in which attachment is referred to in the literature is quite different from that discussed by Bowlby. Overwhelmingly, the literature discusses the process of attachment as the beginning of a lifelong relationship that accentuates a tie from mother to child.

Prenatal and postnatal maternal attachment are two components of the construct that have been popularized somewhat more recently, especially in the nursing literature (Cranley, 1981, 1984). These aspects of attachment have focused on the processes surrounding the developmental

features from the perspective of a mother's tie to the fetus/child. It is apparent that the concept of attachment during pregnancy has evolved over the years as researchers have learned more about the nature of human relationships.

However, the empirical research describing this phenomenon of prenatal maternal attachment is dated with the majority of studies spanning the mid 1980's and early 1990's. What seemingly explains this dated research is the popularization of the concept of attachment in the mid 1980's as health care institutions were reorganizing the delivery of postnatal care to meet the demands and expectations of parents. This reorganization of care for woman and their babies in the hospital environment centered around the premise of fostering the attachment between the mother and her baby that was theorized to begin months earlier in the pregnancy. With the findings that were elicited from the quantitative research on prenatal maternal attachment by Cranley (1984) and others, and what was already known about maternal bonding by Klaus and Kennell(1970), health care agencies allowed mothers to keep their babies by the bedside for the entirety of the postpartum period. This delivery of postpartum care is universally common today in hospitals with obstetrical units. However, once this delivery of care was implemented over time and became the standard of care in institutions, the fervor of the topic of maternal attachment appeared to taper off.

What was important in this study was to review how the concept of attachment has evolved over the years through an analysis of the literature. This analysis focused on the theoretical framework of attachment theory, and the postnatal and prenatal perspectives of inquiry. It is this review and analysis that provided the basis and direction for this investigation.

Attachment Theory

The framework of attachment theory was formulated through an exploration of psychoanalytical literature regarding the origin and nature of the child's tie to his mother (Bowlby, 1958). Psychoanalysts are united in their recognition that the child's first object relation is the foundation stone of his personality. The child's tie to his mother was postulated to be a product of the activity of a number of behavioral systems that have proximity to the mother as a predictable outcome. The behavioral systems forming the child's tie to his mother were described to develop within the infant generally within the first 12 months of life because of his interaction with the principle figure in that environment, namely his mother.

Bowlby (1958) summarized four views of attachment theory found in the psychoanalytical and psychological literature. This first view of attachment theory is called the Theory of Secondary Drive. The term secondary used here refers to a response that is regarded as acquired through the process of learning. Bowlby (1958) explained that the

child has a number of physiological needs, which must be met, particularly for food and warmth, but no social needs. A baby becomes interested and attached to a human figure, especially the mother because of the mother's satisfaction of the infant's physiological needs and the infant's learning that she is the source of his gratification.

Bowlby referred to the second view of attachment as the Theory of Primary Object Sucking. The term primary used here refers to a response regarded as built in or inherited. Bowlby (1958) described that infants have an inborn need to relate themselves to a human breast, to suck it, and to possess it orally. The infant learns that attached to the breast is a mother and as a result relates to her.

Bowlby (1958) termed the third view of attachment theory as the Theory of Primary Object Clinging. Infants have an inborn need to be in touch with and to cling to a human being. In this sense, there is a need for an object independent of food, which is as primary as the need for food and warmth.

The fourth view of attachment theory described by Bowlby (1958) is called the Theory of Primary Return-to-Womb Craving. In this particular theory, Bowlby (1958) explained that infants resent their extrusion from the womb and seek to return there.

Bowlby (1958) hypothesized that the child's tie to his mother was more accurately explained through an incorporation of the theories he called Primary Object

Sucking and Primary Object Clinging. He postulated that the attachment behavior readily observed in a baby 12 months of age is made up of a number of instinctual responses, which at first are relatively independent of one another. These instinctual responses develop and mature at different rates and times during the first year of life, and function to bind the child to the mother while contributing to the reciprocal dynamic binding of mother to child.

Bowlby (1958) identified these instinctual behaviors as: sucking, clinging, and following, in all of which the baby is the principal active partner; and crying and smiling in which his behavior serves to activate maternal behavior. When Bowlby (1958) used the term following he meant the tendency not to let the mother figure out of sight or earshot, which is readily observed in human infants during the latter half of their first year and throughout their second and third years of life. Whereas sucking is closely related to food intake as well as crying to an extent, the behaviors of clinging, smiling, and following are non-oral in character and not directly related to food. In the normal course of development, the child becomes integrated and focused on a single mother figure; this process forms the basis of what Bowlby (1958) termed attachment behavior.

Postnatal Maternal Attachment

Historically, many of the studies of the biological basis of maternal attachment utilized an ethnographic approach through observations of animal behaviors during

separation of mother and infant immediately after birth. Collias (1956) and Rheingold (1963) demonstrated in certain animals such as the goat, cow, and sheep, that separation of the mother and infant immediately after birth for a period of one to four hours often resulted in aberrant mothering behaviors such as failure of the mother to care for her young. Butting of her offspring and feeding them indiscriminately were other noted behaviors in these animals.

In contrast, the same studies found if the mother and infant were together for the first four days after birth and then separated on the fifth day for an equal period of time, the mother resumed protective mothering characteristics for her young when the pair was reunited. Both investigators concluded that there was a special period immediately after delivery during which the animal mothers must interact for optimal development of affectional ties.

Ethnographic studies of animal species behaviors at the time of birth generated theorizing that perhaps humans also demonstrated behaviors, which could have lasting effects on the relationship between mother and baby. Klaus and Kennell (1970) popularized the theory of human maternal infant attachment, referring to the concept as maternal infant bonding. The concept of bonding was defined as a unique relationship between two people specific and enduring through time. Although the terms bonding and attachment were used interchangeably in their writings, Klaus and

Kennell (1970) confirmed by general consensus that bonding is a tie from parent to infant. The mother's attachment to her child was described as perhaps the strongest human bond, persisting during long separations of time and distance.

Postnatal maternal attachment research. To explore and examine maternal behavior in human mothers at the first postnatal contact with their newborns, Klaus and researchers (1970) recorded the behavior in 12 mothers 1/2 to 13 1/2 hours following delivery with their normal full term infants. These infants were undressed beside them. The behavior in 9 other mothers was also recorded during their first three tactile contacts with their premature infants (weighing 1,150 to 1870 grams) in an incubator.

A time-lapsed camera used to film the interactions of the full term mothers was placed 8 to 10 feet from their beds, either in the delivery room, a recovery room, or a room on the maternity area. The mother's bed was flat and the top of the infant's head was placed at the level of the shoulders approximately 6 to 8 inches from the mother. The mothers of the pre-term infants were filmed with the camera placed inconspicuously outside the glass wall of the nursery.

The time-lapse camera took a picture every second. Every fifth frame of the first 10 minutes of a 15-minute film was analyzed in detail, and the mother's comments were recorded on audiotape. The activities recorded from the film were the movements of the infant, position of the

mother's fingertips and palms on the trunk or extremities of the infant, the amount of time she was smiling, and the amount of time either physically supporting or encompassing the infant. For the mother's of premature infants, only the proximity of their heads to the incubator and the amount of time spent with their hands inside the portholes was recorded.

Behavior was considered "encompassing" if the mother enclosed either the trunk or head of her infant with her entire hand. Interest in the eyes of the infants was measured from the amount of verbalizations on the audiotape and from the time the mothers spent in the "en face" position in which the mother's face was rotated so that her lips and those of the infant met fully in the same vertical plane of rotation.

An orderly progression of behavior was observed in mothers of full term infants. The mothers started with fingertip touch on the infant's extremities and proceeded in 4 to 8 minutes to massaging, encompassing palm contact on the trunk. In the first 3 minutes fingertip contact was 52%, with 28% palm contact. In the last 3 minutes of observations, fingertip contact decreased to 26% and palm contact increased to 62%. Mothers of normal premature infants permitted to touch them in the first 3 to 5 days of life followed a similar sequence, but at a much slower rate. These differences in maternal responses were explained by the fragileness of the pre-term infant, the little care

taking responsibilities, the lack of experience with an incubator, and the strangeness of the pre-term nursery.

From the research an identifiable set of maternal behaviors was identified which was termed bonding behaviors. These behaviors exhibited by mothers during the early period after birth included fondling, kissing, gazing, and eye to eye contact.

Klaus and Kennell (1970) also identified that early contact with the newborn during the first minutes and hours of life was a major influential factor in human maternal-infant bonding. It was theorized that perhaps the maternal-infant interaction was dependent upon a sensitive period during which time the two needed to interact. Separation during this period was thought to detract from the optimal development of affectional ties between mother and infant as was found in earlier studies of animal behaviors previously cited. These researchers suggested that the bonding behaviors of kissing, cuddling, and prolonged gazing must occur in the early postnatal period if the future-mothering role was to be normal.

Empirical research has supported the presence of a sensitive period immediately after birth. Klaus and Kennell (1972) found that mothers with early contact with their infants demonstrated more bonding behaviors than those without this early contact. Mothers given skin-to-skin contact with their infants immediately after birth showed greater maternal bonding behaviors at 30 hours postpartum

than by mothers in a control group who did not have the contact immediately after delivery. The significance of the sensitive period of the maternal-infant bond has been emphasized in the literature in studies which suggested that early, unsupportive separation of mothers from their infants interfered with the development of normal parenting skills, attitudes, and relationships possibly leading to child neglect and/or abuse (Klaus and Kennell, 1972).

In addition to these studies, Klaus and Kennell (1972) investigated whether hospital practices at the time might affect later maternal behavior. Twenty-eight primiparous women were placed in two study groups shortly after delivery of normal full term infants. Only mothers who intended to keep their infants and to bottle-feed them were candidates for the study. Fourteen mothers in the control group had the usual physical contact with their infants which was a glimpse of the baby shortly after birth, brief contact and identification at six to 12 hours, and then visits for 20 to 30 minutes every four hours for bottle feedings. In addition to this routine contact, the 14 mothers in the extended-contact group were given their nude babies, with a heat panel overhead, for one hour within the first three hours after birth, and five extra hours of contact each afternoon of the three days after delivery.

Maternal behavior was measured 28 to 32 days later during a standardized interview, an examination of the baby, and a filmed bottle-feeding. Mothers who had extended

contact with their newborns were more reluctant to leave their infants with someone else, usually stood and watched during the baby examination, showed greater soothing behavior, and engaged in significantly more eye to eye contact and fondling. This particular study suggested that simple modification of care shortly after delivery might alter subsequent maternal behavior.

Since these initial studies that took place in the 1970's, Klaus and Kennell (1998) summarized findings of other physiologic and behavioral research endeavors over the last several years that have added new information to the mother and infant's early moments together. One of the most interesting behaviors to note, is that if the newborn is left quietly on the mother's abdomen after birth, the infant demonstrates the ability to crawl gradually up to her breast, find the nipple, and start to suck. This behavior generally occurs over a 60 minute period and appears to be guided by the odor of the breast.

This behavior was noted in one group of mothers whose babies were not taken away from them for the routine newborn medication administration and bath. These mothers also received no pain medication, either. Interestingly, 15 of the 16 newborns were observed to gradually make their own way to their mother's breast an begin to suck effectively.

In other observations it was noted by Swedish researchers (1992) that when the normal infant was dried and placed skin to skin on the mother's chest and then covered

with a blanket, the newborn maintained body temperature as well as being placed under the traditional heat source used in the newborn nursery. These same researchers found that if the newborn was allowed to maintain the skin-to-skin contact with the mother for the first 90 minutes after birth, they cried much less when compared to infants who were dried, wrapped in a towel, and placed in a bassinette.

Critique of postnatal attachment research. Klaus and Kennell's (1970, 1972) pioneering ethnographic research of attachment from the postpartum perspective studied the one aspect of this process that was known at the time; that bond between the mother and child after birth. Though their research occurred through behavioral observations, and not a qualitative investigation of the mother's perceptions about her infant, their observations about the maternal-infant bond were certainly valid.

Their research, and that of others, significantly changed the delivery of care to mothers and newborns immediately after delivery and during the postpartum period. Prior to their investigations, and even for sometime afterward, newborns were separated from their mothers soon after birth, and for the majority of the postpartum stay which averaged 2-3 days for a non-surgical delivery. Their newborns were placed in a nursery, where they were carefully observed by nurses, who were trained in newborn care. The infants were brought to their mothers primarily for feedings and changing. During hours of visitation, the newborns were

securely placed in their bassinets and lined up in the nursery window for viewing by family and friends. In general, newborns had no contact with family members other than the mother, and even that was quite limited.

In response to the research signifying the critical nature of the maternal infant bond, postpartum routines began to change to support the maternal-newborn relationship. Maternal newborn care definitely became more family centered. Newborns were allowed to be held longer in delivery suites, skin-to-skin contact was allowed to occur if the mother desired, breast-feeding was encouraged sooner after birth, and the traditional nursery was modified as a transitional environment for immediate newborn stabilization. In fact, mothers and newborns were termed "couplets" and for the most part "rooming-in" became the trend whereby newborns spent most of their initial life at the mothers' bedside. Nurses were cross-trained to care for both mothers and babies. Visitation of family members was less restrictive and soon postpartum hospitalization became shorter. Certainly, changing health care economics, insurance companies, and the administrative units of hospitals had an impact in the way perinatal services changed, but it was the early research findings about postpartum attachment that promoted this family centered approach to maternal and newborn care.

Prenatal Maternal Attachment

Developmental theory recognizes growth responsibilities of which successful achievement leads to satisfaction and success with later tasks. Pregnancy, a time of growth responsibility, is a period when a woman literally begins to share her body with another being, producing profound changes in the way she views herself and her future relationship with her offspring (Rubin, 1977).

Pregnancy is also a developmental step in the life of the expectant woman characterized by increased need for closeness, reciprocity, and growing together with the unborn child. This gestational experience represents an emotional affiliation between the mother and child whereby the maternal conceptualization of her infant as well as the biological accommodations in physical functioning support the developmental progress in maternal identity (Rubin, 1984, Penticuff, 1982).

Over the past 20 years, researchers have been looking at the origin of the attachment process from a perspective that focused on the prenatal period. Rubin (1977) used the term "binding-in" to describe attachment as an active, intermittent, and accumulative process occurring in progressive stages over a period of 12 to 15 months beginning during the gestational period. She described the initial stimulus to maternal binding-in as a physical one - the internal, enteroreceptive stimulus of fetal movement that produces an awareness of another. Various fetal

movements, growth in size and weight, idiosyncrasies of the fetus' behavior in response to hers, and her accommodative changes in activities and preferences serve to create a psychosocial and biological interdependent reciprocity, or symbiosis between the mother and child during pregnancy.

Leifer (1977) suggested that this psychological symbiosis is demonstrated by a variety of activities that heighten the reality of the baby and preparedness for motherhood. Early in the gestational period conversations about the child and his future and choosing a name for the baby seem particularly important in establishing the identity of the baby. For most women, the turning point in the development of their attachment to the fetus occurs shortly after the first fetal movements in the second trimester of the pregnancy. This experience marks a new awareness of the fetus as a separate entity apart from herself.

As the pregnancy progresses, fetal movements initiate behaviors such as imaginary conversations with the baby characterized by endearing and affectional comments which reflect a growing sense of a developing relationship with the fetus. The fantasies and fears developed toward the fetus and the preparatory behaviors are functionally significant in the development of maternal attachment to the infant and in psychological preparedness for motherhood Rubin, 1977.)

Leifer (1977) also assessed the relationship between the affective ties to the fetus during the prenatal period and maternal attachment to the baby postpartum. Those women who felt intense attachment to their babies during the pregnancy often viewed their relationship with their infants after delivery as being a continuation of the relationship started during the gestation. There was a high association between attachment to the fetus during pregnancy and maternal feelings toward the baby. Women who had developed only minimal emotional ties to the fetus experienced a greater sense of distance toward their babies during the hospital stay, and most of these women remained low in maternal feelings at two months postpartum. In contrast, women who had developed intense emotional attachment to the fetus by the end of the pregnancy experienced higher degrees of closeness to their babies during the postpartum period.

Factors associated with maternal attachment. Several investigators have identified factors crucial to the development of maternal attachment during the prenatal period (Rubin 1975, 1977, Leifer, 1977). One factor that has been cited is the woman's attitudes toward the feminine role. The mother's specific personality and attitudes toward her feminine identification influence her relationship with her child (Swanson, 1978). Experimental data suggests that the experiences of the mother are a major determinant in molding her care giving role (Klaus and Kennell, 1976). Through processes of imitation and

modeling, children are socialized into roles they observe in the parent. Playing house appears to be a rehearsal for mothering a real baby in the future. Thus, long before a woman becomes a mother she has learned through observation and plays a variety of mothering behaviors.

The second factor identified as crucial to the development of maternal attachment during the prenatal period is acceptance of the pregnancy (Rubin, 1975). Pregnancy represents a developmental crisis for the family requiring intrapersonal and interpersonal adjustments of role, finances, and other familial considerations. Acceptance of the pregnancy is represented by the mother's identification of the growing fetus as an integral extension of herself (Bibring, 1961).

The third factor named in this process of developing prenatal maternal attachment is a perception of the fetus as a separate individual. A growing awareness of the baby in utero as a separate individual usually starts with the sensation of fetal movement called quickening. During this time a woman must begin to change her concept of the fetus from a being that is part of herself to a living being who will soon be a separate individual (Rubin, 1970, 1984). After quickening a woman will usually begin to fantasize about the baby, attributing some characteristics to him or her and developing affectional bonding (Klaus and Kennell, 1976). Bibring (1961) believed that this realization of the fetus as a separate individual prepares a woman for birth

and physical separation from her child. The awareness of the baby as an individual is continued through the pregnancy, by the varied movements of the fetus, changing growth patterns, and the response of fetal behavior in reference to hers.

Prenatal maternal attachment research. Empirical research supports theoretical perspectives describing maternal attachment during the prenatal period. The initial research describing and testing this attachment is dated now, yet, these early investigations have sparked the promotion of more current studies to continue to expand the theory base regarding this aspect of human life.

Cranley (1981) developed a tool to measure the construct of maternal-fetal attachment. She defined maternal attachment as the extent to which women engage in behaviors that represent an affiliation and interaction with their unborn child. These behaviors comprise aspects of the relationship between the mother and fetus and are identified as: 1) differentiation of self from fetus; 2) interaction with the fetus; 3) attributing characteristics and intentions to the fetus; 4) giving of self; 5) role taking; and 6) nesting. These behaviors were designated as subscale titles for the Maternal Fetal Attachment Scale (MFAS).

Content for the subscales was obtained by consulting with other clinicians and a group of Lamaze instructors followed by review from five nurses expert in the field of

maternal child health. A group of pregnant women also reviewed the tool for understandability and appropriateness of items. A coefficient of reliability of .85 was demonstrated for the tool with the reliability of the subscales ranging from .52 to .73, except for the nesting subscale. This subscale demonstrated no reliability and was eliminated. Seventy-one subjects from either a Lamaze class setting or a private obstetrician's office participated in the study. The participants were between 35 and 40 weeks gestation at the time the MFAS was completed.

A 24-item scale resulted from the analysis consisting of statements representing the subscales in the maternal-fetal relationship. Findings of the study indicated that pregnant women in the third trimester of pregnancy demonstrated a significant level of attachment to their fetuses. These findings correlate with the theoretical perspectives described by Rubin (1977) that identify growth in size and weight, fetal movement, idiosyncrasies of the fetus' behavior in response to hers, and her accommodative changes in activities and preferences as factors creating that symbiosis during pregnancy. Cranley (1984) later reported that group mean total and subscale scores on the MFAS were higher for women beyond 20 weeks gestation than for women earlier in the gestation. Certainly, by the middle to end of the third trimester fetal movement has occurred for many weeks, which supports the theoretical notion that describes fetal movement as the turning point

whereby the mother develops an awareness of the fetus as a separate individual.

Grace (1989) administered the MFAS monthly to 69 gravidas from the onset of prenatal care until delivery. The MFAS data obtained in this study suggested a similar developmental process, in that, as the gestation advanced the MFAS total and most subscales increased as well.

Correlation of variables on prenatal maternal attachment. The study of prenatal maternal attachment through empirical research has primarily focused around the examination of demographic variables, personality variables, and health variables. Demographic variables including educational level attained, socioeconomic status, number of previous pregnancies, ordinal position of the unborn child, intendedness of the pregnancy, and whether or not the mother had an ultrasound have been investigated and were not found to correlate significantly with prenatal maternal attachment (Cranley, 1981; Kemp and Page, 1987; Muller, 1990). These findings support the idea that prenatal maternal attachment is a unique relationship with a specific individual that is differentiated from a woman's previous experience as a mother and from her relationship with previous children.

The influence of age and prenatal maternal attachment is not clearly explained in the research findings. Cranley (1981) found no significant correlation between the variables. This investigator, however, dealt with a small sample and mean ages of approximately 27 years. Similarly,

Koniak-Griffin (1988) investigated the same correlation of age and maternal attachment in 90 adolescents ranging in age from 14 to 19 years. The overall findings of the study did not support a strong relationship between the variables.

In contrast, Kemp and Page (1987) reported a weak, but inverse correlation between age and the woman's prenatal attachment to the fetus using a measurement scale that conceptualized the fetus as a person. This particular scale, which is part of the Prenatal Tool developed by Rees (1980), includes questions regarding a woman's feelings about the baby inside her. Although the sample size was small and lacked non-probability sampling, the results indicated that as a woman's age increased, their prenatal attachment decreased. In support of this finding, Muller (1990) also found that as maternal age increased, prenatal attachment decreased. Interestingly, in Muller's study the mean age of the participants was 30 years, the mean educational years attained was 15, and most worked outside the home. Possibly the lives of these women were somehow more complex which might have influenced the process of attachment.

More recently, Bloom (1995) studied the development of attachment behaviors over time in a group of adolescents, ages 12 to 19 years. Maternal fetal attachment was measured at three different points during the gestational period using Cranley's Maternal Fetal Attachment Scale. The findings of this study support the existence of maternal-

fetal attachment in adolescents. An interesting finding in this study was that the younger adolescents, ages 12 to 14 years, showed lower scores on the giving-of-self subscale of the tool. Only five adolescents of this age range were in the study, which creates difficulty in generalizing the findings beyond the current sample. However, the scores obtained in this subscale of the tool support Rubin's (1984) theory that describes the giving of self as probably the most complex developmental task of pregnancy. Given the presumed developmental phase of these adolescents, characterized by egocentricity, Bloom (1995) cites the appropriateness of the findings to the younger adolescent who would likely have more difficulty in making personal sacrifices for the benefit of the fetus.

The relationship between marital relationships and fetal attachment has also been investigated with inconsistent results. Cranley (1984) found a positive association between the marital relationships and attachment to the fetus for both men and women. This supports Rubin's (1975) suggestion that a major developmental task for the pregnant woman is to insure acceptance of the expected child by those significant to her, in particular her family. Muller (1990), however, found no correlation between attachment and marital satisfaction.

The impact of personality variables on prenatal maternal attachment has also been investigated in several studies. Perceived anxiety, social support, and self-

concept have been found to be associated with prenatal maternal attachment (Cranley 1981; 1984; Gaffney, 1986; Kemp and Page, 1987).

Gaffney (1986) studied the association of maternal-fetal attachment with state anxiety and trait anxiety. One hundred twelve third trimester pregnant women comprised the study sample. Utilizing the State-Anxiety Inventory (STAI) and Cranley's MFAS, a significant inverse correlation between state or temporary anxiety and overall maternal-fetal attachment was found. In addition, an inverse, but non-significant relationship between maternal-fetal attachment and overall scores representing trait or long-term anxiety was found. However, data from one of the subscales of the MFAS, the Giving of Self, showed a low but significant inverse relationship with trait anxiety. This finding might suggest that as trait anxiety increases the capacity to give of one self to the fetus lessens, and conversely, as trait anxiety decreases the capacity to give of one self to the fetus increases.

It appears that long term anxiety (trait) involving an individual's response to everyday life is seen as detrimental to attachment. However, anxiety that is temporary (state), as is associated with pregnancy, is viewed as a positive response to the attachment process. Discrepancies in the findings might also be associated with the particular measures that were used as it was unclear

whether maternal anxiety or anxiety for the fetus' well being was accurately assessed.

The linkage of social support to prenatal maternal attachment has also been empirically researched, also with discordant findings. Most definitions of social support depict multiple dimensions or components which can be regarded as comprising two general types of support: 1) psychological support as measured through affiliation, affirmation, and emotional support; and 2) tangible support as measured by direct aid (Norbeck, 1981).

Cranley (1984) conducted interviews with 30 women in the third trimester of pregnancy to assess the association of social support and prenatal maternal attachment. During the interviews the women were asked to complete the MFAS and to respond to questions that utilized a broad conceptualization of social support that were specifically developed for the study. Overall, social support was positively associated with the woman's attachment to her fetus. Interestingly, support from health care professionals, identified as the physician and nurse, was more highly correlated with attachment than was support from family and friends. Cranley (1984) viewed these results with some skepticism, noting that the subjects entered the study through their physicians' cooperation, and all were aware that the investigator was a nurse. Cranley (1984) suggested that there may have been a tendency on the part of the participants to make a socially acceptable or even

flattering response so as to not to negatively impact the prenatal care that they were receiving.

In a study to further explore maternal and paternal attachment during the prenatal period Mercer and associates (1988) studied four groups of expectant parents during the 24th to 34th week of pregnancy - high-risk women and their mates, and low-risk women and their mates. Social support was one variable that was examined and was operationalized as perceived, received, and size of the support network. Received support significantly correlated relationships with fetal attachment, but for the low-risk women only.

In contrast, Koniak-Griffin (1988) found no significant correlations between any of the main social support variables and the total maternal-fetal attachment score in a group of 90 adolescents ranging in age from 14 to 19 years. Instruments used in the study were Norbeck's Social Support Questionnaire (NSSQ) and the MFAS. A very limited number of significant associations were revealed between the MFAS subscales and the NSSQ. Adolescents receiving a greater amount of aid scored higher on the attribution subscale of the MFAS. The correlation between this subscale and total functional support also showed a trend toward significance. Perhaps the differences in findings might be attributed to the particular tool used to measure social support.

The relationship of self-esteem and prenatal maternal attachment has also been empirically researched, but the findings have not supported a significant linkage. Wells

and Marwell (1976) identified interchangeable terms used with the concept of self-esteem, including self-regard, self-acceptance, self-worth, and self-image. Although there is not a consensus regarding the definition of self-esteem, most theorists regard it as a learned phenomenon revolving around the interactions of the individual with the social environment. The social environment refers primarily to the family of origin and significant others across the individual's life span (Coopersmith, 1967).

Gaffney (1988) studied the association between maternal-fetal attachment and self-concept. One hundred women in the first trimester of pregnancy participated in the study. The Tennessee Self-Concept Scale (TSCS) and the MFAS were used in data collection of the variables. The results revealed a non-significant relationship between the overall level of maternal attachment and self-concept. In a similar study, Cranley (1981) found no relationship between these variables using Rosenberg's Self-Esteem Scale and the MFAS as the tools for measurement. Noted in the discussion of findings with the former study was the possibility that women with low self-concepts before pregnancy actually had higher self-concepts during this study. This supposition was based on Deutsch's (1945) explanation that a woman with a low self-concept might experience a separation from her ego during pregnancy, creating fluctuations in self-concept levels. If such fluctuations are hard to detect the

relationship between self-concept and maternal-fetal attachment becomes difficult to assess.

Fetal movement, ultrasound examination, and amniocentesis for genetic diagnosis were other variables studied in relation to prenatal maternal attachment by Heidrich and Cranley (1989). The researchers were also interested in the relation between perception of fetal growth and development and maternal-fetal attachment. Ninety-one women in the second trimester of normal pregnancies participated in the study. Cranley's Maternal Fetal Attachment Scale was used as a measure of attachment. A second scale called Perception of the Fetus Scale (POF) was developed for the study to assess the woman's perception of fetal growth and development. Measurement was assessed at 16 and 20 weeks gestation.

The results of the study showed an increase in attachment scores from the first measurement time at 16 weeks to the second measurement time at 20 weeks gestation. This supports previous theoretical and empirical data that reports increasing attachment as the gestation progresses.

The results of the study also indicated that feeling fetal movement positively related to attachment to the fetus, and most significantly in the women who felt fetal movement earlier in the pregnancy as opposed to those who felt it later in the gestation. Women who had genetic amniocentesis had lower attachment scores before the procedure, but one month later, the attachment scores were

not significant from those of other women. The researchers suggested this finding might be explained by the notion that women may withhold feelings of attachment until a positive result has been obtained. The performance of ultrasound examination had no effect on maternal-fetal attachment.

There was a small, but significant correlation between attachment scores and perception of fetal development. Heidrich and Cranley (1989) suggested this finding might be explained by the notion that the women who reported more attachment may have perceived the fetus as more developed, regardless of the gestational age or how much they had learned about fetal development.

Health variables have also been considered to influence prenatal maternal attachment. In the early 1980's when an abundance of attachment literature was unveiled, it was estimated that approximately 20% of all pregnancies in the United States were labeled high-risk. (Penticuff, 1982). High-risk means that there is a significant possibility of fetal demise, anomaly, or life threatening illness to the newborn or mother. In a high-risk pregnancy, the attachment process is thought to be impeded by an inhibition of the usual psychological adaptation to pregnancy and feelings of maternal adequacy. During the first 14 weeks of pregnancy, the high-risk woman is faced with the need to accept her pregnancy, yet as she attempts to work through the developmental task, she must realistically face the events that threaten her pregnancy. In the second 14 weeks, fetal

movement occurs and the dream of the child's viability becomes a reality. However, if the woman is unable to manage ambivalent feelings toward the fetus, she may experience a sense of threat, isolation, and loss of control.

This theoretical notion, however, has not been empirically supported. Kemp and Page (1987) found no significant difference in fetal attachment scores between 53 women with normal pregnancies and 32 women with high-risk pregnancies during the last trimester of pregnancy. Criteria for inclusion into the high-risk group included: premature labor, placenta previa, diabetes mellitus, fetal intrauterine growth retardation, and pregnancy induced hypertension. The MFAS was used for data collection.

Similarly, Mercer and associates (1988) found that women who were hospitalized for a high-risk condition did not differ in their maternal-fetal attachment from low-risk women. Of the 153 high-risk women, 72% were hospitalized for preterm labor, 8% for pre-eclampsia or hypertension, 4% for bleeding or placenta previa, 3% for diabetes, 3% for Rh incompatibility, 2% for asthma, and 1% for upper respiratory infection, thyroid deficits, renal disease, surgery, and back injury, respectively.

These findings really are not that surprising considering that maternal attachment was measured during the third trimester of the pregnancy. Again, by this time, the chances of survival for the infant far outweigh the chance

for loss based upon all the technological advances science has made to treat the deficits of preterm delivery. In addition, these findings might suggest that in high-risk pregnancies an emotional affiliation with the developing fetus promotes positive hopes and dreams for the unborn child.

It is apparent in the review of this research data that Cranley's (1981) tool was used extensively to measure prenatal maternal attachment because it was the only tool available to measure this construct. More recently, though, Muller (1993) developed the Prenatal Attachment Inventory (PAI) to clarify the essence of prenatal attachment. This research was prompted by the inconsistencies in previous studies using the MFAS. Muller (1993) defined prenatal attachment as the unique affectionate relationship that develops between a woman and her fetus. This definition is somewhat different from Cranley's as it stresses a more affiliative relationship, rather than a behavioral one.

Muller (1993) developed an attachment model that served as the basis for testing the PAI. This attachment model postulated that initial attachment experiences lead to the development of internal representations, which in turn influence subsequent attachments formed by a person. Content validity for the tool was developed using an expert panel of theoreticians, nurses providing prenatal care, and pregnant women. A 29-item instrument was developed. Construct validity of the PAI was tested by correlating PAI

scores with scores from instruments measuring constructs of pregnancy adaptation and marital satisfaction taken from the attachment model. Marital satisfaction was considered an indicator of attachment to the partner. To assess concurrent validity of the PAI the MFAS was also administered and PAI scores were correlated with MFAS scores.

The initial testing of the PAI took place among a convenience sample of 310 low-risk pregnant women able to read and write English who were recruited from various obstetric practices and childbirth preparation classes. The mean gestational age of the participants was 31 weeks. Coefficient alpha for the PAI was .81. The results of this study reinforce the perspective that by the third trimester of pregnancy a significant affiliation has occurred between the mother and fetus prompted by fetal movements and the various changes of the gestation.

Muller's study (1993) also suggested a positive correlation between prenatal attachment and pregnancy adaptation and two of its components, body image, and attitudes toward the pregnancy and the baby. This finding is supported by Rubin (1984) who noted that to have a positive regard for the fetus, the woman must first see herself in a positive manner.

Critique of prenatal attachment research. There is a predominance of quantitative literature that describes several correlates of prenatal maternal attachment,

including maternal age, gestational age, marital satisfaction, social support, self-esteem, perceived anxiety, ultrasound, amniocentesis, fetal movement, pregnancy symptoms, and pregnancy risk. The linkages of some of these correlates to prenatal maternal attachment have been somewhat vague and inconsistent, possibly due to such limitations as small sample sizes, non-probability samplings, the particular tools used for measurement, and the point of administration during the pregnancy. Recall, for example, that most of the participants in the studies were in the third trimester of pregnancy when developmentally that relationship would have been at its highest based upon substantial theoretical knowledge discussed earlier.

The psychometric properties of the MFAS and the PAI indicate they are sound instruments to measure prenatal maternal attachment within the scope of the construct as defined by the individual investigator. These instruments have indeed contributed to our knowledge of prenatal maternal attachment and influencing variables. However, the data obtained for tool development relied heavily upon the working definitions of prenatal maternal attachment and the retrospective feelings and behaviors in the professional affiliates who may not have experienced pregnancy at all. In other words, the tools seem to lack a foundation in qualitative data from the actual lived experiences of pregnant women. Their voices have the potential to add new

dimensions to understanding this phenomenon and potentially refining and expanding current theoretical perspectives.

What is of great value from the quantitative research has been the support and validation of many of the theoretical perspectives postulated by investigators years earlier. For example, the nature of prenatal maternal attachment as a developmental process set forth by Rubin, (1977) has well been supported by researchers. In fact, the one correlate that has been linked consistently to maternal attachment is gestational age (Cranley, 1981, 1984; Grace, 1989; Muller, 1990). The key event in the gestational period central to this linkage has been described as the occurrence of quickening and subsequent fetal movements as the fetus makes itself known to the mother. This particular correlate supports the theoretical perspective that fetal movement is the turning point in the development of attachment as the fetus is recognized as a separate entity apart from the mother (Rubin, 1977; Leifer, 1977).

What continues to be a concern for physicians and nurses is interpreting the research to the extent that the findings have some applicability to everyday practice in all types of settings. The assessment of this developing maternal attachment has not become part of the general prenatal care of women, which reflects that the findings from previous research have not affected the care of pregnant women over the course of the pregnancy. Simply, the existing data has not been conceptualized and integrated

into the assessment and general care of women during pregnancy.

Prenatal and Postnatal Attachment Research

There have been studies that have investigated both prenatal and postnatal attachment within the same study. The theoretical premise of some of these studies was that the stronger the prenatal attachment, the stronger the postnatal attachment (Carter-Jessup, 1981). However, researchers looking to find a correlation between prenatal and postnatal attachment have had mixed results.

Carter-Jessup (1981) explored the effects of attachment promoting interventions during pregnancy on postnatal attachment. Ten third-trimester pregnant women were randomly assigned, either to an experimental group, who received attachment interventions methods such as learning to determine fetal position, note fetal activity, and massage the abdomen to stimulate interaction with the fetus, or to a control group who received the usual prenatal care. Two to four days after delivery, the mothers were observed for postpartum attachment behaviors, such as holding the baby "en face" position and talking to the baby. The findings supported the theoretical premise that prenatal attachment intervention promotes the frequency of mothers' postnatal attachment behaviors. However, it is important to note that generalizations of Carter-Jessup's (1981) study is limited due to the small sample size and the undetermined reliability and validity of the study instruments.

Cranley (1981) found that scores on the Maternal Fetal Attachment Scale did not correlate with the perceptions by mothers of their babies three days after birth as measured by the Neonatal Perception Inventory. Similarly, a study by Reading and associates (1984) found that attachment at 32 weeks gestation predicted 13% of maternal feelings of attachment one day after delivery. However, attachment at 32 weeks did not predict mother-infant attachment three months after birth.

More recently, Muller (1996) conducted a correlational study with data collected during the second half of the pregnancy and again at one-two months after delivery. The Prenatal Attachment Inventory (PAI) was used to measure attachment before birth. The Maternal Attachment Inventory (MAI), the How I Feel About My Baby Now Scale, and the Maternal Separation Anxiety Scale were used to measure attachment after birth. The results of the study support correlation between prenatal and postnatal attachment, however, Muller carefully points out that other variables were influential in the development of the mother-infant attachment. Characteristics such as the mother's psychological status, her experience of attachment to her own mother, and her mental images of attachment were all noted as contributory to the findings.

Analysis and Critique of Attachment Literature

This review of the literature has examined how the concept of attachment has evolved over the years beginning

with observational studies that first looked at this relationship in animal species and later in humans. This special relationship was called bonding, characterized by behaviors that showed an affiliation for the newborn. These early studies had a great impact on nurse clinicians as nursing process revolved around assessment and documentation of this interactional process. Nurses were educated to focus on these behaviors as warning signs for potential aberrations in the parenting process.

From all the research efforts on prenatal and postnatal attachment, the delivery of maternal newborn care changed, ultimately becoming more family centered. The postpartum practices that separated newborns from their mothers changed to foster this early relationship. The mother and the newborn were termed a "couplet" which meant that the infant spent the majority of the hospitalized period at the mother's bedside.

As more knowledge about the characteristics of human relationships was generated, the unique process between a mother and her child took on a greater magnitude as researchers postulated that this relationship was actually a continuation of a process that started months earlier during the prenatal period. Therefore, researchers studied the nature of this relationship in pregnant women mainly through quantitative measures. These studies have supported theoretical notions suggested by investigators, and at the

same time, have yielded some inconsistent findings in regards to various correlates.

It seems, though, that the findings generated from the quantitative research studies about prenatal maternal attachment have not been made an impact to the extent that this process is assessed or followed in women during pregnancy. This most likely reflects not only some of these inconsistent findings with the data obtained from previous quantitative studies, but a lack of research that has been unable to generate the theory building necessary to influence clinical practice in this area.

Yet, as valuable as these previous research studies have been, there are many more variables and correlates of prenatal maternal attachment that may be identified using another method of inquiry. This identification will contribute to the acquisition of knowledge and inspire new areas of research about prenatal maternal attachment.

As importantly, the previous research studies presented did not emphasize the practice of health promoting behaviors and how they correlate to the process of attachment. Nurses teach women during pregnancy, for example, to avoid harmful substances like drugs, alcohol, and smoking, to partake in a healthy diet, to balance rest with exercise in order to promote maternal and fetal health. Through the shared experiences of the women in this study, the performance of these self health-promoting behaviors was examined as to how they might relate to the attachment process, and

subsequently to the nature and timing of teaching these behaviors through nursing practice.

Finally, there is a general assumption amongst health care professionals that women attach by the third trimester of the pregnancy, leading to lifelong attachment after birth. If this is a generally accepted assumption, then why continue with additional research revisiting what is already known?

The nature of research is not only to answer questions, but also to raise the level of inquiry to another level. With the limited research about maternal attachment in the 1990's, and the limitations and inconsistencies raised in the previous quantitative literature, it is apparent that another approach is justified to generate a clearer understanding of this process and to add strength to what is already known about how maternal attachment evolves over the pregnancy. It seems timely, then, to use a qualitative approach to further the descriptions of prenatal maternal attachment from the voices of women living the experience.

Chapter III: Methodology

Phenomenological inquiry was used to interpret as fully as possible the totality of the evolving process of prenatal maternal attachment from the woman's viewpoint that considers their internal and external world. This chapter describes the phenomenological process, ethical considerations, research strategies, and methodological rigor employed to obtain and analyze the data in this investigation.

Phenomenology

Phenomenology, as a qualitative method of inquiry, is a rigorous and systematic approach designed to explore and describe phenomena to the "fullest breadth and depth" (Spiegelberg, 1982). This phenomena includes the human experience as it is lived. Phenomenological inquiry ultimately strives to bring to language, perceptions of what it means to be human (Streubert and Carpenter, 1995).

Recognizing that the nursing profession embraces a holistic approach to valuing the quality of life for each individual, phenomenology offers an opportunity to describe and clarify phenomena important to that approach for nursing practice, education, and research. In this particular study, the phenomenological method was best suited to investigate and describe to the fullest potential, the

evolving process of prenatal maternal attachment in a group of women who were living the pregnancy experience for the first time.

Spiegelberg (1982), the historian of the phenomenological movement in philosophy, identified a core of elements central to phenomenological investigations. The core elements described by Spiegelberg (1982) that were used in this study are descriptive phenomenology, phenomenology of essences, and reductive phenomenology.

According to Spiegelberg (1982), descriptive phenomenology involves a "direct exploration, analysis, and description of particular phenomena, as free as possible from unexamined presuppositions, aiming at maximum intuitive presentation." Inherent in this exploration is reductive phenomenology, which requires the researcher to address personal biases and assumptions in order to obtain the purest description of the phenomena under investigation. Spiegelberg (1982) calls upon the researcher to set aside or bracket these assumptions or biases to preserve the objectivity of the phenomena. The assumptions for this study have been acknowledged in Chapter I.

Descriptive phenomenology, as explained by Spiegelberg (1982) entails a three-step process to emphasize the richness, breadth, and depth of the perceptions of our lived experiences. The first step in this process, intuiting, has been called the personal link to the other's reality. Intuiting requires the researcher to become totally immersed

in the phenomenon under investigation. The researcher must approach each story with an empathetic sense to intuit another's reality as if it were her own. The researcher avoids all criticism, evaluation, or opinion, and pays strict attention to the phenomenon as it is being described.

The second step in this process of descriptive phenomenology is analyzing. This step involves distinguishing the essence of the phenomena being studied based on the data obtained. As the researcher listens to the descriptions of the phenomenon, common themes or essences begin to emerge.

The last step in this three-step process of descriptive phenomenology is describing. The aim of this step is to communicate, both written and verbally, critical elements of the phenomenon. This description is based on a grouping of the phenomenon, which often occurs simultaneously with intuiting and analyzing.

The next element of the phenomenological method described by Spiegelberg (1982) that was used in this study is the phenomenology of essences. Spiegelberg (1982) described this as a probing through the data and searching for common themes. This involves careful study of the concrete examples given by the participants in order to establish a pattern of relationships shared by particular phenomena.

Ethical Considerations

This research proposal was submitted for review and acceptance by the Committee on the Protection of Human Subjects at the University of San Diego before the study began. The research was conducted under the guidelines specified by this committee.

Consent. A written consent granting permission to recruit participants for this study was obtained from the medical director in each of the physician offices before the initiation of the study. The researcher primarily approached potential participants for the research study in the medical facility where they were receiving prenatal health care. When the researcher was not at the facility at the time of the potential subject's prenatal visit, the staff member (primarily an R.N.) in the physician's office was asked to distribute an information letter (see Appendix A) and a sample consent form (see Appendix B) which they could study and ask questions about. Information about the study was repeated before the interviews occurred and questions were addressed before the consent form was signed. Questions that arose during the study continued to be addressed.

Anonymity and confidentiality. Coding all data so that no identifying information was possible for any one participant protected the anonymity and confidentiality of the participants. Only the researcher knew the names of the participants and the corresponding codes. Participants were

made aware, through the information letter and the informed consent, that all interviews were audiotaped for accuracy and interpretation of data. A paid transcriptionist then transcribed the verbal descriptions, however, only the researcher and transcriptionist had access to the tapes. All material, tapes, notes, and identifying information were stored in a locked storage area accessible only to the researcher. The names and identity of the participants remained separate at all times from the data. All identifying information, notes, and tapes were destroyed after completion of the study. Any future publication of the research results will not report data in such a way that can identify individual participants.

Risks. This study asked participants to explore their feelings, emotions, and behaviors about a personal phenomenon from their own life experience. It was anticipated that this posed minimal risk to the participants. There was always a slight chance that this discussion could cause some distress depending upon the life's circumstance of the individual. If this had occurred, the interview would have been stopped immediately and the participant would have been assisted to reach some resolution of the situation. If the participant desired to leave the study at any time the tape of the data would have been destroyed. No incidences of any distress occurred with any of the participants over the course of the study. The participant was reminded prior to the initiation of the

interviews that the discussion would be terminated at any time the participant requested, or at any time the researcher felt it in the best interest of the participant to stop the interview. This situation did not occur with any of the participants. The participants were reminded that their non-participation in the study would not interfere with their continuation of prenatal care.

Research Strategies

The research strategies implemented in this study included participant selection, recruitment procedures, data collection, interview process, coding of the data and field notes, and data analysis.

Participants. The participants for this study consisted of ten English speaking women, at least 20 years of age, who were experiencing a naturally conceived pregnancy for the first time. Any woman with a previous pregnancy that terminated in abortion or miscarriage, or any woman opting for adoption were excluded from the research. Two participants who met the sample criteria for the study miscarried before the first interview occurred and were dropped from the study.

Demographic characteristics were examined upon completion of the study in order to develop breadth to the picture of the pregnant woman who participated in this investigation. After the interview, the participant was asked to respond to a series of questions gathered on a separate sheet of paper. The demographic data of interest in

this study was: 1)age; 2)racial background; 3)marital status; 4)occupation; 5)employment status; 6)educational preparation 7)intendedness of the pregnancy; and 8) performance of an ultrasound. A sample of the demographic data information sheet is included in Appendix C.

All of the participants in the study were college educated, married, and presently employed full time as business or medical professionals. In fact, six of the participants worked in the medical or nursing arenas. The women ranged in age between 27 and 35 years. All were of Caucasion background, except for one who was of Asian descent. Seven of the women reported that the pregnancy was somewhat unexpected, however, only two of these participants verbalized that they were carefully practicing birth control methods. All of the participants had an ultrasound performed in the first or early part of the second trimester of the pregnancy.

Recruitment procedures. The participants were primarily solicited from two private physician offices in the Orange County area where they were seeking prenatal care for the current pregnancy, by word of mouth from professional colleagues of the researcher, and the researcher.

The researcher met with the staff members in the physician offices to explain the purpose of the study and characteristics of participants who potentially met the criteria for inclusion. Introductory letters were given to

the staff, which included the researcher's phone number. These letters were given to potential participants at the time of their prenatal visit when the researcher was not present to explain the details of the study in person.

The professional colleagues of the researcher each had a copy of the introductory letter about the research study. They were asked to distribute this letter to any potential participants that they met. However, this contact was strictly on a personal level, and one that did not involve the work arena where the study would have taken additional human subject's approval. Verbal permission was subsequently obtained by the participants for further phone contact by the researcher.

The researcher used word of mouth among friends and acquaintances to inform them of the study so that additional participants could be solicited. This solicitation took place mainly in social settings with whom the researcher was in contact with on a daily basis.

Volunteers were accepted into this study who met the criteria of experiencing pregnancy for the first time and who were able to discuss their feelings of maternal attachment to their unborn child in English.

Data collection. The researcher collaborated closely with the office staff, particularly the registered nurse who was working in a supervisory capacity, to determine those participants who clearly met the study criteria. When contact with those potential participants was made, the

researcher reviewed the purpose of the study and the process of how it would be conducted.

The participants in this research study were interviewed a minimum of two times during the pregnancy. The first interview occurred during the beginning part of the second trimester, approximately 14-16 weeks gestation. At this time, the common discomfort of nausea and vomiting of the first trimester had passed for the majority of the participants and they felt physically and emotionally able to complete the interview. The second interview occurred during the latter part of the second trimester, approximately 26-28 weeks gestation, which was after all the participants had experienced fetal movement.

Once a client agreed to participate in the study, an appointment was scheduled for the initial interview at a time and place mutually convenient for the researcher and the participant. Several of the interviews took place in the participant's home where they felt most comfortable; others took place in the researcher's home where the participants expressed a similar comfort. All the interviews took place in a quiet, private area without distraction. A follow-up interview was requested, if necessary, from all the participants after the first and second interviews by the researcher. This was done in order to clarify information obtained, or to add further reflections by the participant on aspects of the experience that had not been realized during either of the interviews.

Interview process. At the beginning of the scheduled interview, the information letter and consent form were reviewed. Any questions about the research study were addressed. The participant and the researcher signed the consent form. It was explained again that the interview would be audio taped, lasting approximately 1 to 2 hours. It was also emphasized that the researcher, the transcriptionist, and possibly the dissertation committee persons would be the only individuals who would actually listen to the taped interview. The participant was given reassurance about the confidentiality and anonymity of any shared information. Hopefully, this reassurance eliminated any concerns the participant had about speaking openly about personal information.

The initial interview began with an open-ended question for each participant: "Tell me what it was like when you learned about your pregnancy. Talk about it as completely as you can. Give as much information as you can, what you remember, what you thought, how you felt, and how you acted." Depending upon the individual responses the researcher delved further into the information provided by the participant for necessary details and clarifications. Questions used as guidelines for the interview are found in Appendix D.

The second interview also began with an open-ended question for each participant: "Tell me what it is like to be pregnant now. Talk about it as completely as you can. Give as much information as you can, what you are thinking, how you feel, and how you act." Again, depending upon individual responses further information was obtained for clarification purposes.

Participants were told of the potential need for a follow-up interview at each stage of the interview process. This option was left primarily for the researcher's clarification of interpretations from each interview, and for further reflection by the participant on aspects of the experience that may not have been realized during either encounter.

Immediately following the interview the participant was assigned a code number. Once the participant's name was coded, other identifying information about that individual was placed in a locked area accessible only to the researcher. The audiotape was delivered to the transcriptionist within a timely manner after completion of the interview. The interview was transcribed from the tape to a computer disc with one hard copy and returned to the researcher within a week.

Coding of the data and field notes. The data was coded to protect the participant's anonymity and to facilitate the handling of the data for analysis. Each participant had a designated letter-number code to specify their name and the

sequence of their interview in the study. For example, the first participant's initial interview was coded 1A; the second interview was coded 1B. The second participant's initial interview was coded 2A; the second interview was coded 2B, and so on for the remaining eight participants. This coding designated the first and second interviews that spanned a period of approximately four months from the first contact.

Field notes were maintained during the research study and consisted of the verbatim transcription of the interview with the participant and any other additional information that might add to the interpretation of the data. In addition, the field notes also reflected the researcher's personal thoughts, observations, critiques about the interview techniques, gestures, facial and emotional expressions of the participants, and the overall process at hand. These notes were added to the audiotape after each interview or at anytime deemed necessary by the researcher and were then transcribed by either the transcriptionist or the researcher.

This researcher transcribed four of the interviews in order to become more familiar with the techniques of phenomenological interviewing, the content of the interview, and data collection techniques.

Data analysis. The data obtained from the first set of interviews was analyzed immediately after all ten participants had completed this phase of the data

collection, and similarly with the data obtained during the second set of interviews. This was to insure that the data from the first and second interviews was interpreted in the freshest sense to when it was collected and would best represent the perspective of the prenatal relationship at that point in time. The data was then interpreted as a whole to represent this process of prenatal maternal attachment that had evolved over the gestational period.

The data analysis for this study was based on the procedural interpretation of the phenomenological method specified by Colaizzi (1978). The steps used in this analysis were:

First, when the transcriptionist returned the tape and the hard copy of the interview, the researcher compared the data to check for accuracy of the transcription with the taped interview. This process entailed listening to the tape again and verifying the hard copy. Listening to the tape again actually allowed the researcher to enrich the interpretation of the data. When necessary, notes were made at this time regarding any pertinent perceptions or thoughts concerning the interview. The tapes and the hard copies were stored in a locked safe according to the established coding system until the conclusion of the final participant's interview.

Second, after all the initial interviews were completed, the hard copy of the interview was read again to gain a sense of the experience. It was then read again,

however, this time the procedure included highlighting sentences of significance in the interview that related to the phenomenon of maternal attachment. Colaizzi (1978) refers to this step as "extracting significant statements". After these sentences were extracted, they were filed according to the designated code for the particular interview. The significant statements were grouped together based upon recurrent thoughts and were filed separately.

The data analysis continued by organizing the significant statements into "clusters of themes" (Colaizzi, 1978,). These themes were filed with the interviewer's code. All significant statements that related to that theme were copied into the appropriate category.

Next, after the themes had been identified, it was necessary to read or listen to the interview again to evaluate that the themes interpreted were reflective of the interview and that no significant data had been omitted. A written summary followed highlighting the themes and their interrelationships and any other ideas that might be beneficial later on in the data analysis.

This process was repeated with the number of interviews necessary in order to reach data saturation. After the data from all interviews had been categorized into themes, the process of further sorting occurred. Themes with commonalties that seemed to express the same idea were further condensed and sorted. When this process had been exhausted, the outstanding themes represented the

qualitative aspects of prenatal maternal attachment. Relationships between and within the features themselves were examined as well as their interrelationship to maternal behaviors practiced during the pregnancy.

Finally, once the themes had been identified, the participants were contacted again to review segments of the interviews and the themes that had been extracted from their statements. The participants were asked if these themes were interpretive of their responses that had been recorded during each interview. If a particular theme that was interpreted by the researcher did not reflect the intended meaning of the response by the participants, the data was re-examined and clarified for significance.

Methodological Rigor

Methodological rigor, as applied to qualitative research, is to accurately represent the experiences of those who have been studied. Rigor in qualitative research is demonstrated through the researcher's attention to and confirmation of information discovery (Streubert and Carpenter, 1995).

The procedures of reliability and validity that deal with the statistical nature of tools used in quantitative research does not fit as well with this approach. Lincoln and Guba (1985) prefer to use the word "dependability" when referring to the reliability of the data and "credibility" when referring to the validity of the data. Several methods

were used to assure methodological rigor in this qualitative study.

Credibility includes activities that increase the probability that credible findings will be produced (Lincoln and Guba, 1985). One of the ways that credibility was demonstrated was through the prolonged engagement with the subject matter. For several years during doctoral study, this researcher has been immersed in reading and writing about prenatal maternal attachment as the topic for many pieces of scholarly work. From a professional standpoint, this researcher has been working with women living pregnancy for over 20 years.

Another way that credibility was demonstrated to support the methodological rigor of this study was to return to the participants after their responses had been organized into clusters of themes. At this time, the researcher reviewed segments of the original transcripts of the interview and the significant statements extracted from the transcripts with the participants. The themes that had been organized by the researcher in response to these statements were shared with the participants to validate the meanings of their responses. If the participant did not feel that the particular theme was true to their experiences, clarification was made accordingly by the researcher.

Dependability is met through obtaining credibility of the findings (Lincoln and Guba, 1985). Re-connecting to the

participants for validation of the descriptions supported this process of dependability.

There were other mechanisms, as well, that were done to contribute to the rigor in this study. Several assumptions had been carefully considered before the research began. This process helped to assure that the researcher's biases concerning the lines of inquiry were stated and bracketed before the interviews were conducted to insure that the participants' experiences, not those of the researcher were being recorded.

Next, the procedure of securing the interviews after the verification of the transcribed copy protected the researcher from being biased for the next interview. This assured that when the data analysis had begun the data was fresh, thus providing clear insight into what the interviews contained.

Finally, during each interview the researcher asked the participants to elaborate as much as possible on their responses by saying, "Tell me more about this..". Throughout the interviews the participants were also asked to clarify and validate the meaning of their expressions by saying, "What I hear you saying is…" or "It sounds like what you are saying is…". The participants were able to respond to this statement by confirming or not confirming the immediate understanding of their expressions by the researcher. If this understanding was not validated by the participants, the subjects were asked to re-clarify their

thoughts again. This process of clarification and validation occurred often during each interview in order that the meaning of each significant statement would be clearer at the time of the interview, and later for the interpretation of the data by the researcher.

Chapter IV: Findings

The attachment a woman develops for her unborn child is a unique phenomenon, known cognitively, psychosocially, culturally, and spiritually to the individual living the experience. It is a phenomenon best described as a process that occurs and changes over time in response to the dynamics of the prenatal period. Created from a reflection of self-expression and insight into one's individuality and perceptions, a description about one of life's earliest human relationships has been generated.

Prenatal Maternal Attachment: The Lived Experience

The analysis of the interviews with the ten participants yielded their descriptions of the development of maternal attachment beginning with a recollection of their first conceptualization of the pregnancy, and ending in the later part of the second trimester of the gestation. Amidst the variety of experiences and responses by the participants, the themes that characterize the phenomenon of maternal attachment have been sorted and summarized in Table 1.

Table 1

Major Themes of Prenatal Maternal Attachment

Major Themes
Awareness of a Life-Changing Event
Experiencing a Mixture of Feelings
Feeling Supported
Being Protective of this New Life
Imaging the Life Within
Being Connected to this Growing Life
Experiencing the Reality of the Life Within
Creating a Dream or Fantasy
Anticipating the Birth

These themes collectively help to encapsulate the reality of the experience of prenatal maternal attachment so that a clearer understanding and appreciation of this part of human nature can be ascertained. In addition, these themes describe the process of prenatal maternal attachment as it unfolded through the stories of these ten women as they lived the experience of pregnancy. This process of attachment is accentuated as a progressive one, through the reality of the experience as it evolved over the course of many months.

This research study began when the participants were between 14-16 weeks gestation, which was the early part of the second trimester. At this time, the pregnancy was well

established for all the participants, since the initial validation of the pregnancy was between 5-7 weeks.

The process of prenatal maternal attachment was first described as these ten women mentally recaptured the times when they acknowledged the confirmation of pregnancy and the acknowledgement of the pregnancy as a life-changing event. This event would forever alter the life that they were presently living and enjoying. Everything, personally and professionally, was going to change in some way.

There was no hesitation in their voices as they vividly spoke of a very emotional time, surrounded by tears and expressions of happiness and shock to recollections of anger and devastation. The mixture of feelings that they expressed mirrored their life circumstances that they were living.

Despite the reality that their personal and professional lives would greatly be impacted, and the range of emotions that surrounded their entire being, these women embraced the intellectual awareness of the pregnancy and described a way of living that promoted their health and that of the fetus. These self health-promoting behaviors were interpreted as a way of being protective of this new life, in order to optimize the chances of delivering a healthy baby.

As their recollections moved to the present day pregnancy experience, these women shared their mental imagery of the fetus as they talked about the pregnant self.

They were able to create pictures of the life inside them. They related feeling a strong physical connection to the fetus as manifested by the physical symptoms of the pregnancy and the knowledge that their bodies were supporting this life, yet, the emotional aspect of that connectedness had not been founded. This was due mainly to the fact that the sensations of fetal movement had not been experienced by any of the participants.

The developing prenatal attachment took on a new dimension as these women vividly recalled their experiences of the first sensations of life within them. The first fetal movements changed the nature of the attachment process to a more emotional and affective one. The experience of life had taken place and the pregnancy became more real now, as the women were able to confirm the existence of the separate life within them. The continued body changes and especially the developing size of the abdomen validated the reality of the situation.

Recognizing the individuality of the life inside them became more pronounced as they began to identify specific characteristics to those movements. The growing fetus had a separate identity. With this new identity, the women participated in dreaming and fantasizing about the baby. Physical characteristics and traits were mental images now that were created as the growing fetus was more easily envisioned through the changing maternal size.

With the duration of the pregnancy now two-thirds complete, the end-point was in sight. The process of dreaming and fantasizing encouraged these women to begin anticipating the birth. The pregnancies were all progressing in a healthy fashion, which fostered a positive attitude about a healthy outcome. These women began discussing plans for the nursery and all the physical needs of the newborn. They were anticipating how their lives would continue to change as they prepared for the last weeks of the pregnancy and ultimately for the birth itself.

These themes describing the lived experience of prenatal maternal attachment are further analyzed.

Awareness of a life-changing event. Awareness of the pregnancy as a life-changing event emerged as a major theme from the participant's recollection of their first realization of being pregnant. Exactly how their lives would change remained an unknown. It was the unknown aspects of those life changes that connected to many of the emotions that these women first expressed as they responded to the confirmation of the pregnancy.

The women's perception about the pregnancy as a life-changing event clearly centered on the role changes and personal identity changes that predominantly affected them. All the participants in this study were college graduates and were presently working in a chosen career.

> I was all worried about taking off work and how that was all going to work out. I was trying to plan who would take care of the baby after I went back to work. I was only 2 months pregnant.

This woman said that the pregnancy initially focused on how her life was going to change, as opposed to her husband's life. She said that out of a sense of control she assumed with many life situations, she was the one to immediately attend to working out certain details, even though she was so early in the pregnancy. After all, she was the one that would be taking off work for a greater period of time and would definitely be involved more in the care of the baby during the initial time after birth.

In fact, all of the women focused on themselves as the target of change, in regards to how the pregnancy was going to affect their work, goals, and dreams. It was interesting how they concentrated their expressions on themselves, in fact, none of the participants mentioned any changes that would be necessary from their spouses regarding this life-changing event.

One participant recalled, "The first thing I thought about was school. What was I going to do about my dissertation?" This woman was in the midst of graduate school and immediately thought that the completion of her dissertation would need to be put on hold. She focused on her professional quests, because that was where the emphasis in her life now. School and developing job opportunities were what she was working for with the support of her spouse. Yet, becoming pregnant was desired, as well. She said that she immediately focused on how certain destinations in her life were not going to proceed as she

had anticipated, but only by time - she would indeed finish her schooling at some point. She admits to getting a perspective on these changes because this life event was more important than anything.

> O.K. Now I've got to change this in my life. I'm real comfortable where I am at and it's kind of hard to think that I am going to lose that self and become a different self.

This woman's words centered on herself as having to change more than anyone, simply because it was her body that would be carrying this baby, and that there were certain activities that she knew would have to change over the course of time that involved only her. She admitted to feeling a loss of herself, reflecting on all the years of schooling and preparation that it took to be at this point in her professional life. She was comfortable with who she was and where she was going now, and she did not want to face a change at this point in time. She reflected on a conversation she and her husband had some time ago when they were discussing having a family in the future. That conversation focused on her being at home during the early years of the child's development. She focused on those words intensely and recalled that she knew her life would never be the same again, and it was not the life that she wanted at this time. She admitted to feeling like she had lost her identity, an identity that she was comfortable with now. Becoming a mother would create a new identity and one that she said she was not ready to assume.

> I was finishing school in July and had made plans to travel before I started a new job. I had these trips all set up. This is going to mess up everything.

This woman admitted to being very centered on her professional life, as well. She recalled having to give up the freedom she was about to enjoy at this point in her life, now that she was completing her graduate school. She was choosing to do some traveling with her husband before settling down to a professional career. She said that the last several years of her life were totally focused on school, that it was like not having a life at all. When she had free time, she slept or studied to keep up with everything at the time. Now that she could see the "light at the end of the tunnel", she candidly admitted that this life-changing event had come along at an undesirable time.

> I was so absorbed about all the life changes that were going to happen. My life as I knew it was not going to be the same. I saw it changing already and we were still several months away from having the baby.

This woman said that she was the type of person who was always thinking about the future, and always trying to plan to keep her life as organized as possible. She said that did not enjoy doing things spur of the moment or things that deviated from her perception of how they should go. For her, the pregnancy represented a loss of that control that she enjoyed so much. Her life was going to change in a direction that was perceived as good, but one that she sensed was not totally in her control.

All the participants verbalized that pregnancy was one of, if not, life's greatest and most meaningful events. Life, as the participants knew it and were living it, was not going to be the same. All of the women talked about their jobs in a very positive manner and appeared to enjoy their work very much. The impact of the pregnancy on their lives was perceived as so powerful, that many of the participants did not believe that it was actually happening to them.

> I wake up in the morning and sometimes ask myself if I am really pregnant. Sometimes it still doesn't seem real. I actually have to tell myself that this is happening to me.

This participant indicated that she persistently had to remind herself about the reality of the pregnancy. She said she was so amazed and overwhelmed by the fact that she was going to be a mother, that she spent a lot of time convincing herself that indeed this was real and not a dream.

The knowledge that the pregnancy and birth were going to change their lives forever, yet facing the unknown in regards to those changes, was very influential in creating the mixture of feelings first expressed by the women when they learned about the pregnancy. It was going to take time to incorporate this major life event into their everyday living.

As these women expressed their feelings of pregnancy as a life-changing event, the focus of that life-changing event quickly moved away from the immediate focus of the personal

and professional role changes experienced with being pregnant, to one that centered on the new role of parent.

Many of the participants expressed concern about the kind of parent they would be, reflecting on past experiences about the parenting that they had received. The enormity of what that role was perceived to be was immense.

These women, all well educated, expressed concern for that new role, saying that education and "making money" was not a guarantee that one would be a "good" parent. Some mentioned the wonderful parents they had and the role modeling they had received growing up and continued to receive as adults. The focus on the parent role was clearly futuristic in nature, and one that many of the participants said they wondered about. That dream was going to become a reality soon, a dream with implications that would influence not one, but many lives.

> What can I do as a parent to make this baby be happy, be well adjusted, be confident, be a good person. My husband has already said that if the baby is a boy he will be a Little League coach and if the baby is a girl, he'll get involved with something that she likes.

This participant envisioned her role as a mother as a key figure in creating a happy life for her baby. She focused on her awareness that she would do everything possible to help this child grow to be a "good" person. She commented on the desire to model behaviors that she had witnessed with other parents, who delighted in their children's activities to create positive memories for life,

that would someday be looked back on as being very meaningful.

> I hope I can mirror in a sense the kind of parents that I have. If I can do half the job they have done all my life, this baby will be off to a good start.

This participant beamed with delight as she spoke about her close relationship with her parents. They were clearly role models in her life as she spoke of the many sacrifices that they had made for her as she was growing up. There was a great sense of pride in her voice as she talked about the influences that they had made in her life.

"We have talked a lot about the kind of parents we want to be and the opportunities we want to give this baby." Becoming a parent took on a new meaning for this participant. She was now going to experience that role first hand, which in itself created some anxiety for her. She spoke of her parents and having a renewed understanding of what being a parent meant, and the tremendous responsibility that would encompass a lifetime.

> I was trying to imagine myself as a mother and how I was going to react to things. I wondered whether I would be a similar parent as mine.

This participant acknowledged that she had not given a lot of thought about parenting until now. Imagining herself assuming a lifetime role, and perhaps the most important in her life was overwhelming.

"I started thinking about being a mother. It overwhelmed me." This participant, likewise, was attempting to imagine herself as a mother. Knowing that the transition

to that role was going to represent an immense change in her life, she was momentarily overwhelmed.

Experiencing a mixture of feelings. The awareness that the pregnancy would forever change the lives of these women was the basic tenet underlying the mixture of feelings that all the participants expressed when they first acknowledged the reality of the pregnancy. Experiencing a mixture of feelings emerged as a major theme when the participants were asked to recall their first conceptualization of being pregnant. Being pregnant was acknowledged by these women as perhaps life's greatest event. It was the perception of the pregnancy and interpreted magnitude of how it would affect their life that created such a continuum of feelings. These expressions were purely introspective, reflecting a range from shock and disbelief to devastation.

> I walked into the bathroom in that hour about four different times, walked in and looked at the sticks and went, "Oh my gosh," and then walked out again, then back in again, and so on. It was a funny thing to do because I was so shocked that it was actually true.

This participant conveyed that on an intellectual level she was quite sure about being pregnant, actually before the pregnancy test was self-administered. She had been experiencing some of the physical signs and symptoms of pregnancy, such as amenorrhea and breast tenderness. Pregnancy was what she and her husband desired at this time in their relationship. Emotionally, she expressed that she was so overjoyed about the test results that she was momentarily overcome with shock. Repeatedly looking at the

test results helped her to validate on an intellectual level that the pregnancy was a reality.

"I think at that very moment I was in a state of just disbelief." This participant cried when she read the pregnancy test as positive. She related that her tears were more expressive of disappointment and sadness, rather than being excited or happy. She verbalized that she was only able to concentrate on herself and how her life was going to change. Her initial reaction of disbelief was tied to "an overwhelming emotional feeling." She indicated that she was definitely not prepared or anticipating the positive results.

"It was positive and for that I was really excited, but I kept feeling like, no, it could not be real." This participant expressed that she was so overcome by her feelings of excitement, that momentarily her thoughts went from acknowledging the positive results to doubting the realness of it all. She verbalized that being pregnant was a life event that she had dreamed about, and so the reality that this was happening to her, definitely took time to be realized.

Feeling excited was amongst this range of feelings for many of the participants, however, this feeling seemed somewhat suppressed by feelings of fear, apprehension and uncertainty, that were generated by concerns for pregnancy loss. The fear of something happening to impact the

pregnancy in a negative way, added to this mixture of self-expression.

"I was excited, but I was nervous at the same time." This woman was visibly excited as she recalled how she first felt when she learned that she was pregnant. She related that her feelings of excitement were somewhat overshadowed by her thoughts of fear, that related most specifically to not knowing what to expect over the next few months.

"The thought of being pregnant was exciting, but more than that, I was scared at the same time." Similarly, this participant acknowledged feeling excited when she first learned about her pregnancy. She said that knowing she was going to have a baby made her so happy, and yet at the same time, she experienced feelings of being scared. She explained that these feelings of being scared were tied to the uncertainty that everything about the pregnancy would be O.K.

"I wish I could have appreciated feeling excited, but I was anxious and apprehensive at the same time." In recalling her first recollections of what learning about the pregnancy, this woman acknowledged that she wished she could have enjoyed the feelings of excitement that she knew were present. Yet, those feelings of happiness were obviously tainted by an anxiety and apprehensiveness that she said was tied to her fears of the unknown and the wonderment of whether the pregnancy would progress in a safe manner.

> When I first learned about being pregnant my initial happiness was shadowed by thoughts of miscarriage. That was something I had always feared about having a baby, because it happened to a couple of my friends who were pregnant with their first baby.

This participant's thoughts of miscarriage interfered with her initial happy reaction. She said that her reaction was influenced by stories that had happened to her friends, which she had difficulty discounting. She immediately was overcome with a fear that pregnancy loss was also going to happen to her.

"I purposely had to get past the miscarriage issue before I would allow myself to get really excited." This participant claimed that she wanted to be excited, but purposefully held these feelings back until the pregnancy reached the beginning of the second trimester. She said that she knew by then, that she had likely beaten the odds of experiencing a miscarriage.

A common thread that was identified for the majority of these participants was that they were very knowledgeable about the developmental course of pregnancy, after all, many were employed in the medical and nursing arenas, and most specifically in the area of maternal child health. They admitted that this knowledge contributed to their initial reaction that seemed to allow them to "hold back" a lot of the happiness and excitement that each was actually feeling. They expressed factors of fear, anxiousness, and apprehension in response to not wanting to get "too

attached" should something negative occur early in the pregnancy.

One participant had difficulty identifying her feelings, but rather recognized a state of being:

> I don't know what I felt. It was like I was on a cloud all day. I don't know what it was. I seemed to be in a daze or something.

For this participant the range of feelings could not be verbalized. She admitted to feeling many unspoken emotions, most of them being excited and happy, and yet scared and anxious at the same time. Because she could not actually get in touch with what she was feeling, floating on a cloud allowed her to "come outside of herself" and feel a state of just "I am going to have a baby."

The timing of the pregnancy seemed to play a part in the expression of emotions for some of the participants.

> The timing was not exactly what we had planned. I was excited. We said we were open to it and were not doing anything to prevent it I think that is why I was so shocked in the beginning.

This woman verbalized that with all the demands of daily life, thinking about pregnancy was not a conscious activity that occurred on daily or even a weekly basis. For her, it was the lack of a concentrative effort to become pregnant that explained her initial reaction of shock.

> There was a part of me that wanted the test to be negative because we really didn't plan it at this time. The thought of becoming pregnant wasn't something we were thinking about often. After the initial shock wore off, we were happy.

Planning the pregnancy was an issue for this woman. This was not an event that she particularly desired at this

time, as she admitted that she wanted the pregnancy test to be negative. Realizing that she and her partner were taking measures to prevent a pregnancy at this time, she admitted that her feelings of shock were easily explained in the beginning.

> I looked at the pregnancy test and called it negative. It was a very positive test. I threw it at my husband when he got home. I was "freaked out."

The reaction of being "freaked out" for this participant was directly tied to a state of unhappiness when she learned about the pregnancy. She said she was trying to convince herself that the test result was a mistake, that she had misread the "strip". After all, she verbalized that the pregnancy was not planned, there was no time in her life for this right now, so it could not possibly be happening to her. She said that she also had feelings of anger that were directed at her husband, as she initially blamed him for the pregnancy. At the same time that she recalled these initial feelings of being "freaked out", she further explained that later she experienced feelings of guilt that were tied into these beginning emotions.

> I feel guilty sometimes about being angry and "freaked out" about the pregnancy in the beginning. I could not help feel this way. I knew that I wasn't supposed to feel this upset, I just did.

This same participant explained that these feelings of guilt that she experienced were due mainly to her perception that the reaction socially expected in regards to pregnancy should be a very positive and happy one. Knowing that she

deviated from this expected response, led to these feelings of guilt.

> We had only been married six months and I was just not looking forward to it at the time. I just hadn't had the desire yet. It wasn't planned; we were trying to prevent it. With all this in mind I think it's understandable that I was devastated.

This woman admitted to having a mind set that pregnancy was just not part of the plan of life at this particular time. She explained that she was very involved with a new career change; she was very content and happy with her life now. The changes that were perceived to be necessary regarding her career in relation to the pregnancy, and then a newborn baby was frightening to her. The realization that life was going to change, and not according to her personal plans, was an explanation for her verbalized feelings of "devastation".

The mixture of feelings were perceived by the participants as either positive or negative reactions. Reacting excitedly, happily or even with shock were perceived as positive emotions, ones that would be expected by most pregnant women, since this aspect of life of generally viewed as such a happy time. On the other hand, feeling unhappy, angry, devastated were perceived as negative emotions. Needless to say, whatever the perceptions were, the mixture of feelings that were expressed by these ten women belonged to them and were part of their personal experiences. These feelings, whether perceived as positive or negative in meaning, reflected the

beginning of the attachment process for each of these women, and the beginning of a far greater process that would encompass changing attitudes, beliefs, feelings, and emotions over the next several months.

Feeling supported. This mixture of feelings, after learning about the pregnancy, yielded a major theme of feeling supported that was clearly connected to their spouse's reaction to the news of the pregnancy. All the participants mentioned the supportive affiliation generated by their spouses as part of their first conceptualization of the pregnancy.

> I couldn't wait to tell him. He was thrilled. He was the one who didn't have any shock. It was really great to share the same feelings.

This participant related that her husband's reaction validated her inner sense of excitement that she was feeling. She verbalized that that his reaction lessened her sense of fear, indicating that she was not alone in this process and that whatever needed to be faced, would be faced together.

"He was grinning from ear to ear, running around like a little kid in the candy store." This participant expressed abundant jubilation as she recalled her spouse's reaction to the pregnancy. She relived the moments when she told him in a very special way that he was going to be a father. She spoke of how proud he was at that very moment and how his reaction actually gave her the strength she needed to deal with all of her personal anxieties about the pregnancy.

The reactions by the husbands, to the news of the reality of the pregnancy, were highly regarded by the women. These reactions did not have the same mixture of feelings as did their partners, in fact, the women expressed that their husbands were quite happy and excited, which seemed to help support the mixture of feelings that they were experiencing.

> My husband said he was happy and that made me feel good. I was scared and I told him so, but he reassured me that we would get through this together.

This woman expressed that her husband's positive reaction to the pregnancy relieved many of the anxieties that she was experiencing when she confirmed the pregnancy. She validated that some of her initial anxiety was due to wondering how her husband was going to react, considering that he had some health issues and the fact that the pregnancy was not consciously planned.

> I knew that I wasn't alone out there. I knew that there had to be other women who felt like I did. I felt bad that I couldn't share my husband's happiness, but he accepted how I felt and he let me know that it was O.K. and that we would get through this together.

The positive acceptance of the pregnancy by all of the spouses of the participants reinforced that this developmental and maturational crisis would be faced together. This seemed substantiated by the fact that all the participants described very mature, loving, and committed relationships with their spouses. Knowing that they were not alone in this was extremely important, and especially having their spouse's presence and support.

> To have a baby together with the most important person in your life is beyond anything that I can comprehend. His part in all of this is as important as mine. We are closer now than ever before. I would not be able to get through this without him.

The general sharing of feelings between the participants and their spouses when the pregnancy was first learned, corroborated similar emotions between the two parties, which validated for both the realness and acceptability of the emotions.

"I didn't know who was more excited, him or me." This participant shared being excited with her spouse. The level of this excitement was very intense for both, as she recalled the very special way that she told him of the news of the pregnancy. She said that at that very moment, their relationship changed to encompass that experience of "being one."

"I didn't say anything and neither did he. I'm sure he knew how disappointed I was with the news." This participant explained that her spouse acknowledged her feelings of disappointment by not saying anything. He did not want to discount what being pregnant meant to her. She further explained that his silence at the time validated the realness of her emotions and the acceptability that that emotion belonged to her.

The participants who voiced their feelings of devastation and being freaked out when they first learned about being pregnant said that their husband's reaction was

likely intended to help them accept the situation better, knowing that they were being supported.

> I thought my husband was going to freak to, but he didn't. I suppose this is because he is 35 years old and he could have done this ten years ago if he was married. He knew how I felt about the pregnancy and he seemed to respect that.

This woman expressed that her initial reaction of being "freaked out" focused on her feelings of not wanting to be pregnant. She was dramatic in her recollection that she and her husband were not planning to start a family now. She spoke of being very nervous about telling him the news because she assumed that he was going to react in the same way based upon previous discussions about "no family right now." She admitted that her husband's surprising acceptance and happiness about the pregnancy helped to cushion her feelings of unacceptance. She said her husband was tender and respectful of her "negativity" towards the pregnancy, which gave her the support she needed at that time, yet, it did not change her acceptance of the situation.

> My husband seemed really calm. He might have been scared because of the way I was acting, but I couldn't tell that much. He tried to put everything in perspective so that I wouldn't feel so overwhelmed.

This woman stated that initially she was angry towards her husband because he reacted positively to the news of the pregnancy. She said that if he had been angry, too, it would have validated her feelings. However, she indicated that in reflecting back to that time she knew that he meant only to be supportive in a loving way.

Being protective of this new life. Another theme that evolved from the participant's first conceptualization of the pregnancy was being protective of the new life that was growing inside of them. Being protective of this new life seemed instinctive as the participants identified various self health-promoting behaviors that they were practicing. These behaviors were characterized mainly through the practice of a healthy diet and exercise, in addition to taking vitamins, seeking prenatal care, and being overall responsive to the limitations imposed by the physical body changes of the pregnancy. The behaviors that these women identified with in response to the pregnancy did not at all convey any sort of health-reducing behaviors that would either jeopardize her health or the health of her baby.

The instinctive nature of this protectiveness was such that these lifestyle changes in behavior began immediately and were directly tied to the cognitive reality of the pregnancy.

> I knew I had to lay off the fatty foods because I was knew that this was not good for the baby. I realized I was eating for us both and I wanted the baby to be healthy.

This participant connected the healthiness of the maternal body to the healthiness of the developing baby. There seemed to be a certain reassurance that if these health-promoting behaviors were practiced, the odds of ensuring a healthy baby as the outcome were quite high.

The practices of a well-balanced diet, appropriate rest and exercise, no drinking or smoking, avoidance of ill people, and changing work habits in the professional environment to accommodate the physical body changes of the pregnancy became part of who these women were now. These were the identified changes that had to be initiated or modified now. There was a sense of immediacy heard in their voices, in fact, all the participants verbalized doing something from a healthy standpoint the moment the pregnancy was confirmed.

The psychosocial reactions that the women had experienced initially were overpowered by the intellect that connected a healthy lifestyle to a healthy baby. Whatever the mix of feelings that was first expressed over becoming pregnant seemed unimportant now. The fact was that a pregnancy existed and it was being responded to.

> When we went out to dinner soon after I knew I was pregnant I told my husband that I wasn't having anything to drink. He didn't want me to, either. I never gave it a second thought. It was automatic that alcohol was out for the next few months.

This woman initially acknowledged her disappointment and feelings of devastation when she first learned about being pregnant. She said that although she felt that way for many weeks after the confirmation of the pregnancy, there was never any question about altering her lifestyle to the degree that she connected to safety and having a healthy pregnancy.

> I try to eat salads and more vegetables and fruit, instead of snacking on a donut. I also am trying to get a little more exercise than I had been getting in the past.

This women clearly identified diet and exercise as primary influences in a healthy pregnancy. She connected a healthy maternal body to a healthy developing fetus.

"I feel very protective. I don't want anything to happen." Feeling protective was identified by this participant as sheltering her body now, mainly in the form of diet, exercise, and decreased activity to the degree that was necessary when she felt fatiqued. This protectiveness was described as an instinctive desire because the baby was relying on the nourishment that her body would be providing over the next several months.

"I want to do everything that I can to make sure that I'm not doing anything dangerous for the baby," said one of the participants. Another participant expressed, "I have wanted to do everything right since the very beginning to benefit the baby. I would never endanger the baby." These women who verbalized "doing everything right" and "not doing anything dangerous" discussed the role their bodies would play from a health perspective in determining a healthy pregnancy. Their bodies were seen as a source of life now for this developing baby, and that translated to initiating or continuing health practices would likely ensure a healthy pregnancy. What these women were saying was that if their bodies were maintained in a healthy manner and protected from harm, it would likely mean that their babies would be

healthy at birth. If certain health practices had not been done before, as consistently as desired for their own health, they would certainly be practiced now because there was a life that had generated from their bodies and was now relying on their state of being.

This theme of being protective of this new life continued as the pregnancy progressed, as well. What seemed to emerge as a focus in the later part of the second trimester was protecting their bodies against pre-term labor and the fetus against a pre-term delivery. Many of the women expressed that they had felt recurrent pre-term uterine contractions. They were intellectually aware of many of the complications of pre-term delivery. The concern now, in terms of behavior, was tailoring the work and exercise by becoming more responsive to the biological signs necessary to maintain the reassurance of a healthy predicable outcome.

Feeling a great sense of responsibility for the maternal well-being of this baby was completely tied into the maternal well-being.

> I was tailoring my day to how I felt. I gave up walking; I was just pacing myself. I was thinking of how all that will affect the baby.

This woman said that she was feeling many more contractions now, than she had felt in the past. She recognized that the walking activity seemed to stimulate the contractions. The walking activity that she loved to do had

to be cut back substantially now, so that she was able to lessen the threat of pre-term labor.

> I couldn't keep doing the things I was doing because I would have had the baby by now. Things had to change. I adjusted. There was no argument. This was the way it was.

This participant realized that her thoughts of maintaining a normal work schedule until the last one or two weeks of the pregnancy was a great misconception. She stated that she didn't realize how much working was actually a stress on her body.

As the pregnancy progressed, the participants were very much in tune as to how their behaviors would affect the baby. After all, the reality of the pregnancy was definitely more apparent for all of the women, mainly due to the changing abdominal size. Their personal limitations were more visible after having experienced several months of the pregnant state. These women clearly identified that their continued health practices or modifications of what had been started earlier, translated to a fair reassurance for a healthy outcome.

Connected to this experience of being protective of this new life was also the avoidance of guilt. A common thread identified in what these women were verbalizing was that they did not want to deal with any sort of guilt or responsibility should something happen during the pregnancy that would affect the baby, knowing that the prescribed healthy behaviors were not practiced.

"I would have had to face that abnormality everyday and if it were because of something I had control over, I couldn't face it." This participant admitted feeling a strong sense of responsibility for the well-being of this baby, knowing that it was being nurtured in her body. She explained that the ability to create as healthy an environment as possible for the baby over the course of the pregnancy was certainly in her realm of control, and a job that she had to know she accomplished to in the best way possible.

"I don't want to have any reason to say if something is wrong, that if I had done this or that, maybe I could have prevented this from happening." This participant spoke about the need to avoid any sense of guilt that would likely become apparent if something had happened to affect the outcome of the pregnancy in a negative way. She said that she did not want to experience that feeling, because that was a kind of guilt that would be difficult to forgive.

"I don't know that I could ever forgive myself if I knew that I had done something or not done something that in someway would have hurt the baby." This participant identified a similar sense of that guilt that would likely be felt if that protective nature for the baby had been neglected in some way. The ability to protect her baby through health promoting behaviors was clearly in her realm of responsibility.

It was a moral obligation of choosing to do the right thing that many of the women verbalized as being influential in their decision to maintain as healthy a status as possible over the next few months. One participant used the words "it was the only choice not to take that drink I wanted." Another described that same meaning, "I never thought twice about what I needed to do." Their bodies were identified as the source of life for their babies, and the responsibility for that source of life was the foundation for this identified moral obligation.

Imaging the life within. Imaging the life within emerged as a major theme in the development of prenatal maternal attachment, as the participants described what it was like to be living the pregnancy in the present. This imaging clearly connected to a personal identification of the pregnancy, predominantly through the recognition of the physical changes occurring in the woman's body. At this point in the pregnancy, all the participants were between 14-16 weeks and all had begun to "show" ever so slightly, as the broadening abdomen became the direct evidence of the reality of the pregnancy.

At this time in the pregnancy, no fetal movement had been felt by any of the women. They identified that because of the lack of movement now, the physical changes in their bodies were the everyday tangible things that made the pregnancy real. This imaging of the life inside these women

clearly reflected more of a cognitive process than an affective one.

> I see my body changing somewhat, my pants are a little tighter around my waist. I haven't felt the baby move, though.

As this participant spoke of her changing body size and shape, she lifted her shirt to delineate the small "tummy" that touch with her hand. Her "tummy" signified the baby inside her as she identified that she had not yet experienced any sensations of movement.

"I have been experiencing a lot of body symptoms that really tell me I'm pregnant." This woman immediately identified the reality of the pregnancy as synonomous with all of the varied discomforts and unusual sensations that had been occurring over the last few weeks. She first spoke of the fatigue, nausea, loss of appetite, and backache as the significant factors validating the reality of the pregnancy.

> Intellectually, you know you are pregnant, but it is hard to identify with it. I don't feel anything inside, but I do have a little tummy now.

This participant spoke candidly about her cognitive awareness of the pregnancy, but having difficulty identifying with that knowledge that was solely based upon a changing body figure. She connected that difficulty to the fact that she had not yet experienced fetal movement, which was the obvious representation of the life inside her.

These women collectively fixated on the enlarging "stomach or belly" as the focal point or image of the

pregnancy. The image of being pregnant was clearly connected to their personal physical features and how their body was changing. They connected the word pregnancy or being pregnant to descriptions of themselves and how they were feeling. Whether it was the enlarging breasts or feeling nauseous, all the participants touched their bellies, identifying it as the confirmation of the pregnancy.

In addition to the enlarging belly size, the diagnostic tool of ultrasound served to be a strong factor in this imaging process for all of the participants.

"I see the baby on the ultrasound. I listen to the heart beat. It is so much more than I imagined." Being able to visualize the fetus in a picture gave reality to those mental images that this participant described. She said that being able to see the heart beating inside the baby was the image that was now set in her mind every time she thought about the pregnancy.

> I could see the outline of the baby on the ultrasound. You imagine in your mind what it is like, but it is different when you see it for yourself.

This participant validated that the ultrasound clarified her mental vision of the fetus at this stage of the pregnancy and helped to lessen some of the anxiety she was experiencing in regards to the well-being of the baby. She said the vagueness of the mental images that she envisioned in her own mind about what the fetus looked like really created an anxiety within her, especially in regards

to the physical development of the baby. Seeing the fetus on the ultrasound and being told that everything appeared to be normal, provided her with such a sense of relief and stimulated her to begin to enjoy being pregnant.

All of the women said that they had an ultrasound within the first or early second trimester of the pregnancy mainly for confirmation of dates and to check the status of the developing fetus. Having an ultrasound was something that each validated they wanted to have, not that it was necessarily indicated. The pictures obtained from the ultrasound were a more identifiable image of the fetus that was well beyond the intellectual images that each woman had processed up to this point in time.

This imaging, which was first acknowledged by the developing abdomen, and then more intensely confirmed by the pictures on the ultrasound led to the word "baby" being used by some of the participants. Now, being pregnant was not solely tied into her identification of the physical features of the gestational process, but rather an identification of a separate being within her.

"I was driving over a bumpy road and I said, "baby", I hope you are not feeling this." This participant used a "baby's voice" in relating her realization of this separate being by intuiting that her baby was feeling the same motions and movements that she was experiencing. Her change of voice from her natural pattern was soft and gentle, taking on more expression and emotion.

> I think about the baby, the actual baby everyday. I think more about the baby itself than I think about being pregnant.

Being pregnant took on a new meaning for this participant. She clarified that when she talked "being pregnant" it meant more of a condition, which reflected the biological processes involved in having a baby. Now, when she talked about being pregnant, her words reflected "the baby". She pictured the baby as that separate being, which was a much different and deeper realization now of what it meant to be pregnant.

"I rub my tummy, I talk to the baby and I do all those things pretty much on a daily basis," said one participant. Another participant said, "I realize it's alive person." For both of these women, that imaging of the growing life within them was a very natural phenomenon. The stroking of their bellies confirmed their realization that there was a separate being drawing life from them. In describing this imaging, there was more emotion in their voices, a sort of gentleness and tenderness that was expressed. It became apparent that for these women this imaging was the beginning of an affiliative component in the development of attachment.

For others the imaging of the unborn child did not occur as clearly at this time as expressed by one participant. "I've accepted the fact that I am pregnant, but I still can't picture a life within me yet." In part, this participant expressed difficulty in picturing this life

inside her, which she related to her feelings of dissatisfaction about being pregnant. At this point, she was faced with accepting the fact that the pregnancy was part of her reality, after all, her belly was getting bigger which was acknowledged as she showed her tummy bulge. Beyond that acknowledgment, however, her ability to image that separate being had not occurred.

"It's so hard to imagine the life within me that I can't feel." The difficulty in imaging this separate life was related to the fact that this participant had not actually felt that life within her, which would have been validated by fetal movement. She claimed that she had very few of the physical symptoms that go along with being pregnant. She said that if it were not for her tummy getting bigger and the fact that she had already seen the baby on ultrasound, she might not even know she was pregnant.

> Now I can actually say the word "baby." I couldn't say that word until now. I called it "it." I called it anything except "baby."

This participant had initially expressed her unhappiness with the fact of being pregnant. Her voice was somewhat emotionless as she was reflecting her feelings. She admitted that the word "baby" was uncomfortable for her to use because she was still going through a difficult time with her personal acceptance of the situation. She clarified that her ability to refer to the "baby" instead of "it" was helping her to find a calmness and peace about the

pregnancy and to know that the situation was not going to change.

Being connected to this growing life. Another major theme that emerged from the data about the developing attachment during this time in the pregnancy was being connected to this growing life. This connectedness featured mainly physical components, and to a lesser degree, affiliative ones. Most of the participants verbalized this connectedness when they were asked to describe the relationship that had developed to their unborn child.

The word "relationship" was not what these participants identified with, in fact, all the participants struggled somewhat with the use of this terminology. Their responses were not immediate, and their reactions through facial expressions and verbalizations was not so easily related to.

"I haven't really thought about a relationship yet." For this participant the word relationship, as she explained it conveyed more of a sense of an emotional experience, rather than a physical one. She frowned as she gave her response much thought. This relationship was unfamiliar to her at this point in the pregnancy.

Interestingly, even with the educational and professional backgrounds of these women, the participants clearly admitted that they had not perceived the pregnancy on a level as having a relationship with someone. The word attachment was not used readily in the course of these

descriptions, even though all the participants identified an awareness of the word attachment, and did relate it to experiencing a relationship with someone.

> I know I didn't feel attached when I first found out I was pregnant. I don't think of what I feel for the baby in those terms. We are definitely physically and emotionally connected in the sense that I am happy and excited about this baby.

This woman spoke mainly of the physical connection with the fetus, in terms of the baby drawing life from her, but she had difficulty identifying with using the word relationship because she explained that that involved more of an emotional component with someone who was able to exchange that emotion.

"I feel connected like I don't want anything to happen because we have wanted this for so long." This woman described her relationship to the fetus as more of a physical connection, in that she was still very concerned about the well-being of the fetus due to some maternal health problems she was experiencing. She added that she was intentionally "holding back" some of the emotional feelings that she wanted to experience, which tied into her fear that something might "go wrong."

> I haven't really attached emotionally; probably because I'm still early in the pregnancy. Physically, we are connected in every facet which is so much easier to identify with.

This participant had very sound knowledge about the meaning of attachment because she worked in the area of labor and delivery. Personally, she did not identify with experiencing an "attachment", which she said really

surprised her. She explained that on a personal level attachment involved much more of an emotional component, something that she was unable to identify with. The relationship for her with the fetus at this point in time was purely a physical one based on all of the body changes that she was experiencing.

> Attachment for me is connecting to all the feelings I have about the baby and how happy I am to have the baby and to be connected to this life inside me. I think I felt attached when I first learned that I was pregnant.

This woman was the only participant to readily use the word "attachment" in her description of the developing relationship to the fetus at this time in the pregnancy. She also used the word "connecting" as giving meaning to this attachment. She described this attachment as beginning as soon as she learned about being pregnant. Her outward expressiveness and the happiness she described about the moments early in the pregnancy seemed set aside from the reactions of all the other participants. She identified this attachment more in terms of an emotional experience than did all of the other participants.

The term connectedness fit well with the descriptions of what these women called a "relationship". The physical connectedness spoken about by the majority of the participants was due primarily to the bodily changes that represented the existence of the pregnancy. Intellectually, these women had the awareness of the baby growing inside them, but beyond that intellectual awareness, there was

little awareness that existed in terms of an emotional nature. The primary reason for this physical connectedness was due to the bodily changes were continuing to occur on a daily basis. These were the only tangible processes that reinforced the presence of the pregnancy on a daily basis. Yes, the knowledge of a living being beyond herself had already been acknowledged, but incorporating that knowledge and having it become more personal and of an affective nature, had not occurred at this time for the majority of the women in this study.

For others, describing a sense of this relationship was not so easily identified. As one participant expressed, "It's very abstract for me. Even though I have seen the heart beating I can't believe it was coming out of me. I don't feel any sort of a relationship yet." Another participant stated, "It's hard to identify a relationship with something that you can't see or feel. I thought it would happen with the ultrasound but it didn't."

These women described the meaning of a relationship as something much more tangible and emotionally filled than what they perceived at that time. These women previously had difficulty imaging the separate life within them, which most likely made experiencing this phenomenon more difficult. They also had earlier described their dissatisfaction with being pregnant because it was not a planned experience.

Experiencing the reality of the life within.

Experiencing the reality of the life within was a major theme elicited in the descriptions of the participants as they were asked to recall what it was like to feel the baby move for the first time. This experience of fetal movement was the phenomenon responsible for validating the reality of the pregnancy state.

For many weeks of the pregnancy before the movements were felt, these women relied on the physical changes in their bodies, the pictures of the fetus seen on ultrasound, and their intellect as confirmation of the reality of the pregnancy. At that time, though, the reality of the pregnancy remained on a cognitive level as described by the participants. Being pregnant was what they knew, not so much what they felt, other than their personal physical discomforts.

The first sensations of fetal movements changed that level of reality. It was more defined now, which allowed the women to focus more on what this life-changing event really meant. All of the participants mentioned that the experience of fetal movement was the most important event in terms of identifying that the pregnancy was "real". The fetal movements had been felt by all of the participants for several weeks now and served as a continuous reminder about the life inside them.

> When I felt the baby move it made it seem so real. My body tingled all over when I realized that I was feeling the baby move.

This woman spoke about the first flutters she felt. At first, she explained her uncertainty about whether the flutters were the baby movements, but as they continued she soon realized that indeed these flutters were the gentle movements of her baby. From that time on, she said that she was so excited awaiting the next movement and the next. Soon the movements were coming very often, which she confirmed made the reality of the pregnancy so much more vivid.

> I remember being anxious about the movements and wondering what it was going to feel like. I had been told it was like butterflies. I was anticipating it so much that when it first happened, I think I missed it. But then it seemed I was very sensitive to it. It was so incredible! For me, I felt more pregnant than before.

This woman explained that her words, "feeling more pregnant than before" after identifying the first baby movements, meant that the pregnancy was more of a reality now. She discussed moving from "knowing about" the baby to "feeling" the baby, which she said was a huge difference in how she thought about being pregnant. These fetal movements validated the presence of a separate being inside herself, which was much more reality based than any pictures or descriptions could provide.

One participant expressed, "I wasn't sure at first if I felt the baby moving or if my stomach was gurgling. But then I felt it again and I had the sense that this was for real." Another expressed, "After I felt the baby move I said to myself that this is real." For both of these women,

the ability to feel the movements confirmed the reality of life, and that confirmation of life was the essence of what made this state of pregnancy more real. That experience alone was more important than any of the other signs of pregnancy, even including the visualization of the fetus on the ultrasound.

These fetal movements were described as feelings that no one could even possibly imagine.

> I can't even describe to you what it felt like when I first felt the baby move. It happened so fast that I remember saying, "Was that it?" You have to feel it to experience it.

This woman was in awe of the experience as she recalled the first fetal movements that she experienced. She explained that her words of what that experience felt like could not possibly convey how phenomenal it was to feel the movement of another human being inside you. She proceeded to say that the realization of just how incredible the movements were, had to be experienced at the time and enjoyed at that very moment, because it was not possible to relive them in your memory.

"To experience this being inside you move is beyond what you can imagine." This woman explained how she felt when she recalled the first baby movements. She explained that she was not able to describe to anyone the reality of what it was like to feel that life inside. She said that she used to imagine what it would feel like, and then when it happened, she could not find any descriptive words to describe it.

The connectedness that the participants described earlier, which was clearly tied to the physical sensations of pregnancy, grew deeper and more affective in nature for the majority of the women. The sensations of fetal movement, by far, were the turning point in this process of attachment that grew from a cognitive experience to an emotional and affective one.

> I talk to him a lot. He likes to hear people talking. He enjoys hearing noise. He likes to hear people happy, he especially likes to hear dad talk to him.

Being connected to this growing life was now an emotional experience for this participant that was pervaded by the realization of the individuality of the unborn child. She immediately linked to identifying the gender of the baby, which she had known intellectually for a few weeks, but now began to use in her conversations as these movements confirmed this life within her.

> I'm not concentrating on the fact that this baby is growing inside me; that was before. I knew that it was me that was sustaining his life. Now, it is more what I would call love and even emotions that are hard to put into words.

This participant explained that her emotions were difficult to put into words. She related this difficulty by comparing her emotional experience to a physical one. She further related that experiencing the physical nature of something, like having a headache or feeling sick, is so much easier to identify with because those sensations are common to everyone. To her, feeling the baby move inside is

a very selective experience, as it accentuates an emotional connection that cannot possibly be identified by everyone.

After the first sensations of fetal movement had been experienced, these women were more expressive of an emotional connection now, rather than the concentration on the physical connection. Using the word "relationship" was easier for these women to identify with now, due mainly to the validation of life that was recognized through the fetal movement.

"For me, I think about having a relationship with another person. I don't think I thought about the baby quite in those terms until now." That entity of feeling life seemed synonomous with experiencing a relationship for this participant. The fetal movements were evidence of that life which changed the nature of the pregnancy.

Several of the participants indicated that this emotional attachment also became more apparent as the pregnancy progressed and the risk of loss had been minimized. Experiencing the fetal movements provided a certain reassurance that the pregnancy had progressed to a fairly safe time. As one participant said, "I've allowed myself to become emotionally attached because I'm over the scary part."

Using the word attached was a phenomenon that this participant could identify with now. She explained that her perception was that the meaning of attachment was

emotionally based on feelings, but very much tied to this life that she could really connect to now since the fetal movement had started. She validated that because the pregnancy was progressing in such a healthy way she had "put down her guard" and allowed herself to relax and enjoy everything about this time.

> Now that everything is going along so well I can feel myself becoming more in touch with my feelings for the baby. I didn't want to deal with them before in case something happened. I would be devastated if anything happened now.

This participant also identified the importance of this time in the pregnancy as providing some sort of reassurance of a safe passage. She explained that she knew she was well beyond the "danger point" that existed in the first part of the pregnancy concerning spontaneous loss. Just knowing that allowed her to identify more fully with the emotional part of the pregnancy, which seemed to be occurring at this point because of the continuous movements that she was experiencing. She related that because of this emotional extension of this connectedness now, any negative impact on the health of the baby would be very difficult to deal with.

> It's almost like you detach yourself so that if you did lose the pregnancy it wouldn't hurt as much. Now, I feel that I have really been able to experience the joy of all of this so much more.

Being in the later part of the second trimester now provided a great reassurance for this woman, as well. She had been experiencing some personal health problems earlier in the gestation, which she perceived as threatening the continuance of the pregnancy. She admitted earlier to

withholding from the emotional part of being pregnant in order to avoid the pain that she would have to endure should something negative interrupt the continuance of the pregnancy. She explained that this was why she had difficulty describing a "relationship" with the fetus at that time. Now that the fetal movement had occurred, she admitted that she could not hold these feelings back anymore.

Not all of the participants were able to connect to this emotional affiliation that seemed to emerge after the first movements were felt.

"I was waiting for that magical moment when I thought I would feel some sort of closeness or attachment. It just hasn't happened." This participant spoke very painfully about an emotion she wished she had been feeling. She related that her lack of a more emotional tie to her baby was clearly related to her lack of intent on becoming pregnant.

> I don't really feel any sense of a relationship. I don't know that I feel anything right now in that way. The relationship ship for me is that I know what I do affects her. I don't feel love or anything for her yet because it's not there. It's more of a curiosity, about what she is going to be like.

This participant verbalized an initial response of being devastated by the news of the pregnancy when it was confirmed many weeks ago. As she spoke about the fetal movements, her voice lacked the joy and sheer amazement of this phenomenon that was heard in the descriptions of many

of the other participants. The attachment she described seemed characterized by the biological nature of the relationship and a sort of curiosity about it all. She expressed her non-readiness to feel on an emotional level.

The thoughts about why these women didn't feel this emotional bond seem tied very tightly to their initial disappointment and devastation about the pregnancy in the very beginning of the gestation. They explained an inability to deal with all the emotions and changes that had been and would be created by the pregnancy.

In the development of this process of attachment, the theme of experiencing the reality of life was also a turning point in the realization of this unborn child as a separate individual. This became apparent as all the participants made many references to the gender of the baby as they spoke about the varying patterns of fetal movement.

> From the time of the movement, he has been himself. He's definitely got a distinct personality. He's very particular about what he likes and what he doesn't, he's very reactive to things.

This participant described an identified temperament to her baby, based upon the various cycles of fetal movement. The nature of these movements encouraged this woman to acknowledge the individuality of her baby by referring to the gender in her descriptions.

> My baby seems to be awake most of the night. There are times when I think he wants to play because that when he is the most active. I've gotten some pretty strong kicks right under my ribs.

This participant was very much in tune with the fetal movements of her baby. She was able to connect meaning to these movements, which enabled her to establish the individuality of her baby.

> When I'm sitting on the couch with my husband I have him feel my stomach when the baby is moving. My husband hopes if it is a boy that he will be a quarterback. I just tell him to stop kicking so hard so I can rest.

This participant did not know the sex of her baby, as she and her husband wanted to be surprised at birth. Yet, the various patterns of the movement were very connected to traits that are individual to a boy or girl.

These participants were collectively in touch with every sensation that was felt in terms of fetal movement. They commented on how they seemed to "know" the baby now on a personal level, identifying individual traits that coincided with their behaviors. These women gave meaning to these movements, which seemed to be a part of identifying this individuality. One participant said that her baby "squirmed" because she was watching a very scary movie on television one evening. Another admitted to feeling just "flutters" when she would listen to very soft music at night just before going to bed.

For many, the tool of ultrasound further assisted in formulating this individuality. All of the participants had at least two ultrasounds, and more than half of them knew the baby's sex, or at least were fairly sure of this in the latter part of the second trimester. The sex identification

seemed to reinforce the reality of the baby now as a boy or a girl.

"Since the day we found out he was a boy, he's always been "Sean" and not "the baby". When we talk about him it's like he is already here," said one of the participants. Another participant said, "When we found out the baby was a boy we started to search for names that each of us liked. This is Matthew or a Michael." These women identified the baby by name, as they spoke of their boys in conversation. These names were meaningful, as there likely had been a lot of thought in selecting the perfect name. These names signified these babies as individuals that identified them as very special.

Even for the participants who earlier had difficulty describing an emotional affiliation toward their unborn children, spoke about their babies using an identifiable gender. They, too, verbalized certain characteristics about their babies' movements, which contributed to an identification of their individuality.

One of the participants said, "She seems to move more in the evening when I am just doing nothing. My husband loves to put his hands on my belly at night so he can feel her moving." This participant had earlier commented that she was waiting for the magical moment to occur when she would feel that instant emotional tie to her baby. Despite the fact that she was not able to experience with this

feeling yet, she spoke about her baby as "her" in all of the descriptions about the baby's movements.

Creating a dream or fantasy. Creating a dream or fantasy was a major theme that emanated from the participant's descriptions of the developing maternal attachment. The pregnancy, now in the latter part of the second trimester, enabled the participants to create this intellectual phenomenon that was based upon the substantiation of the realness of the pregnancy that occurred after the fetal movement.

Because the experience of fetal movement signified the reality of the pregnancy, the majority of the women were able to move from the intellectual reality and developing psychosocial awareness to dreams and fantasies about the baby. The risk of a negative outcome of the pregnancy at this time drew less attention by the participants because the pregnancies for all were progressing in a normal fashion. Any risk factors that pertained to any of the participants in the study were well under control at this time and were not a threat to the continuance of the gestation.

"I can't wait to see him. We wonder whose eyes he will have and what his hair is going to be like." The ability to dream and fantasize about the baby was occurring very often for this woman, especially now that the pregnancy was more than half over. She explained that the "bigger" she got the fantasy about the "Gerber like baby" was in her

mind constantly. She said she would daydream a lot, seeing herself holding the baby in her arms. She said that she was mentally able to form an image of the baby based on characteristics that she thought he would have.

"I see a boy with dark hair and brown eyes." This woman explained that she reached a point just recently in the pregnancy where she would look at pictures in magazines or see babies at the shopping mall or wherever she might be and immediately picture her baby in her mind. She said that she was doing a lot of this mental imaging because she was focusing more now on the ending of the pregnancy and how the labor and birth was going to be. She saw the color of his hair and eyes, focusing in on his face because that is what she had dreamt about on many occasions.

"There are a lot of times when I dream about what he will look like and how big he is going to be," said one participant. Another participant said, "I have a vision of her face." These women explained that their dreams and fantasies about the baby were occurring with more description now than earlier in the pregnancy. Obviously, the baby was much bigger in size now, which was comparable to that mental picture most people have in their minds when they think about a newborn baby. In addition, the baby kicks and turns were so well defined now, not just the flutters that occurred earlier. These participants also focused on the "face" and "looks" of the baby, as they had explained that these features gave identity to the baby as

being a part of oneself. There was a sense of "awe" in their voices as they verbally described these dreams and fantasies, which conveyed just how special this new life was.

The dreams and fantasies in a sense were a kind of imaging that had occurred earlier in the pregnancy. At that time, though, the imaging was more introspective, focusing almost entirely on the pregnant self. These women talked, then, almost exclusively about how they felt when they were first asked about what it was like to be pregnant. The focus was clearly on the experiences of all the bodily changes and discomforts up to that point, which was only 14-16 weeks gestation. The "baby" was not the focus of being pregnant then.

For most, that imaging was transformed into fantasies and dreams, which were clearer mental images, thoughts, and wonderment of life beyond the present state of the pregnancy. These fantasies and dreams were positive ones, which allowed the woman to continue that process of attachment to her unborn child and her new role as a mother.

For some, the fantasies and dreams that were occurring were not as clearly focused on the unborn child.

> There is a part of me that doesn't want to dream about what is to come. Obviously, you can't help but wonder about it all and what it will all be like when this whole thing is over.

For this participant, she admitted to still feeling overwhelmed with the pregnancy in general, and yet, she admitted to many times wondering about what life was going

to be like when the pregnancy ended. She admitted that her dreams were tied more closely to how her professional career and role as a mother were going to change her life forever.

> I'm at a point now in the pregnancy that dreaming helps me to focus on the fact that the pregnancy is going to end soon. I wasn't happy about being pregnant from the very beginning. It seemed like only yesterday that I found out I was pregnant and here it is just a few weeks away and I will be a new mother. I do dream about the baby, how she will look and who she will resemble but mostly I dream about me and what kind of a mother I will be and that really scares me. Hopefully, this all will prepare me for the future.

This woman clarified that her thoughts and dreams were also about all the changes in her life that needed to occur over the next several weeks. She admitted to being frightened by these changes because they were going to affect her life forever. Dreaming helped her to focus on her fears so that she could deal with them appropriately and be prepared as much as possible for her future role as a mother.

Anticipating the birth. The ability to dream and fantasize about the unborn child brought about the progression of maternal attachment to the theme of anticipating the birth. These women, who spoke earlier about how the pregnancy was perceived as a life-changing event, began to talk more readily about their ideas to do what was necessary to welcome this baby into the world and to ensure safe passage.

This life-changing event was a reality now, and in order to adapt to that change with desired ease, the women

began to shift their concentration on the present state of the pregnancy to the future state, which encompassed the physical and social needs of the baby and anticipation of the birth. Their thoughts and ideas about the baby's needs and their personal birth plan facilitated the gradual progression of the child as a separate individual apart from herself.

The concentration on the future solidified the reality of the present and moved the participants to another dimension of the pregnancy experience. The central focus of this entire process was now clearly beyond their space and being.

This ability to anticipate for many of the participants was tied closely with the identification of the baby as a boy or a girl. Over half of the participants knew the sex of the baby that influenced their decisions on the decor of the baby's room, clothing, and other particulars about the needs of the newborn.

> Now that we know it is a boy we are planning to do the room in a jungle theme. I've already picked out some jungle animals and next week we are going to look at a crib and wallpaper, and all that stuff to get ideas.

The pregnancy, just about two-thirds complete, had reached a reasonable comfort level for this participant to begin to share her ideas about welcoming her baby into the world. These anticipatory plans were special for this baby

and really helped to bring the dreams and fantasies to reality.

> I think knowing the sex has made it easier to plan what we are going to need for the baby. Of course, my friends want to know what to buy because it is a boy.

The preparations that were taking place with this participant were largely in the form of ideas. She indicated that she wanted to wait just a few more weeks before carrying out those plans in order to feel more reassurance about the baby's safety and good health.

"He's got a closest full of clothes already. His crib is set up, his cradle is together." For this participant, the anticipation had been going on for some time now. She was comfortable with this as she confirmed that her excitement about the pregnancy led to her buying some things along the way that have now added up to quite a bit! Her anticipation was actually being carried out through her actions.

What was common in the expressions of many of the participants was the attentiveness to the physical planning of the baby's entrance into the world. Themes, colors, clothes, bedding were just examples of items that were commented upon as reflecting just how special each baby was.

Anticipation for the baby's arrival was a special time for them to focus on certain needs outside of themselves.

This anticipation was described as seeing the "realness of it all", a "sort of completeness to a long process" and "giving a peace of mind that everything that could be ready would be ready" for this life event.

The theme of anticipating the birth was also evident as most of the participants spoke about their behavior accommodations that would be necessary as the pregnancy progressed. These behavior accommodations were also necessary in order to ensure the safe passage of her baby into the world. The self health-promoting behaviors that had started when these women first learned about being pregnant continued with the same drive as they had begun. Now that the women were experiencing more of the physical discomforts of the pregnancy, adjustments had to be made to their daily routines in order to see this gestation to an end. The outcome for a healthy full term baby was the goal now, and the plan that would help to accomplish that goal was clearly centered on her state of maintaining health.

Some discussed plans for reducing their workload over the next few weeks. One participant said, "I've already made arrangements at work, should I need to take off earlier than I planned." This participant realized that her plans to work up to a certain point in the pregnancy, which had been set many weeks ago, would likely need to be

adjusted to how she physically felt. Now that the pregnancy was so advanced, she admitted to not having the stamina to complete her routines as she had first thought she could. The planning that she was doing relieved her of professional responsibilities in a manner that was acceptable to her, while focusing her primary efforts on staying healthy.

> I know that I won't be able to work up until the time that I have planned. You think you can when the pregnancy starts, but its another story when it all happens.

This woman was sensitive to the needs of her body as the pregnancy seemed to become more demanding. The level of activity that might have been sustained many weeks ago, was not able to be continued at that same level. Her realization of this increased demand, allowed her to plan the remainder of the pregnancy in a more practical manner.

"I've noticed that I need to rest with my feet up more than I did before." This participant acknowledged how her body was responding to the increasing demand placed upon it by the pregnancy. She confirmed that she was more tired now. She was seeing outward signs of feet swelling which was an indicator that she needed to rest more often than she was doing several weeks earlier.

"I know that when I do a lot of walking I have more contractions. I've really had to take it easy, lately."

This participant's job entailed an increased amount of walking in the hospital where she taught. Interacting with students on a continual basis in this setting created this increased activity level now. Normally, she had no difficulty with the job requirements, but now being quite pregnant, she realized this activity had to be curtailed. She experienced an increased amount of contractions, which served as a warning to her to slow down her pace.

> I think I'll work only one or two more weeks and then I will take off. The walking that I do in my job is making me have a lot of contractions. I need to be very careful.

This participant was very sensitive to what her body was telling her in response to the type of activity that she was performing. She, too, spent a lot of time on her feet and she also was experiencing increased uterine activity. Her concern right now was pre-term labor and the implications of what that might mean for a pre-term delivery.

These women were mindful of the demand that the pregnancy created on their bodies. Many of the physical discomforts were becoming more intense now. The theme of protecting this new life that had been embraced by these women when the pregnancy was first confirmed, continued with that same intent to work towards a healthy outcome. The behaviors and accommodations that would be required to make

this outcome a reality were incorporated into their everyday lives.

Anticipating the baby's arrival also included planning for the labor and delivery. This process was talked about by most of the participants as they were able to express their thoughts and fears about that unknown experience. The birth process didn't seem so far removed now. They were faced with the reality that in a few weeks that experience would unfold. They had expressed wonderment about what that process would be like based upon their knowledge, background, and personal stories that they had been told. Many were already discussing how their pain might be managed and the hopes that they would experience a normal birth process.

"The first thing I am going to ask for is an epidural because I know I don't cope with pain very well." This participant was already anticipating the labor and delivery. She admitted that her pain threshold was small, which created some anxiety for her regard the actual birth process. She said that she needed to plan for this with her physician in order to reduce that anxiety.

"I'm planning on a natural delivery if I can, but if the pain is too much to cope with, I'll need something." This participant was already anticipating her prenatal classes. Her desire was to have a birth without medication, yet she was very much aware that perceiving

what the pain would be like was much different than actually experiencing it. Her plans were a kind of goal that she had set for herself.

These women began personalizing that birth plan. They expressed that need to think ahead and have expectations about the labor. This anticipation was described as giving them a sense of control over the situation and decreasing their anxiety somewhat about processes that they had never experienced.

In summary, these ten women described maternal attachment before birth as a phenomenon encapsulated by physical, emotional, psychosocial, spiritual, and cultural components. Their stories vividly captured a time in their lives that was acknowledged to be life's greatest and most meaningful event. The essence of the developing themes of prenatal maternal attachment captivate the growing awareness of the fetus developing in side the woman as evident by the changes in her physical appearance. That continued growth and the validation of life through the sensations of fetal movement, led to this developing attachment that moves from a dimension predominantly characterized by a cognitive experience, to a dimension that is pervaded by emotional and affiliative discoveries. It is the emotional and affiliative dimension that provides a real perception of this developing relationship as described by the majority of the participants.

Chapter V: Discussion of the Findings

Women who were living the experience of pregnancy described the process of attachment that developed toward their unborn child over the course of the pregnancy. The themes that were extracted from their expressions of the thoughts, actions, and feelings, as they were living this experience have validated many of the theoretical perspectives about the process of prenatal maternal attachment.

The potency of this human experience described by Deutsch (1945) and Leifer (1977) has been validated in the profound expressions of ten women who candidly and heartily described a living phenomenon that was identified as perhaps life's most meaningful experience.

Rubin (1977) discussed pregnancy as a developmental crisis for the family requiring intrapersonal and interpersonal adjustments. Leifer (1977) also described pregnancy as a crisis that requires a reorganization of roles, especially for the woman. All of the participants, in some way or another, verbalized that the pregnancy was going to change their lives and would require restructuring and reorganizing of their personal and professional roles.

The theme of awareness of a life-changing event validated the theoretical perspectives of Rubin (1977) and Leifer (1977) as the participants focused on themselves as the center of change, both personally and professionally.

Indeed, the state of being pregnant was perceived as a crisis for all the participants in this study, even for the most psychosocially adjusted and prepared individuals. Pregnancy, as a developmental and maturational crisis, was also expressed through the mixture of feelings described as the participants first reacted to learning about being pregnant. This period of crisis was especially heard in the voices of those women who described the pregnancy as an undesired experience at the time.

Lederman (1984) also supported the theory that pregnancy, as maturational crisis for the woman, creates a stressful situation for her, as she has to adapt her intrapsychic and biological being in readiness for parenthood. Many of these participants began to imagine themselves as parents soon after confirmation of the pregnancy. This immense role, as it was imagined to be, created a stressful situation for many, which validated the mixture of feelings they were experiencing.

In response to this developmental and maturational crisis, Lederman (1984) noted that a woman must reassess her self-image, beliefs, priorities, behavior patterns, and relationships with others in preparation for parenthood. All the women in this study were perceived to have positive

self-images as evidenced through their conversations about their lives. They spoke of close relationships that they had with their partners and others significant persons in their lives, as well. Most appeared to be happy and well adjusted to being pregnant. For some, though, pregnancy was not a desired experience and there continued to be expressions of disappointment about their state of being. Perhaps, some of the emotions expressed by the women who had not intended to become pregnant, were in response to difficulty in redefining that personal identity, and priorities, both personally and professionally.

Regardless of how the pregnancy was being perceived, all of the participants validated Lederman's (1984) theoretical perspective that emphasized a reassessment of behavior patterns in response to parenthood as the women immediately recognized the need to incorporate health promoting behaviors into their everyday lives. All of these behaviors, some beginning the same day as the pregnancy was confirmed, required the woman to focus on a presence outside of herself as the force driving this particular activity. These acts of being protective of the life growing inside her marked the intellectual awareness of the fetus as a separate entity apart form herself that Rubin (1977) spoke about in the prenatal literature.

Rubin's (1977) literature has identified that one of the crucial factors to the development of maternal attachment during the prenatal period was acceptance of the

pregnancy, which generally occurs during the first trimester for most women. This acceptance occurred for all the participants at least by the early second trimester. As the majority of the women spoke about their pregnancies, their faces glowed with absolute delight. Many of the initial feelings of fear, shock and disbelief had subsided as they expressed a true happiness about their state of being. However, for some, though, this expression of happiness was missing. Even though they had intellectually accepted the state of being pregnant, the glow in their faces was absent. One element that might be interpreted as influential in their difficulty reaching a more positive emotional acceptance of the pregnancy was the fact that their pregnancies were described as not intended. Perhaps, this phase of acceptance that Rubin (1977) described as leading to maternal attachment had not been completely resolved, considering the overwhelming emotions that these women were dealing with and the fact that they were still in the very early part of the second trimester of the pregnancy.

Interestingly, studies by Cranley (1981), Kemp and Page (1987), and Muller (1990) did not support the variable of intendedness of the pregnancy to correlate significantly with prenatal maternal attachment. However, the participants in these studies were mainly in the third trimester of the pregnancy, which was well after the women had time to adjust, accept the reality of the pregnancy, and experience the phenomenon of fetal movement. It seems

logical that the intendedness of the pregnancy was of little issue at that time when maternal attachment was being measured in these particular studies.

Rubin's (1975) suggested that the major developmental task of acceptance of the pregnancy is to insure acceptance of the expected child by those persons significant to her. This theoretical perspective was validated though the verbalizations of the participants as they described the feelings of support generated by their spouses in response to the reality of the pregnancy. In fact, all of the participants confirmed that one of their first actions after learning about the pregnancy was to arrange to share the knowledge with their husbands. Regardless of the manner in which the women reacted to the news of being pregnant, all of the spouses expressed acceptance of the pregnancy.

Rubin (1977) also spoke about pregnancy as a time of growth responsibility when the woman literally shares her body with another being which produces significant changes in the way she views herself and her future relationship with her child. This theoretical perspective of sharing was validated in the study as most of the women described feeling connected to this life that was growing inside of them. The physical changes that were occurring in her body were the main indicators of the changes in how she viewed herself, as well as being able to image herself in the pregnant state and as a parent to be, and image the fetus as a separate individual.

The process of imaging that the participants described validated the theoretical perspective of Penticuff (1982) who noted that the maternal conceptualization of the unborn child, as well as the biological accommodations on physical functioning, support the developmental progress in maternal identity. The maternal conceptualization of the fetus was enhanced for all the participants through the diagnostic tool of ultrasound, which validated or clarified the mental images of the fetus that already existed. All the participants in this study had an ultrasound for various reasons that related to the pregnancy.

The awareness of the fetus as a separate entity from herself was accentuated through the recognition of the physical changes occurring in response to the pregnancy state. All the women talked about the physical nature of the pregnancy, as the enlarging abdomen became the direct evidence of the reality of the pregnancy. Rubin (1977) noted that the maternal growth in size and weight, which related to the developing gestation, served to create a biological symbiosis between the mother and unborn child. The physical symbiosis discussed by Rubin (1977)) became apparent through this process of imaging, allowing the woman to create this mental picture of the life growing inside her.

The realization of the fetus as a separate entity that Rubin (1977) theorized about, seemed primarily connected at an intellectual level as her everyday awareness of the

pregnancy grew. Other physical changes created by the pregnancy had become more defined and pronounced, as well, which led to an increased intellectual awareness of the pregnancy. Comments about urinary frequency, walking differently, breast development, and general aches and pains all attributed to the continued realization that a separate entity existed beyond herself.

The realization of the fetus as a separate individual described by Rubin (1977) was magnified through the experience of the first fetal movements. These fetal movements provided the stimulus for these women to change her concept of the fetus, from a being that is part of herself, to a living baby who will soon be a separate individual (Bibring, 1961).

Rubin (1977) described the experience of fetal movement as a stimulus to the process of "binding-in". Rubin (1977) used the term "binding-in" to describe attachment, stimulated by the physical occurrence of fetal movement, which produces an awareness of another. In this study, the physical awareness of the unborn child seemed well established on an intellectual level, however, it was this stimulus of fetal movement, which really heightened the awareness of the fetus as an individual. These movements were a constant reminder that the pregnancy was more than a state of a maternal condition.

For most of the participants in this study, the experience of feeling a life inside one's body was the

stimulus that allowed the women to experience this process of "binding-in" that Rubin (1977) described, which was beyond the physical one, whether it be emotional, affective, or spiritual. For some of the participants, though, the fetal movements did not provide the stimulus of an emotional "binding-in." These women admitted having difficulty in connecting emotionally to the fetus, which they related to the fact that their pregnancy was an unplanned experience.

The occurrence of fetal movement as the pivotal point in creating this process of "binding-in" described by Rubin (1977), also supports the research data of Leifer (1977), who suggested that a variety of activities would be initiated by the mother to reflect a growing sense of the fetus as a separate entity apart from herself. These women all felt various movements during this segment of the interview process. Their reactions, mainly through body movements and touching their tummies, and to a lesser frequency talking to the baby in an identifiable manner, reconfirmed an ability to identify this being inside them as a separate individual.

Acknowledging the baby as a separate self was accentuated through the recognition of the individuality of the baby. Many of the participants referred to the baby as having a "temperament" as reflected from the various cycles of movement that occurred throughout the day. The nature of these movements encouraged some of the participants to talk to the baby, which added an affective component to this

growing psychosocial symbiosis. These particular activities engaged in by most of the women in this study supports Rubin's (1977) theoretical findings that imaginary conversations with the fetus are evidence of a growing sense of a developing relationship with the baby.

In addition, the individuality of the unborn child became more pronounced upon the identification of the baby as "male" or "female". Noticeably during the interviews, the participants who had knowledge of the sex of their babies, referred to them in the interview as "he" or "she." Even for the women who had shared their difficulties in developing this emotional tie to their babies because of the unplanned nature of the pregnancy, were able to use "he" or "she" in their descriptions. One participant called the baby by the name that had been selected very early in the pregnancy, which according to Leifer (1977) is particularly important in establishing identity of the baby. This identification with the sexual component stimulated typical social responses including naming, clothing, and toy selections. Many of the participants were just beginning to take part in some of these activities. Some were beginning to think about appropriate names and to collect pieces of clothing that they thought would be appropriate. Others still felt that at 26-28 weeks there was still plenty of time for these activities to occur. Nevertheless, all of these activities reflected a growing attachment toward the fetus.

The ability to dream and fantasize represented a major leap in the process of developing maternal attachment for most of the participants, as they were able to accentuate this psychosocial symbiosis that had begun to occur earlier through the experiences of fetal movement. Rubin (1977) and Leifer (1977) said that the fantasies developed toward the fetus and the preparatory behaviors were functionally significant in the development of maternal attachment to the infant in the psychological preparedness for motherhood. The idea of creating a dream or a fantasy was interpreted to be energized through the process of fetal movement.

Some of the fantasies, though, that were spoken about by a few of the participants were not so clearly tied to the fetus as Rubin (1977) and Leifer (1977) suggested. These fantasies were rather introspective, reflecting on maternal dreams of what life was going to be like after the pregnancy had ended. Because these women had not planned their pregnancies and lacked comfort with the state of the pregnancy since it was first confirmed, they expressed their difficulty focusing on the fetus as the main theme of their dreams and fantasies.

In summary, the themes about the evolving process of prenatal maternal attachment that have emerged from the unfolding stories of these women as they lived the experience of pregnancy, have magnified the knowledge that supports our understanding about this aspect of human nature. This knowledge is the groundwork from which future

studies can evolve to unfold new meaning and interpretation to the development of a women's relationship to her unborn child.

Chapter VI: Conclusions and Recommendations

The purpose of this study was to determine how women living the experience of pregnancy described the process of attachment that developed toward their unborn child over the course of the pregnancy. Their responses have been insightful in supporting theoretical perspectives about this process, and at the same time, have given rise to new interpretations that will likely serve as a stimulus for continued research about this phenomenon of human experience.

Critique of the Study

There are notable strengths in this study generated from the method of inquiry and the interpretation of the findings. The phenomenological method used in this study is the major strength of this particular research. The personal stories of these women sharing their experiences about the evolving process of prenatal maternal attachment during pregnancy, has added richness and depth to the existing theoretical perspectives about this process. That richness has come from the voices of these women when sharing their emotions, actions, values, and beliefs about a very personal and intimate experience with another human being.

What is most profound about this qualitative inquiry are the interpreted findings that suggest that prenatal maternal attachment actually begins upon the first notion of learning about the pregnancy, which is very early in the first trimester of the pregnancy. The mixture of feelings that each participant described in regards to their personal story was the beginning of that process of attachment for them. The suggestion that this process begins far sooner than ever studied in the quantitative sector, gives new data to increase the knowledge about prenatal maternal attachment. In addition, this suggestion also stimulates questions about how these feelings might be acknowledged during the course of prenatal care in order to promote this developing relationship over time.

Another strength identified in this study are the interpreted findings suggesting that the practice of self health-promoting behaviors, which were practiced by all of the participants in this study during pregnancy, may be a developmental piece in the process of attachment. These behaviors are protective in nature, practiced to foster as healthy a pregnancy as possible. These behaviors reflect the initiation of that protective nature, which women continue to practice for their children throughout the course of life. These behaviors became a part of who these women were.

Since promoting the health of the mother and fetus during pregnancy is a focus of the nursing role, much

emphasis needs to be placed on educating women about these self health-promoting practices in order that their personal health can be optimized to provide reassurance for a healthy outcome. With the suggestion that the practice of self health-promoting behaviors might be a developmental piece in the attachment process, how might the health teaching practices of the nurse be integrated into the everyday lives of pregnant women in order to influence that attachment process? This particular question can't be answered through the stories that these women revealed, but rather it serves as a challenge of inquiry generated to spark further research, not only to add to the existing knowledge about prenatal maternal attachment, but how that knowledge might become more meaningful and useful in the educational and clinical settings.

There are several limitations to be acknowledged with this particular study, as well. The task of recruiting woman to be participants in this study was originally thought to be a rather simple process by this researcher, until the task actually began. The established criteria for participant selection appeared very clean and direct; it seemed that this criteria would fit many more individuals than this study would ever need for data collection. Two very busy physician offices in Orange County agreed to assist with the data collection by providing the initial information about the study to those patients who met the sample criteria.

It was the researcher's intent to personally have contact with these potential participants so that they would feel comfortable and at ease with the intentions of the inquiry. However, these sites and the methods chosen for participant selection were quite unproductive in terms of providing access to women who met the criteria for the study. There are several explanations for this non-productivity. First, it was not possible for this researcher to be in the physician offices when these potential candidates presented for their appointments due to the researcher's job obligations and the fact that the physicians did not want the researcher to be present at the time of the patient's prenatal care. Retrospectively, this was the key as to why the recruitment from these offices was so poor. The researcher was not in command of the participant selection and explanation of the study.

There also seemed to be an issue with patient privacy, and the physician's obligation to protect that privacy should a potential candidate decline participation. The researcher did not perceive any leverage with negotiation, believing that obtaining the needed participants was not going to be an issue at all. The office staff, too, often forgot about the study and verbalized that they had not met any candidates who met the criteria for this particular study.

The fact that participant recruitment for the study was not optimized through the physician offices, the

participants were primarily recruited by word of mouth by the researcher to as many professional and non-professional persons that the researcher was able to contact. Because the participants in the study were in effect self-selected, it is not possible to know whether this affected the data collected.

The participants who were recruited for this study represented a group of women who were privileged. Physiologically, the women were all healthy, experiencing low-risk pregnancies. All had an ultrasound performed, which confirmed that all the fetuses were normal within the limitations of this diagnostic tool. The knowledge that their fetuses were normal may have encouraged these women to fantasize and dream about their babies in very positive ways, thereby decreasing any fears that might have surfaced had they not had this knowledge. Psychosocially, all the women were married and participating in very supportive and loving relationships. They were all college educated and employed professionally in careers that were very meaningful, both personally and economically. Would women who knew that they were going to birth a baby with a physiological deficit, or whose pregnancy was threatened by a high-risk condition reflect similar themes of attachment than were verbalized by the women in this study? Would women who are experiencing pregnancy without the support of a spouse or participating in relationships characterized by

abuse or violence elicit similar themes of attachment as those described in this study?

In addition, most of the participants in this study represented a medical/nursing background, which is not predictive of the greater population of women experiencing pregnancy. Their educational and professional backgrounds enhanced their basic knowledge of the pregnancy process and increased their awareness of the expectations of the pregnancy state. Would participants who represent a broader range of education and professions generate similar themes than are represented in this study?

Another limitation of the study relating to the medical and nursing backgrounds of most of these participants is that none disclosed any information about the practice of health-reducing behaviors that might have been practiced during pregnancy. Certainly, their verbalizations were assumed by the investigator to be true, however, there might have been some reluctance from the participants in disclosing this sensitive information if it existed because the investigator is also nursing professional and is known personally to some of the participants in a professional role. If these participants did not know the investigator, either personally or professionally, would such information have been disclosed that would have contributed additional findings to the behaviors women practice during pregnancy and how it might relate to the process of attachment?

The two-part interview process provided very rich data that assisted the researcher to ascertain how maternal attachment evolved and changed during the pregnancy. This time was quite lengthy, however, taking approximately three months for each participant to complete the data collection. In order to meet the human subjects approval for data completion in one year, the initial interview for all of the participants needed to occur within the first eight months of data collection. This seemed quite accomplishable until the difficulties began with recruiting participants. The risk that a participant could fall out of the study was actually quite significant, considering the high percentage of miscarriage with pregnancies in general. Fortunately, the two participants who did fall out of the study did so before the first interview occurred. As unfortunate as this experience was for them, it did not change the total number of participants that were finally interviewed and did not add to the time for data collection.

Implications for Further Research

Although there is a significant body of research using quantitative methods about prenatal maternal attachment, there is a dirth of information generated using qualitative methods. This is particularly apparent regarding

phenomenological studies that explore the lived experiences of women and the nature of this attachment as it evolves over the course of the pregnancy.

The findings from this study will hopefully create a desire for more qualitative inquiries about this prenatal phenomenon. The most obvious question is whether another phenomenological study about this phenomenon would yield similar themes of prenatal maternal attachment in a sample of participants who did not have the physiological and psychosocial privileges enjoyed by the women represented in this study. Recruiting participants who were not so heavily weighted with a medical or nursing background, yet using the same criteria for participation would be a primary focus for further research.

In addition, this researcher would like to proceed with similar studies that would progress a couple of steps further in regards to the interview process. The first step would include a third interview during the participant's third trimester of the pregnancy, which was not part of the time frame included in this study. Adding a third interview at this time raises questions about other themes that might have emerged in the descriptions of these women as they experienced pregnancy closer to the estimated birth date. The last step would include a fourth interview

after the birth to identify the link of prenatal maternal attachment to maternal infant bonding. Identifying this link would lend support to the theoretical perspectives that relate the beginning of the maternal-child relationship to occur during the prenatal period.

Planning the pregnancy was perceived to emerge as an influencing factor for some of the women in this study as they often spoke of difficulties in feeling the emotional connectedness to the fetus. They also had difficulty identifying with the "binding-in" that Rubin (1984) described which was characterized by a heightened spiritual and emotional sense for the fetus, rather than just the physical symbiosis marked by the fetus drawing life from the mother's body. Some of these women clearly admitted that their lack of emotion tied to their unborn child over the course of the pregnancy rested on the fact that the pregnancy was not planned, and more so, the fact that they were actively trying to prevent it from occurring through the practice of contraception.

Prenatal maternal attachment needs to be researched in these women who are experiencing an unintended pregnancy to see how the process of this phenomenon unfolds over the gestational period. The emphasis of this inquiry would need to focus heavily on the emotional component of this

attachment and how that emotional tie to the fetus changed over the course of the pregnancy. In order to provide some perspective on the nature of this relationship to the fetus in these particular women, the process of prenatal maternal attachment would need to be followed well into the third trimester and into the postpartum period, as well, to fully conceptualize the integration of this early relationship into the relationship established after birth.

Prenatal maternal attachment might also be studied in women who have experienced a previous pregnancy. Such women might be those who already have a child, or who have experienced pregnancy loss, or those who have lived through a high-risk pregnancy, either from maternal or fetal deficits. The issue raised here is whether these influences would yield different themes in this process of attachment than were identified in women who had never experienced pregnancy before. If such differences should exist, what might be some of the factors influencing these differences? This data might offer valuable insight to educators about this process of prenatal maternal attachment and how to best foster its development for all women over the course of the pregnancy.

This particular inquiry looked at the process of prenatal maternal attachment in women experiencing

pregnancy for the first time. These particular women were relatively low risk from a medical perspective and did not present with social variables such as substance abuse or family violence.

For the pregnant substance abusing woman, the normal adaptive processes and psychological patterns of pregnancy may be altered. Theoretical perspectives about substance abuse are numerous. It has been viewed as a disease, a moral failing, a psychological disturbance, a personality disorder, a social problem, a maladaptive coping mechanism, and a dysbehaviorism (Hughes, 1989). Whatever the view, substance abuse is a deviant behavior. How do women living these experiences describe the process of prenatal maternal attachment? Is this process different from women who have not experienced these life events? The findings obtained from the expressions of these women have the potential to provide the nursing community with added knowledge that may be integrated into the existing theoretical perspectives.

Culturally and ethnically, these women did not present a variety of backgrounds that may have influenced their process of prenatal maternal attachment. In fact, only one of the participants was of Asian descent; the remaining participants were Caucasian and American born. A study investigating the process of prenatal maternal attachment

in women, exclusively of different cultures, for example, Hispanic, Asian, or Middle-Eastern would be insightful in providing qualitative information about this phenomenon that is universally accepted as existing in all women.

Conclusion

This study has contributed to the profession of nursing by elucidating the process of prenatal maternal attachment in a group of physiologically and psychosocially privileged women whose voices validated the potency of the lived experience of this human phenomenon. The development of maternal attachment during pregnancy that was told in the stories of these women who lived the thoughts, actions, and emotions over the course of several months, has validated many theoretical notions of this phenomenon and has helped to support quantitative research as well. There are interesting thoughts and questions to contemplate, too, that have been raised by this study in regards to the beginning of attachment and the role that health-promoting behaviors play in this process. For example, does attachment begin with the first notions about learning about the pregnancy as this study has suggested?

Any study that poses new perspectives to be considered in understanding that phenomenon, as this study has done, generates more questions to be answered through additional

research investigations. Continuing this area of research can assist nursing, as well as other disciplines such as psychology and child development, in gaining valuable information about the process of prenatal maternal attachment.

The interpretation of the data has also given a new perspective to understanding the evolving process of prenatal maternal attachment that has not been presented before using this method of inquiry. The voices of these women telling their stories has helped to capture the essences of this phenomenon that Husserl (1965) explained in his writings about phenomenology. Continuing this area of research can assist nursing to gain more information about this phenomenon that is part of our human life. It is from the actual experiences of pregnant women, in addition to the theoretical dialogue, that nursing will continue to explore the phenomenon of prenatal maternal attachment and be able to gain more insightful understanding about its meaning to nursing education and practice.

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Appendix A

Introductory Letter

March 6, 1998

To Whom it may concern:

My name is Regina A. Giroux. I am a registered nurse clinically practicing in the area of maternal child health. I work full time as an instructor in a community college nursing program and part time as a staff nurse in a labor and delivery unit. I am currently a student in the doctoral nursing program at the University of San Diego.

I genuinely need your assistance! I am very interested in studying the attachment between a woman and her unborn child before birth. This attachment is the beginning of a relationship that a mother experiences toward her child over a lifetime. There are no research studies that have actually described this attachment in women who are presently pregnant.

As part of my doctoral work I am conducting a study whose purpose is to describe this attachment between a woman and her unborn child. I am interested in interviewing you to obtain your descriptions about this experience. I will need to interview you at least twice during your pregnancy. The initial interview will take place during the first part of your second trimester when you are about 14 to 16 weeks pregnant. The second interview will take place during the last couple of weeks of the second trimester, when you are about 26 to 28 weeks pregnant. Each interview will be scheduled at your convenience at a mutually convenient place and will last approximately 1 to 2 hours. There is the possibility that a follow-up interview might be necessary after one or the other or both of the interviews in order to clarify information of if there is anything you wish too add. The interview will be audiotaped with all the information obtained remaining strictly confidential. Your participation in this research is completely voluntary and will not influence your prenatal care. There is no monetary compensation for your participation.

If you are willing to participate, please call me at (714) 282-0522 and I will contact you to discuss your participation and any questions you may have. This is an important opportunity to better understand the nature of this experience from woman who are actually pregnant. This understanding will, hopefully, enhance the support of that attachment through the delivery of nursing care.

I thank you for your time and consideration with this opportunity. I look forward to talking with you very soon.

Sincerely,

Gina Giroux, RN, MSN

Appendix B

University of San Diego
Consent to Participate in a Research Study
Prenatal Maternal Attachment: A Phenomenological Perspective

Purpose and Procedure of the Study

Regina A. Giroux, a doctoral student at the University of San Diego, is conducting a research study to collect data that describes the nature of the attachment that develops between a woman and her unborn child. This attachment is the beginning of a relationship that a mother experiences toward her child over a lifetime. These descriptions will be obtained through an interview process that will occur at least twice during the pregnancy; initially during the beginning of the second trimester, approximately 14-16 weeks gestation, and second, during the latter part of the second trimester, approximately 26-28 weeks gestation. The interview will be audiotaped and will last about 1 to 2 hours. There is a possibility that a follow-up interview may be requested by the researcher or by the participant for clarification of information.

Risks/Discomforts/Benefits

Participation in this study represents no known risks or discomforts. If at any time I become uncomfortable the interview will be stopped immediately. Should I choose to withdraw from the study the tape of my interview will be destroyed. I understand that I will receive no compensation, financial, or otherwise. The benefits for participation are that most pregnant women are emotionally and physically healthy and like the opportunity to verbally express themselves about their pregnancy experience.

Confidentiality

I understand that my verbal descriptions will be kept completely confidential. Any personal identification will be coded and known only to the researcher in order to maintain anonymity. The audiotapes from the interviews will be transcribed by a paid transcriptionist or by the researcher. All tapes and identifying information will be kept in a locked safe accessible only to the researcher. All tapes will be destroyed after the study is completed. Further publication of this study for professional purposes may use excerpts from individual interviews, however, any personal identifying information will be altered so as to make the identification of any one participant impossible. I understand that my participation in this study is completely voluntary and that I can withdraw at any time without jeopardy to the continuation of my prenatal care. I have had the opportunity to ask questions about this study prior to

signing this consent. I understand that there are no other agreements, written or verbal, related to this study beyond that expressed on this consent form.

Authorization

I, the undersigned, understand the above explanations and on that basis I give my consent to my voluntary participation in this research. Please contact me at (714) 282-0522 should you have any further questions.

_____ _____

Signature of Subject Date

_____

Location

_____ _____

Signature of Researcher Date

Appendix C

Demographic Information Sheet

NAME _____ AGE: 21-30 YEARS _____
31-40 YEARS _____
PHONE NUMBER _____ 41-45 YEARS _____

RACIAL BACKGROUND: CAUCASION ____
AFRICAN/AMERICAN ____
ASIAN _____
OTHER _____

MARITAL STATUS: MARRIED _____
SINGLE _____
DIVORCED ____

OCCUPATION: _____

PRESENTLY EMPLOYED: YES ____
NO _____

EDUCATION (HIGHEST DEGREE OBTAINED): HIGH SCHOOL_____
ASSOCIATE DEGREE_____
BACCALAUREATE _____
MASTERS _____
DOCTORATE _____

WAS THE PREGNANCY PLANNED _____ UNPLANNED _____

HAVE YOU HAD AN ULTRASOUND WITH THIS PREGNANCY: YES ____
NO _____

Appendix D

Sample Interview Questions

Questions for the Initial Interview

1. Tell me about the time when you first learned that you were pregnant. Give as much information as you can, what you remember, how you felt, what you thought, and how you acted.

2. Tell me what it is like for you to be pregnant now. Give as much information as you can, how you feel, what you are think, and how you act.

3. Did your behavior change in any way after you learned about the pregnancy? If so, how did it change and why? Give as much information as you can, what you remember, how you felt, what you thought and how you acted.

4. Tell me what behaviors you do on a routine basis and how they relate to your pregnancy? Be as specific as you can and give as much information as you can.

Questions for the Second Interview

1. Tell me about the time when you first felt the baby move inside you. Give as much information as you can, what you remember, how you felt, what you thought, and how you acted.

2. Tell me how you feel when the baby moves inside you. Give as much information as you can, how you feel, what you think, and how you act.

3. Tell me what it is like for you to be pregnant now. Give as much information as you can, what you think, how you feel, and how you act.

4. How has your behavior changed over the last few months of your pregnancy? Give as much information as you can, what you remember, how you felt, what you thought, and how you acted.

5. Tell me what behaviors you do now on a routine basis and how they relate to your pregnancy. Be as specific as you can and give as much information as you can.