THE RELATIONSHIP BETWEEN THE MATERNAL IMAGE OF THE FETUS AND DIRECT VALIDATION OF THE PREGNANCY, ATTITUDE TOWARD PREGNANCY AND VIVIDNESS OF IMAGERY

by

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ABSTRACT

The objective of this study was to clarify the process involved in forming the maternal image of the fetus as a separate human being in the second trimester of pregnancy. How a woman forms a mental picture of her unborn child and factors which might have a relationship to this image have been explored.

Based on the review of the literature the major assumption of this study is that pregnancy is a developmental crisis and to successfully move through this crisis there are certain developmental tasks which must be mastered. The task of pregnancy on which this study focuses is that of perceiving the unborn child as a separate individual. Because certain factors may interfere with task mastery, the relationship between three variables and the maternal image of the fetus are investigated. The three variables include, direct validation of pregnancy, desire for pregnancy and vividness of imagery.

An instrument to both qualify and quantify the maternal image of the fetus has been developed as part of this study. The Desire for Pregnancy subscale of the Pregnancy Research Questionnaire has been utilized as well as the Betts QMI Vividness of Imagery Scale. Demographic characteristics of the sample such as age, socio-economic status, race, religion and marital status were also considered.

The sample consisted of 62 women in the 16th to 22nd week of gestation. Subjects volunteered to fill out a self-

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report questionnaire while attending early bird prenatal classes which are usually offered during the first half of pregnancy.

Results of the study indicated that there is a significant relationship between direct validation of pregnancy and maternal image of the fetus. A woman is more likely to imagine a separate individual if she has detected fetal movement and/or heard the fetal heartbeat. Findings also indicated that a significant relationship exists between desire for pregnancy and the maternal image of the fetus. An expectant mother is more likely to visualize a separate individual if she wants and desires her pregnancy. A significant relationship between vividness of imagery and the maternal image of the fetus was not found. Additional analysis of the data revealed that 77.4 percent of the sample most often imagine their unborn children as newborn babies in reference to the age of child imagined. Another interesting finding was that only 59.7 percent of the sample characterized their fetuses as normal or above normal when compared to "most" fetuses.

This study suggests directions for further research into the area of the perception of the unborn child. Clarification of the maternal image of the fetus and variables affecting this image have a potential predictive value and have implications for improved nursing care of the client in early pregnancy. vi

The Relationship Between the Maternal Image of the Fetus and Direct Validation of the Pregnancy, Attitude Toward

Pregnancy and Vividness of Imagery

Introduction

Statement of the Problem

Each pregnancy has characteristics of its own. The experience is both singular and matchless in nature. Women react to pregnancy in unique, individual and varied ways. No two pregnancies are the same. A woman may experience successive pregnancies with a diversity of reactions and feelings (Colman & Colman, 1973a; Block, 1979). Nevertheless, several authors (Deutsch, 1945; Bibring, 1959; Rubin, 1970) point out that there are certain psychological processes which are characteristic of the pregnant state. There are commonalities of inner experience which all pregnant women share. These experiences are unparalleled in that they are different than other experiences throughout the life span.

It is this individual variation within a common framework of pregnancy experience which is of great importance. One particularly fascinating area of this uniqueness is exhibited in a mother's perceptions or images of her unborn child. The manner in which a mother begins to picture her child in her mind's eye or perceive her child as a separate individual is in itself intriguing. Rubin (1961) discusses two crucial psychological activities which take place concurrently during pregnancy. The mother begins to perceive her unborn child as a separate individual, a human being with

characteristics of its own. At this same point in time she fantasizes what it will be like to be a mother. She tries on the maternal role through fantasy. These two processes take place as parallel activities. Caplan (1957) feels strongly that his studies have enabled him to believe that it is possible to predict during pregnancy the future motherinfant relationship. He bases his predictions on the mother's fantasies and dreams about her pregnancy. He feels that the perceptions or images a mother holds regarding her unborn child are diagnostic of the future relationship. Clark (1979) also points out that there is an important relationship between a woman's fantasy life with her unborn child or her conceptualization of her infant and the future relationship between mother and child.

Ballou (1978) also states that a woman's conceptualization of her unborn child during pregnancy provides a foundation for the way she perceives the child after the birth has occurred. She says, "A woman prepares herself during pregnancy for relating to her child postpartum through fantasizing, daydreaming, and thinking more or less planfully about the child" (p. 88). "This antenatal psychological work lays a basis for the woman's initial sense of attachment to the child postpartum" (p. 89). In order to adopt and accept a new role and relationship, an individual first tries out the role and relationship in fantasy or imagination. Rubin (1970) feels that an individual who can't imagine being a mother is rejecting the role. "Fantasy... provides silent rehearsal of roles..." (Rubin, 1967, p. 237). Young (1979) discusses the importance of knowing a client's

reactions or psychological adaptation to pregnancy. The need for an early medical diagnosis of pregnancy has been stressed but there should also be a determination of the factual and emotional understanding a mother has of her pregnancy and the meaning it has for her and her family.

In light of these findings it would appear that further understanding of the maternal image of the fetus and what variables effect this image could enhance the nurse's ability to counsel, support and educate pregnant clients. The possibility for early remedial intervention becomes more of a reality if understanding is gained as to the implications of these early maternal images. Possibilities for enhancing maternal-child relationships and encouraging adoption of the maternal role might be realized if nurses become more cognizant of the implications of early maternal attitudes and behaviours.

With early bird prenatal classes gaining wide popularity, nurses have a unique opportunity for interaction with women in the early stages of pregnancy. Their involvement in other prenatal classes, school systems, clinics and various community health settings opens many opportunities for nurses to intervene with a focus of primary prevention in promoting good mother-infant relationships. Understanding familiar patterns of expression of image of the fetus is one such indicator of the maternal-infant relationship and deviations from this expected pattern can provide a basis from which to initiate early interaction. Tilden (1980) points out that nurses often have the unique opportunity to interact with pregnant clients over extended periods of time during the prenatal period. This

nurse-client relationship can be utilized to evaluate a mother's mastery of developmental tasks and to enhance this mastery by various nursing interventions such as teaching and counselling.

Review of the Literature

The majority of the literature exploring the psychological responses to pregnancy has been psychoanalytic in nature and based on Freudian ego psychology, such as Deutsch (1945), Bibring (1959), Bibring, Dwyer, Valenstein & Huntington (1961), Bibring & Kahana (1968), and Benedek's (1959) early works. Another type of literature in this area has been based on case studies, often on women who had been referred for psychological problems as in studies by Caplan (1957, 1959). Anecdotal literature has also been well represented. The number of studies which attempt to explore theoretical concepts of the psychology of pregnancy in an empirical fashion have not been numerous.

For the purpose of clarity the review of the literature has been divided into sections. The first section includes those writings which describe pregnancy as a developmental process. Literature related to the developmental tasks of pregnancy are presented next. Finally literature pertinent to the related variables in this study will be reviewed. These variables include direct validation of the pregnancy, desirability of pregnancy and vividness of imagery.

Pregnancy as a Developmental Process. In the dynamic interaction between man and his environment, growth and directional change takes place. Change is goal directed and

follows a predictable progression throughout the life span. It is this theoretical assumption and other similar concepts that form the basis of Erikson's (1950) developmental theory which depicts growth and development in stages. Erickson's seventh stage of development is called "Generativity vs. Self Absorption" and one way this stage expresses itself is in solicitude for the next generation and its welfare. Two favorable outcomes for this stage are production and care (p. 231). Bigner (1979) goes on to state that one manner in which productivity in this stage may be seen is in the establishment of a family.

In her book on the psychology of women, Deutsch (1945) has depicted pregnancy as a period of developmental crisis. She refers to the time as being characterized by psychic imbalance or psychological disequilibrium. As with other crises the crisis of pregnancy must be adapted to. It calls for responses which restore the balance and resolve the crisis.

Bibring, et.al. (1961) refer to pregnancy as a developmental turning point or normal developmental crisis and state that pregnancy is an essential part of growth. The resolution of this crisis ultimately effects the early mother-child relationship. Psychological changes of pregnancy are mutually dependent. As a woman changes physically throughout her pregnancy there are certain concurrent psychological changes taking place. Nilsson and Almgran (1970) support this view by stating that pregnancy has been delineated in terms of physiological milestones and changes. Pregnancy follows a predictable sequence physiologically which is relatively

similar for all women. These authors go on to state that there are psychological concomitants of the physiological changes and that developing an expected sequence of psychological milestones can offer an understanding of the developmental adaptation to the crisis of pregnancy.

Physiological changes which take place at puberty have a tremendous impact on the psychological factors and developmental processes which ultimately lead to maturity and the adult personality (Benedek, 1959). This author depicts a chain of events which take place originating with the physiological changes of puberty which motivates development toward maturity and this maturity in turn is the motivating force toward mastering the developmental tasks of parenthood. The mind-body connection is supported by her feeling that mental growth and development after puberty continue under the influence of reproductive physiology. The same psychological mechanisms that are employed in achieving mental growth and development in other stages are used also in the parenthood phase.

In a later article by Erikson (1959), stated as a basic principle is that each developmental stage of the healthy personality is systematically related to all others and there is an interdependent relationship among these stages. They all depend on the proper sequence of each item. He also states that each stage involves an encounter or conflict and each stage becomes a crisis. "Each successive step, then, is a potential crisis because of a radical change in perspective" (p. 55). Deutsch (1945), Benedek (1959), Bibring, et. al.

(1961), and Caplan (1959) have all stressed that pregnancy is a period of developmental crisis involving psychological disequilibrium which provides a potential for adaptive solutions to previous conflicts.

Tanner (1969) classifies pregnancy as a developmental process again pointing out that it is a period of disequilibrium involving interdependent physiological and psychological Successful adaptation to pregnancy is seen as a changes. continuation of the process of maturity. Pregnancy brings about irrevocable change in the individual. The level of adjustment to this period of disequilibrium has a relationship to how the individual adjusts to future life changes. Pregnancy is a developmental process which, "constitutes a turning point in the life of the individual..." (p. 292). Loesch and Greenberg (1962) compared 22 married pregnant women and 31 unwed pregnant women in an effort to describe areas of conflicts or disturbances during the pregnancy period. These researchers utilized interviews with subjects to isolate and clarify certain themes of psychological conflict. The four themes isolated were, concern about the process and pain involved in labor and delivery and bodily changes occurring during pregnancy, concern about the normality of their infants, concern about changes in relationships with their husbands and concern about the baby's appearance and their assumption of the maternal role. Conclusions were drawn that both groups of mothers experienced psychic disequilibrium characteristic of a developmental crisis.

Pregnancy is a developmental stage according to Cranley

(1979). She too supports the idea that pregnancy creates psychological disequilibrium and points out that, "folklore concerning the capriciousness of pregnant women" is consistent with this theoretical standpoint (p. 6).

Tilden (1980) summarized pregnancy as a maturational crisis by the following four points: "Pregnancy is a biological event" with intense changes in physiological function and body image. "Pregnancy is a psychological event" which results in changes in mental functioning. "Pregnancy is a social event" which influences changes in interpersonal relationships and social roles. "Pregnancy is a transitional event" bridging the gap between stages of youth and adulthood. It also marks a generational transition from, "family of origin to family of procreation" (p. 670).

It may be seen that pregnancy is referred to as a developmental process, developmental crisis, developmental turning point, or developmental stage. Clark (1979) refers to pregnancy as a developmental task with subtasks to be accomplished, but regardless of these differing labels, they all have a common conceptual base. Pregnancy is a developmental crisis which necessitates successful completion by adaptation to that crisis. Adaptation involves mastery of certain developmental tasks in order for maturation to occur. The following discussion deals with the literature surveying developmental tasks of pregnancy.

Developmental Tasks of Pregnancy. In each developmental stage there are certain tasks or adaptive responses which must be accomplished for successful completion of a stage.

Just as the stages are interrelated so are the tasks, that is, it is necessary to complete earlier tasks adequately before more advanced tasks may be achieved. Havighurst (1972) points out that successful achievement of tasks leads to happiness and success with later tasks while failure leads to difficulty with later tasks, social disapproval and unhappiness. Moore (1978) stresses the importance of developmental tasks. Successful assumption of the maternal role is accomplished by task mastery. Women can develop personally as well as lay foundations for parenthood through effective resolution tof developmental tasks.

As one of the earlier authors in this area, Deutsch (1945) describes a progression of tasks in pregnancy that includes incorporation of the fetus, investing it with narcissistic love and finally coming to appreciate the fetus as a separate individual. Caplan (1959) is more specific as he identifies three basic tasks. The first one involves the mother's attitude toward the pregnancy and here the task is to adopt a growing acceptance for the pregnancy over the course of gestation. The second task involves the mother's attitude toward the fetus and here the task is to perceive the fetus as an individual, as a separate human being. The third task involves the mother's attitude toward the baby-to-be. Here she must explore in fantasy the baby-to-be and her role and relationship to it. Bibring, et. al. (1961) discuss the tasks in psychoanalytic terms. The first task involves accepting the fetus as part of the self or investing libidinous energies toward the self. "To accept this intrusion and incorporate it successfully" is

the first task (p. 15). The second task associated with fetal movement is to perceive the fetus as a separate object. This is in preparation for separation. The fetus is a separate human being within the self.

Tanner (1969) focuses on the developing relationship with the fetus and continues the theme of increased narcissism of pregnancy seen as a result of the physiological changes of the first months of pregnancy. In this first task she stresses the turning inward and increased libidinal concentration on the self. The fetus is first considered an intrusion or a foreign body. The woman needs to incorporate this intrusion and identify it as part of herself. The second psychological task of pregnancy is to perceive the fetus as a separate object. The woman then begins to separate self from fetus. She starts to identify the fetus as part of herself, yet separate. She utilizes fantasy to attribute characteristics She begins to attribute needs to the fetus and to the fetus. identify these needs as different from her own. She begins to fantasize caring for the baby-to-be. The final task is to actually establish the caretaking relationship with her This author feels that each of these tasks have phychild. siological and behavioral concomitants that are associated with different stages of pregnancy. The first task is associated with the first trimester and such physiological changes as amenorrhea, sore tingling breasts and often times, nausea and vomiting. In the second trimester quickening usually signals the change of focus to visualizing the fetus as a separate individual. Finally readiness to assume the care-

taking role increases in the last trimester along with such changes as increased size and altered body image.

Colman & Colman (1973b, p. 32) and Haber, Leach, Schudy & Sideleau, (1978, p. 529) define the tasks very succinctly by delineating them as the process of "incorporation, differentiation and separation." These authors have the perspective that just as the pregnancy follows a physiological time clock with respect to development, so too might there be a framework of psychological processes that unfolds and progresses within that same fixed period of time. These psychological processes are described in a manner similar to other authors. The woman must first acknowledge her pregnancy and accept the fact that she is pregnant. She accomplishes this by seeking validation of pregnancy and including the pregnancy within her body image. Once she has detected fetal movement she starts to form the perception of the fetus as a separate person, an individual within his own rights. The final stage is to prepare for the impending delivery. It is at this time that the mother begins to fantasize caring for a baby and her interest in the labor and delivery process increases. In another article by Colman & Colman (1973b) they again stress these three stages as critical to adoption of the maternal role. They also discuss the parallel set of psychological changes that must take place in the man in order to adopt the father role. The support a man and woman give to each other during these changes is stressed in the importance of successful transition to the parenthood stage.

Rubin (1976) delineates four tasks of pregnancy. These

tasks are much broader and more interdependent than other authors have portrayed. The tasks are not accomplished progressively but each task is resolved over the entire course of the pregnancy and all tasks are interwoven and worked on concurrently and equally. The four tasks are: "Seeking safe passage for herself and her child through pregnancy, labor and delivery; " "Insuring acceptance of the child she bears by significant other persons in her family;" "Binding-in to her unknown child;" and "Learning to give of herself" (p.369). She discusses the behavior of pregnant women in each trimester in relation to each of the four tasks. Accomplishment of these tasks forms what she refers to as the "Qualitative matrix of mothering" (p. 375). She also feels that an "impasse in any one task area seems to be directly related either to the abandonment of the pregnancy, as in abortion or prematurity, or to severe stress in maintaining the pregnancy, as in toxemia" (p. 369).

Chinn (1979) and Moore (1978) include as tasks, acceptance of the pregnancy and acceptance of the fetus as a separate being. These two tasks are included in almost every study involving the tasks of pregnancy. It is interesting to note, however, that a third task has been added to these two often repeated tasks and that is, to accept new roles and readjust existing relationships (Moore, 1978). Moore has delineated this as a task and both Rubin (1967) and Moore have described the process involved. The process includes grieving for the loss of the previous role and relationship, trying on the new role in one's imagination by the use of fantasy, observation

of others in the maternal and paternal roles and finally role playing. Rubin (1967) formed this theory by the in depth study of nine women during their first postpartum month. A classification system was devised and each protocol was analyzed and coded. Observation and extensive interviews were used to isolate the preceeding theoretical concepts.

Clark (1979) also includes this important aspect of role transition in her description of the tasks of pregnancy. Her first task is termed "pregnancy validation." This refers to accepting the pregnancy as a reality. The second task is "fetal embodiment" or incorporation of the fetus as part of the mother and body image. The third task is "fetal distinction." This task includes visualizing the fetus as an individual being and a development of the mothering identity. The final task is referred to as "role transition" and involves preparation for labor and delivery, giving birth and actually caring for the infant (p. 269). Clark also lists expected behaviors observed during the accomplishment of each task and attempts to define the nurse's role in assisting clients in their mastery of these tasks.

Klaus and Kennell (1976) have also enumerated tasks of pregnancy. They feel that in order for maternal attachment to the newborn to occur a pregnant woman must first, "plan the pregnancy, confirm the pregnancy, perceive fetal movements, accept the fetus as an individual, give birth, see the baby, touch the baby and finally care for the baby" (p. 39). It is interesting to note that these are tasks similar to those delineated by other authors but used in a context of

prerequisites for maternal attachment. Successful attainment of the maternal role is interpreted here as a positive maternalinfant attachment.

Rees (1980a) as one of the more recent authors in this area does not refer to developmental tasks of pregnancy specifically but talks about indicators of identification with the mothering role. It is interesting that here again it can be seen that perception of the fetus as a separate individual, identification with the mothering role and appropriateness of fantasies regarding the unborn child are crucial factors involved in the assumption of the maternal role.

The approach by Cranley (1979) is similar to Rees, although more developmental in orientation. She points out that for a woman to develop into a mother, a dynamic and elaborate consideration or reconsideration takes place. She must reassess her own identity, the identity of her developing fetus and the relationship between herself and her fetus.

Although in the review of the literature it can be seen that different theorists describe both the stage of pregnancy and the related tasks of pregnancy, diffusely and in their own terms, there is general agreement as to the description and clarification of these tasks. Successful accomplishment in this area has been referred to as passage from one developmental stage to another, psychological maturation, attainment of the maternal or parenting role and formation of a positive maternal-child attachment or relationship; which are very similar terms, and are often used interchangeably. Factors Influencing Developmental Task Mastery. Since individual adoption of the maternal role and mastery of developmental tasks of pregnancy varies from person to person, an obvious question becomes: What factors influence the mastery of these processes? Many authors have presented factors influencing task mastery and their findings will be presented next.

Deutsch, (1945); Caplan, (1959); and Benedek, (1959) have all discussed psychogenic changes during pregnancy that affect the maternal role such as a woman's relationship with her own mother, infantile personality patterns and ambivalent attitudes toward the pregnancy. Both Benedek, (1959) and Iorio (1968) feel that certain biological concomitants of pregnancy such as hormonal changes, altered body image and detection of fetal movement have a precipitating effect, almost a causal relationship, in the process of mastery of the tasks of pregnancy. Iorio also stresses that not only attitudes toward pregnancy but also attitudes toward the developing fetus are important.

Moore (1978) lists four factors that may affect the developmental processes in pregnancy and they include: "1. The meaning of the pregnancy for the individual. 2. The individual's stage of development, i.e. readiness for pregnancy. 3. The acceptance or denial of the pregnancy. and 4. The resources that the individual has to deal with the pregnancy" (p. 197). She covers these aspects in more depth and considers several factors as influential in achieving developmental tasks. If a woman has failed to achieve early tasks involved in personal

maturity the pregnancy tasks cannot be accomplished. The relationship between the woman and her parents as well as the relationship between the woman and the father of her baby can effect task mastery. Women who are unsure of their feminity may have problems accepting motherhood. Social pressures such as lack of sanction for unwed pregnancies and the expectations of family and friends may effect task mastery. There is some evidence that the mother with a high risk pregnancy due to some pre-existing physical condition may have difficulties in assuming the maternal role.

Failure to attain successful accomplishment of any or all developmental tasks puts the family and the child at risk for further development according to Cohen (1979). He stresses that this failure causes maladaptation to pregnancy and lists four major causative factors. The first factor is negative experiences during a present pregnancy and /or past pregnancies, such as giving birth to a child with anomalies, separation or divorce from the father of the baby during pregnancy or having had difficulties in conceiving. The second factor is faulty support systems such as marital conflicts or negative relationships between the pregnant woman and her mother. The third factor is preparedness for childbearing and childrearing. Rossi (1968) also mentions this factor and says that dissolution of the nuclear family with subsequent loss of role models contributes to this lack of preparation. Cohen's last or fourth factor involves the pregnant woman's concerns about her health or whether she feels she has a physical condition which will be made worse or exacerbated by the pregnancy. All

of these factors are considered as stress and inadequate support circumstances which can lead to decompensation failure in task mastery.

Mercer (1981) in reviewing some of the literature in this area listed over eleven variables that impact on the maternal role. Although her focus was on the postpartum relationship, she does acknowledge that the maternal role has its origins in the early stages of pregnancy and many of these variables are active in the mother-child relationship during pregnancy as well as postpartum. Some of the variables include: maternal age, social support, education, self concept, social stress and social status.

Although these authors agree that the variables effecting mastery of the tasks of pregnancy and hence the maternal role are many and complex, the focus in this study is on the task of perceiving the fetus as a separate individual and three variables affecting this task. The three have been chosen for their possible relation to perception of the fetus as a separate individual and include direct validation of pregnancy, desirability of the pregnancy and ability to form vivid images. The next three sections will review the literature regarding each of these variables and offer some justification for their selection in his study.

Direct Validation of the Pregnancy. Caplan (1959) states that the fetus does not become a reality to the pregnant woman until quickening or detection of fetal movement occurs. It has been his experience, in the course of his practice, that

many women think of the fetus as a live person inside of them after quickening. Also at this time they often assign a sex to the fetus, give it a name and start ascribing feelings to it.

There is a lack of reality regarding the baby during the first four months of gestation. The baby is not a reality until fetal movement is detected. It is the detection of fetal movement that marks the beginning of a woman's ability to know and recognize her child and form a relationship with him (Kitzinger, 1972).

Bibring & Kahana (1968) agree with this concept. They feel that with the detection of fetal movement the mother begins the process of familiarization with her unborn child. She gets to "know" her child after quickening occurs. It is at this time too, that the woman begins to explore other roles such as mother, adult and woman. Quickening has an initiating effect in stimulating the development of changing family relationships and roles. Rubin (1970) refers to the profound effect that fetal movement engenders. The pregnancy is surrounded by a sense of unreality. Fetal movement is often the first direct proof that the pregnancy does in fact exist. Once the pregnancy has been validated in this manner then the reassessment of roles and relationships becomes more important.

The task of perceiving the fetus as a separate individual has been associated with detection of fetal movement by Jessner, Weigert & Foy (1970), Colman & Colman (1973 a&b), and Ballou (1978). These authors say that when fetal movements are detected the child is no longer perceived as part of the mother.

It is at this time that the fetus is seen as a complete separate being with its own identity and therefore more of a person. The fetus is more "real" after quickening.

Nadelson (1973) shares this belief. She characterizes the occurrence of quickening as ushering in a sense of well being and relief. A reassurance not only that the pregnancy exists but that everything is normal. She points out that it is also at this time that the mother's earlier symptoms such as nausea and vomiting disappear and because of her enlarging abdomen the pregnancy is now visible to others. Colman & Colman (1973a) support this when they state it is at this time that the woman may gain a great deal of weight, so her pregnancy will be more visible. It is as if she now knows she is pregnant and wants others to know too. It is interesting to note that it is also at the time of detection of fetal movement that the father begins to perceive the child as a separate being. Once he is able to detect movement he begins to take an interest and more fully participates in the pregnancy. It is a reminder that the baby is his and theirs as well as hers.

With the advent of quickening the mother has a shift in attitude about her own body image. Feelings and awareness about her size occupy her thoughts and she tries to imagine what the baby's physical appearance is like. It is also at this time that the awareness of the fetal responses becomes acute and there is an attempt to assess their adequacy. There is a recognition that death or abnormality of the fetus is a real possibility and is another indicator that the fetus is

a separate individual (Chinn, 1979).

Leifer (1977) in her hypothesis generating study of nineteen married primigravidas attempted to identify affective changes taking place over the course of pregnancy and to describe the experience of pregnancy. Subjects were white, middleclass women between the ages of 22 and 33. Data were collected at a private patient clinic in a large maternity hospital over a six month period. The author attempted to describe the development of maternal attachment and assess the predictive power of early attitudes in pregnancy to later behaviors and attitudes. Seven in-depth interviews with each volunteer subject and a large battery of instruments including a child trait checklist, an attachment to the baby checklist and a reaction to motherhood scale were utilized as well as nine other various instruments. Subjects were interviewed during the first trimester, the week fetal movement was detected, the second trimester, the third trimester, the third postpartum day, six to eight weeks postpartum and seven months postpartum. Results of the study found that the development of maternal feelings and awareness of the fetus as a separate being occurs after experiencing fetal movements. She delineates behavioral responses to guickening that are indicative of these maternal feelings and task accomplishment such as talking in affectionate tones to the fetus, calling the fetus by pet names, offering it food when they were eating and engaging their husbands in imaginary conversations with the fetus. Activities and preparations for the baby were increased in those mothers who had developed a more realistic perception of the future baby.

Rubin (1969) depicts the pregnant woman as seeking cues, signs and symptoms that will validate and confirm her pregnancy. In the first trimester the symptoms of pregnancy are similar to those of illness. There is amenorrhea, sore tingling breasts, emotional lability and often nausea and vomiting. Once fetal movement has been detected in the second trimester, pregnancy becomes more "real" or valid and at the same time many of the symptoms of the first trimester disappear. The first symptoms are indirect and only supportive evidence of the pregnancy. Rubin (1970) in another article says that the changes brought about by fetal movement are dramatic. The uncertainty about her status is removed and through this, "private realm of sensations" the presence of her unborn child is confirmed (p. 505).

Klaus (1978) in his discussion of the critical period immediately after birth refers to the reconciliation a mother must make between her imaged fantasy child and the reality of the child after birth. He feels that the process of attachment begins before birth and often before quickening has occurred. He feels that negative attitudes toward the fetus may become more positive after fetal movements are detected. The unwanted child may become wanted.

It may be seen that the most widely supported validation of pregnancy is detection of fetal movement but more recent authors such as Jensen (1977) and Moore (1978) also mention hearing the fetal heartbeat as primary direct validation of pregnancy. In a recent study by Kohn, Nelson & Weiner (1980) 100 women in various stages of pregnancy were tested for their

responses to ultrasound examination. A pretest-experimentposttest design was utilized and two questionnaires were developed, one given prior to the ultrasound examination and one given after the examination was completed. It was found that detecting fetal movements, hearing the baby's heartbeat and seeing the baby helps enhance the prenatal mother-child attachment. Increases were seen in numbers of mothers who felt the baby was fully developed and therefore, more of a separate human being. More women felt the baby was happy inside them after the ultrasound and there was increased tendency to see their babies as more "normal" in characteristics.

It may be seen that hearing the fetal heartbeat is another direct validation of pregnancy and according to Jensen (1977), it is during this time that there is increased introspection. The woman turns her interests inward and begins to form a perception of her unborn child in fantasy. The center of her focus is on the child-to-be. There is a general withdrawal from other relationships and Jensen refers to this period as "a quiet or latent phase" (p. 140).

Desire for Pregnancy. So far within the search of the literature it has been demonstrated that the mastery of developmental tasks are interrelated and it is felt that mastery of earlier tasks is necessary for mastery of later tasks. Acceptance of the pregnancy usually takes place before the fetus is perceived as a separate individual. Acceptance of the pregnancy involves not only recognition and acknowledgement of the factual state of pregnancy but also perceiving the

pregnancy as a positive factor in the life of the individual.

Rubin (1970) says that two questions persist throughout pregnancy but are especially predominant in the first trimester. A pregnant woman asks herself, "Who, me? and Now?" in respect to confirmation of her pregnancy. These questions are important in the process of assessing the desirability and hence the acceptance of the pregnancy (p. 502).

Caplan (1959), Pohlman (1968), Miller (1974), Cohen (1979) and Westhoff (1980) have all observed that there is a change in attitude that takes place over the normal course of pregnancy. Early negative feelings toward the pregnancy itself change to more positive and desirable attitudes in the later stages of pregnancy. This change in attitude has been associated with the detection of fetal movements. Such reactions as grief, anger, shame and some guilt are very common in initial responses to confirmation of pregnancy, according to Caplan (1957). He estimates that 80 percent of the clients he sees reject pregnancy or see it as undesirable when they first become pregnant, but he goes on to add that after quickening the vast majority have decided they are glad to be pregnant.

This change from ambivalence or negative attitudes toward pregnancy to positive attitudes was supported by Leifer (1977). Half of her sample who had negative attitudes in the first trimester exhibited a change to positive by the end of their pregnancies and attitudes toward pregnancy were found to be predictive of adaptation to motherhood.

Ambivalent and/or rejecting attitudes to early confirmation of pregnancy are common and almost universal according to Cohen

(1979). Even in planned pregnancies the life changes, stresses and inconveniences of pregnancy can evoke afterthoughts or ambivalent feelings. But he states that, "In almost all instances, the strongly negative attitudes begin to dissolve around the time of quickening and are usually resolved by the third trimester" (p. 20).

Pohlman's (1968) article on the change from rejection to acceptance of pregnancy, contends that acceptance of the pregnancy increases over time. Many mothers change their minds after an initial rejection of the pregnancy. The author discusses why he feels that interpreting this type of evidence should be done with caution. Although it is generally true that this shift occurs, he points out that many women are not glad they had an unwanted pregnancy. It should not be assumed that every woman has this shift from negative to positive attitudes. Rationalization may play a part in this change and rejecting attitudes toward pregnancy should be taken seriously.

Westhoff (1980) reports results of 1970 and 1975 National Fertility Studies in the United States in which over 5,000 women were surveyed. In these studies they elicited eleven different responses to the initial reaction to pregnancy. This article agrees with Pohlman. The author states that unwanted pregnancies produce feelings of ambivalence and feels that there is a retrospective rationalization which takes place in regard to unwanted pregnancies. Many women who stated they wanted no more children and who found themselves pregnant at a later date classified the pregnancy as wanted.

It may be seen that quickening has a relationship to the developing attitudes of acceptance and desirability of pregnancy. There is usually an increase in this dimension after detection of fetal movement. But, more important to the focus of this study is the literature supporting the relationship between desire for pregnancy and perceiving the child as a separate individual and ultimately forming the mother-child relationship. It might follow within this theoretical framework which states that detection of fetal movements is related to increased acceptance of pregnancy that acceptance or desire for the pregnancy assists in mastery of the next task which is perceiving the fetus as an individual human being.

A total of 163 mother and baby pairs were studied to determine the relationship between a mother's prenatal negative attitudes and deviant behavior in the new born (Ferreira, 1960). A self administered questionnaire was used to measure rejection of the pregnancy and fear of harming the baby. The researcher found that the mothers of deviant infants scored significantly higher on these two measures. Prenatal attitudes of the mother were felt to be important in understanding the subsequent maternal-child relationship.

Clifford (1962) studied 150 women in various stages of pregnancy. This study attempted to determine the relationship between both marital status and parity with maternal attitudes as determined by the Pregnancy Research Questionnaire (PRQ). The sample was divided into three groups of 50 subjects each, an unwed group, a primigravida group and a multigravida group. They found that unwed women expressed less desire for pregnancy

and even more important, less maternal feeling. The difference between wed versus unwed subjects on the desire for pregnancy subscale of the PRQ was significant at the .001 level.

As part of Doty's (1967) study two instruments were developed, one to measure attitude toward pregnancy (PAS) and one to measure postpartum maternal attitudes toward the offspring (OBC). A group of 200 subjects were given these instruments as well as the Minnesota Multiphasic Personality Inventory (MMPI) and the Parental Attitude Research Inventory (PARI). The objective of the study was to determine the relationship between attitudes during pregnancy and maternal attitudes postpartum. Subjects were given the PAS and MMPI during the third trimester of pregnancy and the Offspring Behavior Checklist (OBC) and PARI six months postpartum. The author found that maternal attitudes in pregnancy such as negative attitudes toward pregnancy are predictive of and related to subsequent attitudes toward offsprings behavior and childrearing.

Howells (1972) contends that from the time of conception a woman may develop a very "person-like image of the fetus," but for the majority of women this image is associated with detection of fetal movement which is usually the first direct validation of the pregnancy and child-to-be. For the minority of women who deny or fail to accept their pregnancies there is no such sense of the child as a separate human being (p.213). Leifer (1977), referred to earlier, found that all of the subjects who were rated as having a positive attitude toward pregnancy were also rated as high in adjustment to pregnancy

measures and both of these factors were predictive of adaptation to motherhood.

Cohen (1979) like other authors, agrees that ambivalent to rejecting attitudes toward the news that one is pregnant are very common but when these rejecting or negative attitudes toward pregnancy persist into the third trimester it is indicative of failure to master the tasks of pregnancy. Cohen's behavioral clues of failure to accept and desire the pregnancy are denying or ignoring bodily changes, preoccupation with minor physical complaints that are unremediable and dressing in a manner which denies the growing changes in physical appearance. Along these same lines, if a mother has not visualized the fetus as a separate being she may have an inappropriate or lack of response to quickening, have made no preparations for the baby, exhibit a lack of fantasies about the fetus and baby-to-be and finally have predominantly negative fantasies.

Laukaran and van den Berg (1980) published a study involving over 8,000 women. The sample consisted of white, ever married women with single pregnancies carried to term. This study was a report of only part of a much larger research program conducted in California at the Kaiser Foundation Hospitals. Data were collected over an eight year period from 1959 to 1967. The purpose of the study was to investigate the relationship between unwanted pregnancies and undesirable consequences for mother and child. Women were asked, "How do you feel about having a baby now?" early in their pregnancies. Their attitudes toward the pregnancy were

classified from strongly favorable, to negative. Unwanted pregnancies were significantly related to perinatal deaths, congenital anomalies, postpartum complications, accidental injury during pregnancy and increased amounts of analgesics during labor and delivery. In their original subsample where clients were interviewed twice it was found that 22 percent reported a more favorable attitude during the second interview. They did not, however, interview twice in the final sample as it was felt this particular group's attitudes remained stable from trimester to trimester. Their final conclusion is very pertinent to the present study because they state, "These results offer some justification for considering maternal attitude as a clinically meaningful risk factor in regard to fetal outcome" (p. 379).

Cranley (1979) feels that it may be possible to determine at which points in the gestation various behaviors indicating successful adoption of the maternal role are to be found. At some point in time it may be possible to map the course of maternal psychological development and thus form a predictable progression of role taking and maternal attachment.

Another form of support for the importance of this variable is the clinical experience most nurses have had with clients who do not desire their pregnancies. The unwed teenage mother who fails to wear maternity clothes long after they would be appropriate, refers to her unborn baby as a depersonalized "it" and fails to adopt the maternal role is well known to those in the clinical areas.
Vividness of Imagery. In an overview of the literature pertaining to the task of perceiving the child as a separate individual, the majority of sources point out the fact that dreams, fantasies and mental images play a crucial role. One author (Rubin, 1972) states that although there is little constancy or similarity among images there is a predictable progression. In the first trimester of pregnancy fantasies or mental images of the child are few in number and very diffuse. Lumley (1980) supported Rubin's contention regarding the fantasies of the first trimester in her study. Thirty primiparas were given a series of semi-structured interviews to determine attitudes toward the fetus in terms of it being a separate individual and the beliefs held regarding physical development of the fetus. Only nine out of the thirty felt that the fetus was a real person. The author found that during the first trimester of pregnancy the majority of women depicted their unborn children in nonhuman terms. For example, when asked what their fetuses were like, replies such as a blob, a thing or a lump of cells were common. In the second trimester fantasies become more specific according to Rubin. They are more related to the child that will be. During these last two trimesters there is a richness of fantasy. The women imagine the appearance of the child, his personality, sex and personal characteristics and try on their new maternal role in fantasy.

Deutsch (1945), an early author in this area, describes the evolving pattern in the second trimester in this way:

as part of developing fantasies in pregnancy there is an inner voice that says, what it will be later in the outside world is not what it is now. What is now in me, with me, a part of my own self will be lost. It will be there but as another being, not myself. Something that will breathe with other lungs, pulsate with another pulse, that will achieve independence by its own actions. It is still in me, but at the same time is not I. It is another human being, soon to be a world outside me. (p. 159).

This turn toward fantasy is seen as a preliminary stage to emotional motherliness. She points out that these fantasies differ from other fantasies in that within a clearly delineated time period the fantasies become reality.

Caplan (1957) was another of the earlier authors to stress the importance of mental images and perceptions of the fetus in relation to the maternal role. He feels that prediction of the type of relationship between mother and child is possible. He bases his predictions in large part on the content of a mother's dreams, fantasies and mental images about her unborn child.

In a later work by Caplan (1959) he again stresses the use of fantasies as direct indicators of the maternal-child relationship. He feels that if the image shows, "an emotional coloring of warmth and love and affection it argues well for the future mother-child relationship" (p. 65).

Rubin's (1967) focus is on fantasy in role play or a mother's use of fantasy in the trying-on-for-size of her new role. She also found that fantasies are accelerated after detecting fetal movement and activities such as making plans for the baby resulted from these fantasies. Fantasies about the content of the womb add to the enjoyment of pregnancy and

may effect the mother's anticipations of her motherhood (Benedek, 1970).

Rubin (1970) says the focus of the middle stage of pregnancy is the condition of the child. The mother becomes desirous of knowing what her child will look like, who he will resemble and how he will behave. She uses physical sensations such as fetal movements and converts them into mental impressions of him/her. She fantasizes and forms mental images of her child-to-be and what it will be like to be a mother.

Leifer (1977), like Rubin, found a progression of fantasized images of the fetus. The image went through changes and transformations from being very diffuse, to a depersonalized textbook image and after detection of fetal movement, a more personified image was found. She again reinforces the concept that fantasies developed toward the fetus are significant in the development of maternal attachment and psychological preparedness for motherhood.

Littlefield (1977) agrees with these authors and feels that a mother's fantasies or details of her mental images regarding her unborn child have a predictive significance. The sex or age of the child is felt to be significant. For example, if a woman always imagines a boy or a girl, problems may arise if the child is of the opposite sex to that desired. Idealizing the image of the child and dreaming of a child with certain qualities or gifts may indicate that the mother is planning to meet her own unrealized ambitions through the child, according to Clark (1979). Fantasies about the baby

enable one to assess the appropriateness of the parent's concept of the baby.

Rees (1980b) also feels that the degree to which a mother's fantasies are appropriate can be indicative of her identification with the mothering role. Appropriateness relates to the degree to which her mental images conform to realistic capacities of a newborn and the extent to which they reflect an emotional tone of maternal attachment or concern for the child's well-being.

There appears to be ample support for the idea that mental imaging and fantasy are crucial to the accomplishment of perceiving the child as a separate individual, which in turn is indicative of the adoption of the maternal role and the beginnings of maternal-fetal attachment. The process of mental imagery in relation to pregnancy has not been explored to any great extent as yet.

Paivio (1971) points out that there are individual differences in ability to form mental images and there is also evidence supporting functional significance of these differences. Therefore, the question remains, is there a relationship between ability to form vivid mental images and accomplishment of perception of the fetus as a separate human being? Most of the research done in this area has related individual differences in vividness of imagery to memory, language, learning and hypnosis and even creativity. The use of imagery has also been applied in psychotherapy. Systematic desensitization and biofeedback training are two areas where it has been used widely.

Nurses have recently begun to consider the use of imagery with clients as part of their skills. Clark (1980) has explored the literature in relation to the use of "creative visualization" in nursing (p. 69). She gives examples where, through the use of imagery clients have been able to increase their self-healing potentials. Such conditions as cancer, hypertension, leukemia, learning disabilities, glaucoma and heart disease have responded to imagery instructions. The nurse instructs the client to relax and then gives specific instructions to the client about what to image or bring to their mind's eye. This use of imagery relies on the theoretical assumption that man is holistic and that the mind-body connection is one that cannot be separated.

If a mother forms a perception of her fetus as a separate individual by mental imagery and fantasy, then it might follow that the degree of facility in forming vivid mental images may have a relation to mastery of this task. Individual differences involved in mental imagery might be related to the maternal image of the fetus.

Conceptual Framework

The conceptual framework for this study incorporates as its basis a developmental perspective. As man develops throughout the life span, certain patterns of change emerge. These patterns are similar for all people and so become predictable. There is an orderly progression of change throughout life which can be considered as stages. These stages are interrelated. Successful resolution of one stage must be completed before moving on to another stage (Tilden, 1980).

The transition from one stage to another is usually associated with a developmental crisis often referred to as a pivotal life event or turning point. Puberty, marriage, and menopause are three examples of developmental crises. They must be met with adaptive growth mechanisms for maturation to occur. Another pivotal life event is pregnancy. Many authors have discussed pregnancy as a developmental process in the life of a woman. Among these authors, Deutsch (1945), Benedek (1959), Bibring, et. al. (1961), Leifer (1977) have characterized pregnancy as a period of psychological and physiological crisis or disequilibrium. Within the social, physical and psychological circumstances of a pregnancy or developmental stage there are certain adaptive tasks that must be taken on and accomplished in order to resolve this disequilibrium and for maturation to occur (Tanner, 1969).

The following list of developmental tasks of pregnancy has been synthesized from the review of the literature:

- To accept the pregnancy as a reality and the implications of this critical stage.
- To integrate the fetus as part of the mother's body image. The woman must now incorporate and accept the fetus as an integral part of herself.
- To view the fetus as a separate individual being, and to begin to try on the mothering role in fantasy.
- To prepare to give up the fetus, experience labor and delivery and to assume the mothering role.
 The focus of this study is on the third task, that of

perceiving the child as a separate individual and the possibility that there are certain factors which may effect the mastery of this task. Three factors under consideration are, direct validation of pregnancy, attitude toward the pregnancy and vividness of imagery. Direct pregnancy validation which is detection of fetal movement and/or hearing the fetal heartbeat often signals the transition from the task of accepting the fetus as part of the mother's body image to perceiving the fetus as a separate individual. This concept, although supported widely in the literature remains to be subjected to investigation by well controlled research.

When working in the practice area of prenatal care nurses often encounter clients whose attitude toward the pregnancy might be a factor to consider in developmental task accomplishment. Cases such as the unwed teenagers who fail to desire and accept their pregnancies are commonly encountered and leave the question: What is the relationship between attitude toward pregnancy and ability to perceive the fetus as a separate individual?

Since the perception of the fetus as separate involves the fantasies, daydreams, imagination and mental images of the pregnant mother, the degree to which one is able to form vivid mental images may also be a factor to consider and the relationship well worth looking into.

The conceptual framework may be summarized in the following manner:

 Goal directed change in a predictable progression is an inherent part of life, which can be expressed as

theoretical stages.

- These stages build on one another and are interrelated. One stage must be mastered to successfully progress to another stage.
- Crises bring about change and pregnancy may be viewed as a crisis or developmental stage.
- During any stage, but in particular pregnancy, there are adaptive tasks which must be accomplished for maturation to occur.
- 5. One of these tasks of pregnancy, perception of the fetus as a separate human being, is central to this investigation.
- 6. Within the physical, social and psychological context of the pregnancy developmental stage there are certain variables which might have a relationship to mastery of the above task, such as validation of the pregnancy, psychological reaction to the pregnancy and vividness of imagery.

Objective

The general purpose or aim of this study is to gain an understanding and clarification of a mother's conceptualization of her unborn child as a separate individual during the second trimester and to explore some of the variables that might be related to that conceptualization.

Research Questions

 Is there a relationship between direct validation of the pregnancy in the second trimester and the maternal image of the fetus?

- 2. Is there a relationship between maternal attitude toward the pregnancy in the second trimester and the maternal image of the fetus?
- 3. Is there a relationship between the mother's ability to form vivid images and the maternal image of the fetus in the second trimester?

Definitions

The following definitions have been formed by the investigator based on the review of the literature.

- 1. Maternal image of the fetus is defined as, a mother's fantasies, daydreams and thoughts that form a mental picture or conception of her unborn child as a separate individual and will be represented operationally by the score on the Maternal Image of the Fetus Scale.
- 2. Direct validation of pregnancy is operationally defined as detection of fetal movements by the mother and/or hearing the fetal heartbeat by the mother and will be measured by self report questions on Part I of the Maternal Image of the Fetus Scale.
- 3. Maternal attitude toward the pregnancy is defined as the degree to which she desires or accepts her pregnancy and will be represented operationally by the score on the Desire for Pregnancy subscale of the Pregnancy Research Questionnaire (Schaefer & Manheimer, 1960).
- 4. Ability to image is the degree to which the subject can form vivid mental pictures or conceptions and

will be measured by the Betts QMI Vividness of Imagery Scale (Sheehan, 1967).

Assumptions

- Adoption of the maternal role is synonymous with forming bonds of maternal-infant attachment and relies on developmental task mastery.
- 2. The maternal-infant relationship begins before the birth of the baby and has its beginnings in the mother's fantasies, daydreams and thoughts about her unborn child.
- Inner experiences such as mental images have a relationship to subsequent behavior.

Methodology

Research Design

The basic design of this study is exploratory descriptive intended to gather data on possible relationships between identified variables and the maternal image of the fetus. It is hypothesis generating rather than hypothesis testing. Justification for choice of this design may be found in the review of the literature. The number of studies in this area has not been extensive or experimental in nature. Most of the literature has been highly theoretical and use of the scientific method involving experimental controls has been almost nonexistent. It would appear to be premature to formulate and test hypotheses at this point in the evolution of the development of the field.

Sample

The sample consisted of 62 volunteer primiparous women in the 16th to 22nd week of gestation. The time period of 16 to 22 weeks gestation was utilized because it is within this time period of the second trimester when most women experience fetal movements and the fetal heartbeat is first detected. Only those who were able to speak and read the English language were included in the study. Subjects ranged in age from 15 to 32 years with a mean age of 25.7 years. All of the subjects were members of the white race and the majority, 93.5 percent were married. Only four of the subjects or 6.5 percent categorized themselves as single. Religious affiliation ranged from 39.3 percent Protestant, 36.1 percent Catholic, 4.9 percent Jewish to 19.7 percent Other. Socioeconomic status was determined by utilizing Blishen's (1976) scale which delineates six status groups. Distribution over the six groups was as follows: Group I - 4 subjects or 6.5 percent, Group II - 20 or 32.3 percent, Group III - 12 or 19.5 percent, Group IV - 11 or 17.7 percent, Group V - 6 or 9.8 percent and Group VI - 9 or 14.5 percent. Educational levels would appear to be high as 80.7 percent of the mothers and 83.9 percent of the fathers had completed grade 12 or above. At the lower end of the distribution 19.4 percent of the mothers failed to complete high school with grade 9 as the lowest grade completed by any one subject, while 16.1 percent of the fathers failed to complete high school with grade 8 as the lowest grade completed by any one subject. At the upper end of the distribution, 37.1 percent of the

mothers had at least one year or more of university experience with 8.1 percent having advanced university, beyond the baccalaureate level and 40.3 percent of the fathers had at least one year or more university education with 24.2 percent having advanced university beyond the baccaulaureate level (See Table 1).

TABLE 1

Fathers Grades Completed Mothers 8 8 n n 16.1 19.4 Less than Grade 12 12 10 27 43.5 High School Completed 27 43.5 University, 1 year 18 29 10 16.1 or more Advanced University 1 year or more beyond 5 8.1 15 24.2 Baccaulaureate Total 62 100% 62 100% Subjects Completing 50 80.7 52 83.9 Grade 12 or Higher

EDUCATIONAL LEVEL OF SAMPLE

None of the sample had previously attended prenatal classes and primiparas were selected to control for experiential effects. If a mother has had a previous child there is a possibility that her image of the fetus could be effected by and related to her previous experience. For this reason, those with a history of miscarriage and/or abortion were eliminated also. Those having had ultrasound were not utilized as subjects on the basis of the possibility of nullifying or affecting the impact of subsequent direct validation later in the pregnancy. If the mother has previously seen the baby's heart beating or observed fetal movements in an ultrasound examination, it may have an effect on the relationship between how she images her unborn child and later detection of these pregnancy milestones.

In an effort to enhance the ability to generalize to the "normal pregnancy," those who have had other diagnostic tests which might indicate the presence of risk factors, were excluded from the study, as were those who indicated a history of chronic illness. Those women who reported having been treated and/or hospitalized for psychiatric illness were not utilized as subjects in order to enhance the ability to generalize from the results.

Procedure

The researcher attended early bird classes and one ambulatory care facility (ACF) for the collection of data. Early bird prenatal classes are presented for the family in early pregnancy. There is usually one or two classes given with the objective of teaching those principles necessary for the promotion and continuation of a healthy pregnancy. The mother

and father usually attend one or two early bird classes during the first six to twenty-five weeks of gestation. Most couples then follow this early bird experience with a later course of prenatal classes usually consisting of six to eight sessions. These later courses are conducted during the last weeks of gestation and are focused on the process of labor and delivery and the parinatal period. Early bird classes were chosen for data collection because this is where access might be found to large numbers of primiparas in the sixteen to twenty-two week gestational range needed for the study.

Data were collected over a 10 week period from November 5, 1981 to January 14, 1982. Subjects were obtained from a wide variety of resources and agencies. A large general hospital, a small inner city health clinic, Provincial Community Health Agencies involving six separate communities, a City Community Health Agency, childbirth classes offered by independent nurse practitioners in two separate locations and an ambulatory care facility centered in a large general hospital were utilized. The majority of the sample was drawn from early bird prenatal classes, only one subject was obtained through the ACF clinic.

The researcher attended the classes and approached subjects before class began. Each subject was approached on an individual basis. The investigator introduced herself in the following manner, "Hello, my name is Annette Gupton. I'm here tonight (today) looking for volunteers to fill out questionnaires. I am working on my master's degree in nursing and the questionnaire is part of a research project. Your participation

is strictly voluntary. Is this your first pregnancy? Is your due date between ______ and _____ "(dates indicating a 16-22 week gestational age were computed before class and entered here). If the subjected answered yes to both questions she was asked, "Would you be interested in completing a questionnaire?" If the answer was yes the procedure for filling out the consent form and handing in the questionnaire was explained. If the subject indicated "no" to the above questions regarding parity and gestational age the rationale for excluding the subject from the study was explained. This introduction was written on an index card and committed to memory by the researcher. The same introduction was given to all subjects.

The majority of the questionnaires were completed before the classes started, during breaks, and a small number remained after class to complete the final items on the questionnaire. Those unable to finish during the class or those expressing a desire to complete the questionnaire at home were given a prestamped and addressed envelope in which to mail in the completed questionnaire to the researcher.

One hundred and eighteen subjects met the criteria of being between 16 and 22 weeks gestational age as well as being primiparous. Of these 118, 8 did not want to complete a questionnaire. Twelve requested to mail in their questionnaires and of these 12, 9 were returned. One hundred and seven questionnaires were returned. Three of these were not useable because of being incomplete. The eight who refused, the three who failed to return in the mail and the three in-

complete questionnaires were considered refusals. A response rate of 88 percent is subsequently obtained for the 118 women approached. A response rate of 82 percent is obtained when only the 62 subjects included in the study are considered. Eighteen were eliminated because of a history of miscarriage and 16 were unuseable due to the subject having had ultrasound. Three were unsure of due dates, four reported chronic illness and one reported having been treated by psychiatric illness. This left a balance of 62 useable questionnaires (see Table 2).

TABLE 2

REASONS FOR ATTRITION LEADING TO FINAL SAMPLE SELECTION

Reason for Attrition	n
Primiparous and between 16 and 22 weeks gestation	118
Refused to fill out questionnaire	8
Failed to return questionnaire in mails	3
Unuseable due to being incomplete	3
Eliminated due to history of miscarriage	18
Eliminated due to history of ultrasound	16
Eliminated because unsure of expected date of delivery	3
Eliminated due to history of chronic illness	4
Eliminated due to history of psychiatric illness	1
Useable questionnaires included in final sample	n=62

Ethical Concerns

Informed consent was obtained from all subjects. A formal written consent was used and an example of it may be found in Appendix B. Information about the general aim and purpose of the study was given. It was pointed out that the subject was in no way obligated to participate and whether or not she participated would not have any effect on her prenatal care. The subjects were informed of the possibility of the study being published and the method for receiving a summary of the results of the study. Appendix A contains a sample of the letter of explanation to subjects.

The introduction by the researcher to the questionnaire and the style of the questionnaire itself was aimed at establishing an atmosphere in which no judgements were made and the feelings of the researcher did not intrude. It was stated that there were no right or wrong answers to any of the questions. It was also stated that this study was primarily interested in individual attitudes and in this area, the subject was the expert.

No names were included on the questionnaires and subjects remained anonymous. Questionnaires were coded in order to identify agency and number of questionnaire but were not coded to ascertain individual identities. The researcher and the thesis committee are the only ones having access to the raw data. The data will be shredded by the researcher one year after completion of the study.

It is the opinion of the researcher that the risks to participants in this study were minimal as it is an exploratory descriptive study which involved giving information only

and therefore, no experimental conditions were imposed upon the mother or the fetus. Results of the study have implications for long term benefits for promotion of positive maternal-infant relationships. The researcher provided time after the participants had completed questionnaires to explore any areas of concern that answering the questionnaire might have evoked. Very few subjects approached the researcher after handing in questionnaires and of those who did the comments were of a social nature, not pertaining to the study.

Participating agencies were informed of the general purpose and aims of the study and approval for use of their facilities was obtained before the study commenced. The proposal for this thesis was submitted to an ethical review board for their approval and a copy of the letter granting this approval is in Appendix D.

Instruments

Maternal Image of the Fetus (MIF). It is only within the past few years that any efforts have been directed toward developing instruments to either qualify or quantify the maternal image of the fetus. Three exceptions to this lack of research are the recent works of Cranley (1979), Josten (1980), and Rees (1980b).

Cranley's study (1979) was completed as part of the requirements for a Doctor of Philosophy degree. This doctoral dissertation was aimed at investigating attachment behaviors in the third trimester of pregnancy, how attachment behaviors might be altered or changed and the relationship between attach-

ment behaviors in the third trimester and subsequent perceptions mothers had regarding their infants postpartum. The sample consisted of 30 subjects who were interviewed during the last six weeks of pregnancy and three days after birth. Variables measured included age, parity, socio-economic status, selfesteem, anxiety, perceived stress, social support, perception of birth, perception of the infant and maternal attachment. Results showed that women do form bonds of attachment during the third trimester of preqnancy. Social support systems were positively correlated with attachment while higher levels of perceived stress had a negative association to attachment behaviors. Higher levels of attachment were positively correlated with the mother's assessment of average babies. An instrument to measure attachment of the fetus was developed as part of the study. Extensive item analysis was carried out and coefficient alphas for subscales were from .52 to .73. As this instrument has only recently been developed it has not had extensive reliability or validity measures carried out. No test-retest data have been reported. Because the tasks overlap and are interrelated some of her questions are useful for the purposes of the present study and some similarly worded questions have been included in the Maternal Image of the Fetus Scale. Cranley's instrument in its entirety, however, is not appropriate for the researcher's current study as the focus is on the third trimester of pregnancy and the task of attachment.

Josten (1980) also writing within a developmental perspective, follows Rubin's maternal tasks of pregnancy in constructing an assessment guide for illuminating possible

problems with parenting. The second section of her instrument called "attachment" presents open ended questions that pertain to the general area but are not appropriate to the specific focus of this study. No measurements of validity or reliability were quoted.

Rees (1980b) constructed three scales to indicate identification with the mothering role. Feelings of Motherliness, Conception of the Fetus as a Person, and Appropriateness of Fantasies about the Baby-to-be are the titles of these scales. The conceptual framework from which this scale was constructed was not developmental and these scales have not been published in their entirety. Coefficient alphas for the three scales were .87 for Feelings of Motherliness, .89 for Conception of the Fetus as a Person, and .67 for Appropriateness of Fantasies about the baby-to-be. Criterion validity was not established by using three subscales of the Parental Attitude Research Instrument. No measures of reliability were quoted.

None of these scales are completely appropriate to the objective of the present study. As an alternative to only qualitative data, the design of this study includes development of an instrument to both qualify and quantify the maternal image of the fetus. The Maternal Image of the Fetus Scale (Appendix C) attempts to answer the following questions in relation to a pregnant woman's conception of her fetus:

Part I. Qualitative data re: the image of the fetus.

A. What stage of development is the imaged child in most often? (question 1, 2, 3)

B. Determination of experience of direct validation

of the pregnancy. (question 4 & 5)

- C. How does her image of her fetus compare with her concept of the "normal" fetus? (question 6, 7, 8, 9)
- D. Mother's estimation of the extent of fantasies. (question 10)
- E. Parity status. (question 11)
- Part II. Quantitative data re: the image of the fetus A. Is the image appropriate to the stage of development of the fetus both anatomically and in terms of physical abilities? (question 2, 5, 10, 14)
 - B. Does the image incorporate human qualities such as feeling and thinking? (question 1, 6, 11, 17)
 - C. Does the image reflect a separate being with which to begin building a relationship? (question 3, 4, 7, 8, 12, 15, 16)
 - D. Is there evidence of the mother assuming the caretaking role? (question 9, 13, 18, 19)

Possible responses to the quantitative questions are: definitely yes, yes, unsure, no, definitely no. Scoring was done by giving 5 points to a definitely yes answer, 4 points to a yes answer, 3 points to an unsure answer, 2 points to a no answer and 1 point to a definitely no answer. Higher scores indicate a higher degree of mastery in the second task of pregnancy which is visualizing the fetus as a separate being. Lower scores suggest that the subject might not have successfully completed this task or has not shown many of the behavioral clues that would indicate successful completion of this

task. The range of possible scores for Part II of the MIF is 19 to 95.

There was a space provided to the right of the questions and at the end of the instrument for the subject to make comments for the purpose of enriching the quantitative data and acting as a validity check. The instrument was submitted to individuals knowledgeable in regard to construction of questionnaires and to persons familiar with the substantive content of this study. Those reviewing the instrument included members of the graduate faculty and undergraduate faculty in the school of nursing. Faculty members of the Department of Human Ecology and Psychology were consulted as well. After this review took place and the questionnaire had been corrected for technical difficulties such as spelling and punctuation, a revised version of the instrument was pretested. A sample of 26 women in the 13th to 33rd week of gestation was utilized. The subjects volunteered to fill out questionnaires while attending an early bird prenatal class. Revisions were made as a result of this pretest and included the addition of questions to determine parity and the date the questionnaire was filled out. Corrections were again made in spelling and general format and wording was changed to counteract response set. This final revised instrument was then utilized in the present study.

Betts QMI Vividness of Imagery Scale (QMI). This is a self report instrument used to measure vivid versus weak imagery. A copy of this instrument is included in Appendix C

and includes 35 statements divided into seven sensory modality categories, for example, visual, auditory and kinesthetic. Subjects were asked to image and then rate each item on a scale of one to seven as to the vividness of that image. A score is then given as a measure of overall imagery vividness. The range of possible scores is 35 to 245 (Richardson, 1969). White, Sheehan and Ashton (1977) recently published an article surveying self report measures of imagery assessment. They conclude that the QMI is internally consistent and reliable. Correlation coefficients range from moderate to high for the Test-retest coefficients ranged from .54 to .91 and tend QMI. to be lowest when the interval between testing is greater than 12 months. All coefficients were significant at p < .01 level. Intertest data for the QMI versus the Gordon Test when factor analyzed load highly on the same factor. Varying degrees of construct validity have been determined but scores are felt to be reliably associated. Paivio (1971) reports coefficients of .92 and .98 for intertest comparisons between Sheehan's 1967 Betts QMI versus the longer form of Betts Questionnaire Upon Mental Imagery developed in 1909.

Desire for Pregnancy Subscale of the Pregnancy Research Questionnaire (PRQ). This instrument was developed to measure both the psychosomatic and psychological responses to pregnancy. Internal consistency reliabilities of the scales are generally high with a .76 correlation for the Desire for Pregnancy subscale (Schaefer & Manheimer, 1960). The range of possible scores for this subscale was from 7 to 34. Higher scores indicated less desire for pregnancy and conversely low

scores indicated higher desire. Content validity for this instrument is supported by its wide use in the literature. Erickson (1977) used the PRQ in her study of 717 private obstetrical clients. Subjects were approached individually while waiting for routine obstetrical examinations and requested to fill out self-report questionnaires to determine maternal age, health status before and during pregnancy as well as the PRQ. Subjects were in all stages of pregnancy and were selected randomly from a large university hospital population. Scores on five subscales of the PRQ were shown to have a significant relationship to complications among multigravidas. It was felt that psychological variables as determined by the PRQ can discriminate women who have later complications of pregnancy and labor and delivery. When health status was held constant psychological variables were still predictive of later complications in multigravidas.

Barclay & Barclay (1976) also used the PRQ in their study of 72 subjects. They examined the attitudes toward pregnancy in nulliparous versus pregnant women. They found similar attitudes among the two groups. There were no significant differences in desire for pregnancy in the pregnant versus non pregnant women.

Meikle, Brody, Gerritse, & Maslany (1973), in a study to compare psychosomatic and psychological reactions to pregnancy in women applying for therapeutic abortion and a control group not seeking abortion utilized the PRQ. Seventy-five women who were seeking abortion at the obstetrics and gynecology department of a general teaching hospital were given the PRQ.

These subjects were both multiparous and primiparous and in the first trimester of pregnancy. A group of 33 women in the first trimester of pregnancy who were not seeking abortion served as a control group. Demographic variables were not compared or delineated beyond a brief investigation of age differences. The group seeking abortion showed significantly lower scores on the Desire for Pregnancy subscale than the control group at the .01 level of significance.

Vaughn, Deinard & Egeland (1980) utilized the PRQ in their study to determine the relationship between psychological variables and how mothers rated their infant's temperament. One hundred and eighty-seven subjects were given a large battery of psychological tests during the third trimester of pregnancy. They were then asked to rate their infant's temperament at 3 and 6 months postpartum. It was found that desire for pregnancy was related to ratings of infant's temperaments at the .01 level of significance.

Demographic Data. Information such as age, race, religion and marital status have been collected by a structured questionnaire. A copy of this is included in Appendix C. This information is included in the questionnaire to clarify and delineate the sample population and to observe possible relationships between these variables. All items have been carefully thought out and included for their possible contribution to the aims of the study. For example, religion is included because some religions teach that the fetus is a human being from the moment of conception and this might have

a relation to perception of the fetus as a separate individual. Age and marital status are included for their possible relation to desire for pregnancy and maternal image of the fetus. The incidence of unwed teenage pregnancies is increasing and it is this group who exhibit high rates of undesirability for pregnancy (McDonnell, 1979). Other demographic variables were also included for their possible relation to the variables in this study, and non-pertinent questions were excluded.

Socio-economic Status (SES). Socio-economic status was determined by using a revised Socio-Economic Index for Occupations in Canada by Blishen and McRoberts (1976). In 1967 a correlation between Blishen's Socio-Economic Index for Occupations in Canada and an earlier version by the same author in 1951 yielded a coefficient of .96 indicating stability over Intertest comparisons between the Pineo-Porter scores time. and this 1967 Index yielded a high correlation, .92, as well as comparison with the Tuckman scale which yielded .91 correlation. When comparing scales reported for a number of industrialized countries and the Blishen scale, coefficients ranged from .74 for Germany to .94 for the United States (Blishen, 1967).

Use of this method involves looking up the subjects occupation on an alphabetical list of 480 occupations. These occupations have been ranked according to three main criteria. The first criteria is average incomes earned by that profession or occupation. The second is the average educational level attained by members of that profession and the final criteria

for assigning rank was the prestige score assigned to that occupation. This system enables the researcher to place a subject in one of six possible socio-economic classes. Class I would include the highest ranked occupations and inversely Class VI the lowest. In the present study socio-economic status for each subject was determined by the occupation of the subject's husband or the baby's father.

Results

Research Questions

The first research question is: Is there a relationship between direct validation of the pregnancy in the second trimester and the maternal image of the fetus? To answer this question subjects were divided into four categories. The first group had neither felt the baby move nor heard the fetal heartbeat. The second group had heard the fetal heartbeat only. The third group had detected fetal movement only and the fourth group had experienced both fetal movement and heard the fetal heartbeat. Fifteen subjects or 24.2 percent had experienced both movement and heard the heartbeat. Thirteen subjects or 21 percent had detected fetal movement only. Ten or 16.1 percent had only heard the heartbeat and 24 or 38.7 percent had experienced neither (see Table 3).

In order to determine the relationship between this categorical data and scores on the Maternal Image of the Fetus Scale, the Kruskal-Wallis test was utilized. This is a nonparametric one-way analysis of variance and was chosen because of the ordinal nature of the data and the small sample size. The Kruskal-Wallis was also selected because of its utility

TABLE 3

FOUR GROUPS OF DIRECT VALIDATION OF PREGNANCY IN RELATION TO MEAN RANK SCORES ON THE MATERNAL IMAGE OF THE FETUS SCALE^a

	n	90	Mean Ranks
Group 1	24	38.7	25.33
Experienced neither fetal			
movement nor fetal heartbeat			
Group 2	10	16.1	36.30
Experienced fetal heartbeat			
only			
Group 3	13	21.0	31.08
Experienced fetal movement			
only			
Group 4	15	24.2	38.58
Experienced both fetal			
movement and fetal heartbeat			

N = 62

^aKruskal Wallis 1 way anova yielded χ^2 = 7.477, <u>p</u> = .058

in comparing categorical data with an ordinal scale. After correction for ties a chi-square was obtained of 7.477 which is significant at the .058 level. If the .05 level is chosen as the criterion measure, it would appear that there is a relationship approaching significance between scores on the MIF and direct validation of pregnancy for this sample using the four categories.

If the data are collapsed into two categories, one of which has not experienced any form of direct validation of pregnancy and the other which has experienced fetal movement or fetal heartbeat or both, the results are statistically significant. By using the Mann-Whitney U test, a nonparametric alternative to the <u>T</u> test of the difference between means of two independent samples, a <u>z</u> score of -2.11 was obtained which is significant at the .035 level for a two tailed test. The Mann-Whitney U was chosen due to the ordinal nature of the data and small sample size. Its particular utility is exhibited in comparisons between two means. Mothers who have experienced any form of direct validation scored higher on the MIF.

A question which has not been addressed in the literature is the possibility of significant differences between modes of direct validation of pregnancy and scores on the MIF. Is there a difference between hearing the heartbeat, as opposed to feeling the baby move, as opposed to both or none and imaging the fetus as a human being? Might the combined experience of both hearing the heartbeat and detecting movement have a stronger effect or impact on the relationship between direct

validation of the pregnancy and scores on the MIF? By utilizing multiple confidence interval procedures for the Kruskal-Wallis test, it was found that the only relationship reaching significance was that between those experiencing both fetal movement and fetal heartbeat and those experiencing neither of these. Those experiencing both (group 4) had significantly higher scores on the MIF than those experiencing neither (group 1). All three groups experiencing some form of direct validation of pregnancy had higher scores than those experiencing neither but only the combination of fetal heartbeat and movement reached statistical significance. The trend toward higher scores on the MIF if validation has occurred is obvious when mean ranks are viewed in relation to the four categories of validation (see Table 3).

The second research question is: Is there a relationship between maternal attitude toward the pregnancy in the second trimester and the maternal image of the fetus? Scores on the Desire for Pregnancy Subscale were compared with scores on the Maternal Image of the Fetus Scale. Spearman's Rho was utilized to determine the extent of the relationship between scores. Spearman's Rho was utilized as a nonparametric alternative to Pearson's \underline{r} . A coefficient of -.33 was obtained which is significant at the .008 level. It would appear that there is a significant relationship between scores representing desire for pregnancy and the maternal image of the fetus scores. The negative correlation coefficient reflects an inverse relationship and this is due to the scoring method of the Desire for Pregnancy subscale. As the score decreases, the desire for

pregnancy increases so that low scores indicate high desire.

The final research question is: Is there a relationship between the mother's ability to form vivid images and the maternal image of the fetus in the second trimester? Scores on the QMI were compared with scores on the Maternal Image of the Fetus Scale by using Spearman's Rho. A coefficient of .126 was obtained which was only significant at the .156 level. In light of these results there does not appear to be a very strong relationship between vividness of imagery and the maternal image of the fetus. A summary of results of the analysis of all three research questions is presented in Table 4.

TABLE 4

VARIABLES, STATISTICAL TESTS, AND RESULTS RELATED TO THE RESEARCH QUESTIONS

					······································		
	Va	riabl	es		Statistical Test	Result	p
DVP	vs.	MIF	(4	groups)	Kruskal-Wallis	$x^2 = 7.477$.058
DVP	vs.	MIF	(2	groups)	Mann-Whitney U	$\underline{z} = -2.106$.035
QMI	vs.	MIF	,		Spearman's Rho	coefficient .0126	.156
PRQ	vs.	MIF			Spearman's Rho	coefficient 33	.008

Other Related Results

Demographic variables were also examined for their relation to scores on the MIF scale. There were no significant relationships found between age, religion, gestational age, marital status or socio-economic status and scores on the MIF (see Table 5).

TABLE 5

RELATIONSHIP OF DEMOGRAPHIC VARIABLES TO MATERNAL IMAGE OF FETUS SCORES

Variable	Statistical Test	Result	p
Age	Spearman's Rho	Coefficient=.0064	.961
Religion	Kruskal-Wallis	$\chi^2 = 1.562$.668
Marital Status	Man-Whitney U	z =538	.596
Socio-economic Status	Kruskal-Wallis	$\chi^2 = 1.904$.862
Gestational Age	Spearman's Rho	Coefficient=.2154	.093

Part I of the MIF was analyzed for possible trends. The first three questions attempted to ascertain the age or stage in the developmental process that was most frequently imaged by the mother. It was found that Question 2, "When I imagine my baby I most often picture a newborn baby.", was answered definitely yes or yes by 77.4 percent of the respondents. Only 8.1 percent indicated definitely yes or yes responses to Question 1, "When I imagine my baby I most often picture a full grown child." Likewise, only 8.1 percent indicated a definitely yes or yes answer to Question 3 which states, "When I imagine my baby I most often picture an unborn fetus." This

sample population most often imagined their unborn babies as being newborn babies (see Table 6).

TABLE 6

FREQUENCY OF RESPONSES INDICATING IMAGE OF THE UNBORN CHILD AS, FULL GROWN CHILD, NEWBORN, OR FETUS

	Definitely	Yes or	Yes	Response
· · · · · · · · · · · · · · · · · · ·	n		8	
Question 1.	5		8.1	
When I imagine my baby I				
most often picture a full				
grown child.				
Question 2.	48		77.4	
When I imagine my baby I	:			
most often picture a newborn	L			
baby.				
Question 3.	5		8.1	
When I imagine my baby I mos	t			
often picture a fetus.				

Another interesting finding is that while 74.2 percent indicated a definite yes or yes response to only one of the three questions, 9.7 percent answered with a definitely yes or yes answer to two of the three questions and 16.1 percent were unable to

answer any of the questions by yes or definitely yes. The latter group was unable to definitely place their imaged child in any of the three categories, full grown child, newborn baby or fetus (see Table 7).

TABLE 7

FREQUENCY OF POSITIVE RESPONSES TO QUESTIONS REGARDING STAGE OF DEVELOPMENT IMAGED

	n	ç
Responded with Definitely Yes or	46	74.2
Yes to only one question regarding		
age of child imaged.		
Responded with Definitely Yes or	6	9.7
Yes to two of the questions		
regarding age of child imaged.		
Responded with Definitely Yes or	10	16.1
Yes to none of the questions		
regarding age of child imaged.		

Questions 4 and 5 in Part I of the MIF were analyzed and indicative of direct validation of pregnancy which has been discussed earlier. Questions 6, 7, 8 and 9 were asked to determine how a mother's image of her fetus compares with her concept of the "normal" fetus. Twenty-two subjects or 35.5

percent answered all four questions with responses indicating normality, for example, as strong as, as healthy as, as active as, as big as other babies at this time. Sixteen or 25.8 percent gave responses indicating normality or indicating better than normal in one or more characteristics (i.e. stronger, larger, healthier or more active than most babies). The total percent of subjects indicating normal or better than normal responses was 59.7 percent. The remainder indicated that their baby was less than normal in one or more characteristics, 40.3 percent. Nine subjects indicated 2 or more less than normal responses. Six subjects indicated 2 less than normal responses, 2 indicated 3 less than normal responses and only one subject indicated that her baby was less than normal in all four categories (see Table 8). An interesting finding was that of the nine subjects who had 2 or more less than normal characteristics, eight had not experienced any form of direct validation of pregnancy.

When looking at each question it was found that in response to Question 6, 19 subjects felt their babies were smaller than most babies and 5 subjects felt that their babies were larger than most. Of the 19 who felt their babies were smaller, 9 had experienced direct validation of pregnancy. In regard to Question 7, only 4 subjects felt their babies were weaker than normal and 2 of these had experienced direct validation of pregnancy. In looking at Question 8, 11 subjects felt that their babies were less active than normal and 9 out of the 11 had not experienced validation. Question 9 showed that only four subjects felt that their babies were less healthy than

TABLE 8

RESPONSES INDICATING IMAGE OF THE FETUS IN

COMPARISON TO THE "NORMAL" FETUS

Response	n	Q
All four responses in the normal category	22	35.5
All responses in the normal category except one or more in the above normal category	15	24.2
All responses in the normal or above normal category (Combination of the first two patterns)	37	59.7
All responses in the normal category except one or more in the less than normal category	25	40.3
Three responses normal and one response less than normal	16	25.8
Two responses normal and two responses less than normal	6	9.7
One response normal and three responses less than normal	2	3.2
All four responses less than normal	1	1.6
normal and 3 of these 4 had not experienced direct validation of pregnancy. Further study is needed in this area to determine the relation between direct validation of pregnancy and the tendency to view the fetus as normal (see Table 9).

TABLE 9

FREQUENCY OF RESPONSES INDICATING A LESS THAN NORMAL IMAGE IN RELATION TO VALIDATION OF PREGNANCY

. <u> </u>	Question	n	DVP	no DVP
6.	How big do you feel your baby	smaller	9	10
7	is?	19 Waakar	C	
1.	baby is?	weaker 4	Ζ.	Ζ.
8.	How active do you feel your	less active	2	9
	baby is?	11		
9.	How healthy do you feel your	less healthy	1	3
	Dapy Is:	4		

Within the continued analysis of Part I of the MIF, Question 10, "I think about the baby, most of the time, often, seldom or never" is very interesting. By using the Kruskal-Wallis test it was found that the relationship between scores on the MIF and frequency of thinking about the baby is signi-

ficant at the .039 level. Only one subject indicated that she seldom thought about the baby and she scored the second lowest score on the MIF. All other subjects were more or less evenly distributed. Twenty-nine thought about the baby most of the time and 32 said they thought about the baby often. No one chose "never" as a response in relation to thinking about the baby.

The final question was, "This is my first pregnancy, true or false," This was to determine parity and all subjects indicated that this was indeed their first pregnancy.

The Maternal Image of the Fetus Scale included areas on the questionnaire for comments to enhance the quantitative data. Unfortunately, very few subjects wrote comments on their questionnaires. Most of the comments were to clarify specific answers such as in response to, "I worry about having a miscarriage" a "no" answer was indicated with the comment, "I did at first but not now" and another subject indicated, "It makes no difference" to the question pertaining to desired sex of the child and she wrote in beside it, "healthy." A third subject clarified the age of the child imaged by the following comment, "More the period between ages one and two. My nephew is one and one-half years old -- See him a lot." This same subject indicated that she had not yet purchased articles for the baby and clarified her answer by the following remark, "Will wait till I'm off work so I don't get bored at home for two months." A fourth subject indicated that questions 2, 7, and 19 in Part II of the MIF were confusing. Two other subjects made this comment verbally. Those questions were worded to

control for response set and it is apparent that further rewording of the questions is probably called for. The fifth subject who took the time to write comments pointed out that, "Trains don't whistle" when asked to rate the vividness of imagery evoked by the statement, "The whistle of a locomotive." This same subject was concerned about the purpose of the study and the rationale for questions. She stated, "If you want to improve prenatal care why not ask specific questions about what we want from our doctors, and hospital experience" and she made the following comment, "I fail to understand how such questioning will help improve our prenatal care" in response to the section on vividness of imagery. Ιt is unfortunate that this subject did not approach the researcher with this question. She will be sent results of the study, however, and this may answer some of her questions. The final comment was more positive in nature and is as follows, "This quiz makes me realize how quickly I am conceiving a total human being, closely connected to my own being but also as far from myself as being another totally different person, an individual. The feeling is rewarding."

The preceding presentation of results and data analysis have answered the basic research questions within the main objective of the study. There is, however, an additional area discussed in the review of the literature but not central to the focus of the study. This theoretical area involves desire for pregnancy in relation to experiencing direct validation. Many sources quoted in the literature have stated that the desire for the pregnancy increases after detection of fetal

movement has taken place. A Kruskal-Wallis Test was applied to this relationship but failed to reach significance at the .05 level. Also in the literature authorities have pointed out that as the pregnancy progresses there is a shift in attitude from unwanted to wanted. Spearman's Rho failed to show a significant relationship between gestational age and desire for pregnancy scores. There was also no significant relationship between desire for pregnancy and scores on the QMI (see Table 10).

TABLE 10

DESIRE FOR PREGNANCY VERSUS DVP, QMI, AND GESTATIONAL AGE

Variables	Statistical Test	Result	p
Desire for Pregnancy vs. DVP (4 groups)	Kruskal-Wallis	$\chi^2 = 2.071$.558
Desire for Pregnancy vs. DVP (2 groups)	: Mann Whitney U	z = .037	.971
Desire for Pregnancy vs. QMI	Spearman's Rho	coefficient =09	.475
Desire for Pregnancy vs. Gestational Age	Spearman's Rho	coefficient = .104	.423

When looking at demographic variables in relation to desire for pregnancy, the only relationship reaching significance was between desire for pregnancy and marital status (see Table 11).

TABLE 11

RELATIONSHIP OF DEMOGRAPHIC VARIABLES TO DESIRE FOR PREGNANCY SCORES

			· · · · · · · · · · · · · · · · · · ·
Variable	Statistical Test	Result	<u>p</u>
Age	Spearman's Rho	coefficient =08	.42
Religion	Kruskal-Wallis	$\gamma^2 = .343$.95
Marital Status	Mann-Whitney U	z = 2.97	.003*
Socio-economic Status	Kruskal-Wallis	χ^2 = 4.211	.519

*p <.05 only significant result.

Discussion

Interpretation

Results from this study support the existence of a relationship between direct validation of pregnancy and imaging the fetus as a separate human being. There were higher scores on the MIF in all three groups of pregnancy validation and the group having the combined experience of hearing the heartbeat and detecting fetal movement had significantly higher scores. As a woman moves through her pregnancy these developmental milestones such as direct validation of the pregnancy appear to have an effect on the way she perceives and begins to relate to her child. This conclusion is supported by the results showing no significant relationships between scores on the MIF and age, religion, SES and gestational age. It would appear that none of these factors bore a relationship to how a mother

imaged her unborn child, rather it is the experience of fetal movement and/or fetal heartbeat that gives validity to the pregnancy and in turn bears a relationship to perceiving the unborn child as a separate individual.

The most significant finding of this study was the relationship between desire for the pregnancy and scores on the Support for the theoretical view that, if a woman wants MIF. her pregnancy she is significantly more likely to see her unborn child as an individual, was found. Although this relationship was very significant, p = .008, it must be noted that subjects were not represented in the lowest ranges of both the MIF and Desire for Pregnancy subscale. This particular sample was generally desirous of their pregnancies and imaged their fetus as individuals. One can only question whether the inverse theoretical relationship exists. The concept that, if one is not desirous of their pregnancy they might not image a separate human being, must be viewed in light of this limitation.

There did not appear to be a relationship between how vividly a mother is able to image and visualizing the fetus as a separate individual. The impact of fetal movement and hearing the fetal heartbeat as well as desiring the pregnancy increase the likelihood that a mother thinks about her unborn child as an individual but this process doesn't appear to be effected by her ability to form vivid images. Here again it is important to note that no one scored in the two lowest categories of vividness of imagery. This might be due to the pregnancy as the literature states that pregnancy is a period

of heightened fantasy. Another explanation might be the fact that females almost invariably report more vivid imagery than males (White, et. al., 1977). These possible explanations still need further investigation. Visualizing the fetus as a separate human being might be accomplished just as well by those with vivid imagery as those with less vivid imagery.

It is interesting to note that there were no significant relationships found between demographic variables and the MIF scores. The Catholic Church teaches that the fetus is a human being from the moment of conception. Thirty-six percent of the sample indicated their religion as Catholic but this group did not score significantly higher on the MIF scale. This might indicate that visualizing the fetus as a separate human being is probably more related to other factors such as desire for pregnancy and direct validation of pregnancy than to religious orientation. However, consideration must be given to the idea that membership in a religious denomination doesn't necessarily indicate that the members believe in or have accepted the church doctrine. There was no relationship between age and scores on the MIF. A younger mother is probably just as likely to see her fetus as a separate individual as is a mother of more advanced age. The relationship between marital status and scores on the MIF were not significant. This is worth noting because of the problems associated with unwed mothers in terms of the mother-child relationship found in It is only possible to view this interprethe literature. tation with caution as only 4 of the 62 subjects were unwed. This is an area for further investigation. It would be

beneficial to determine the relationship between age and marital status and image of the fetus, with a larger and more representative sample before coming to premature conclusions. Socio-economic status was not related to scores on the MIF. Thirty-nine percent of the sample was in the top two socioeconomic groups and educationsl levels were high as well. Definite conclusions are difficult to accept when those in the lower status groups have been under represented in the sample.

There was not a significant relationship between gestational age and scores on the MIF. Statistical significance was found to be at the .093 level. Because there is a highly significant relationship between direct validation of pregnancy and gestational age and there is also a relationship between validation and MIF it might be expected that a relationship exists between gestational age and MIF. In other words there is evidence suggesting that as a woman advances in weeks of pregnancy she is more likely to have felt movement or heard the heartbeat. There is also evidence that once she had experienced these validation processes she is more likely to visualize the fetus as a human being. It follows then that one might suppose that as weeks of pregnancy advance, visualization of the fetus as a human being is more likely. This relationship has yet to be established by research.

Interpreting Part I of the MIF has to be done in light of the limitations of the study. It is a small sample but findings do indicate some interesting trends. The majority of the sample indicated visualizing a newborn baby most often.

Some authors have tried to establish a relationship between the age of the child imagined and the subsequent mother-child relationship. It needs to be established that normal patterns of ideation exist before being able to test subsequent behavioral concomitants. The finding that only approximately 60 percent of the sample characterized their unborn babies as normal or better than normal is both fascinating and unexpected. It remains to be seen if this is a common trend among pregnant women. Do many see their unborn children as less than normal and does this have an effect on subsequent maternal-child relationships? In reviewing the questionnaires of those who were excluded from the study due to having experienced ultrasound, it was found that 81.2 percent viewed their fetuses as normal or above normal. These trends have many implications for further research.

The fact that 61 of the subjects indicated that they thought about their babies often or most of the time would certainly support the theoretical viewpoint that pregnancy is a time of heightened fantasy. Only one subject seldom thought of her unborn child. It would be interesting to know what value this knowledge has in terms of prediction. Logically, it would follow that someone who rejects and denies her pregnancy probably doesn't think of her unborn baby very often, but here again is an area for further study.

It was seen in the analysis of the data that relationships concerning desire for pregnancy in relation to other variables were submitted to statistical measurement. While these relationships do not involve the research questions they

are addressed in the review of the literature and lend themselves to interpretations.

Subjects who had detected fetal movement or heard the fetal heartbeat were not significantly more desirous of their pregnancies. While this evidence does not support the theoretical view, it can not be used to refute it either. One might suspect that sampling from prenatal classes where attitudes are relatively positive might account in part for this result. The small sample size and the degree to which the sample is representative should be taken into consideration. Contrary to the expectation engendered by the literature, there was no relationship between gestational age and desire for pregnancy. Women were not significantly less desirous of their pregnancies at 16 weeks than at 22 weeks. Consideration must be given to the fact that only a six week period was sampled. It may be that the changes in attitude referred to in the literature take place over a longer span of time during the pregnancy. Since vividness of imagery does not appear to be related to imagining the fetus as a separate human being it is not surprising that vividness of imagery is not related to desire for pregnancy. Demographic variables also had no relationship to desire for pregnancy except marital status which was significant at the .003 level. So it is likely that an unmarried mother is less desirous of her pregnancy. This result is not surprising in light of the literature and the present lack of social sanctions for unwed pregnancies.

Limitations

These interpretations can be accepted only within the context of the limitations of the study. The most obvious limitation is the small sample size. Only 62 subjects were included in the study. Also, the ability to generalize is severely limited by the fact that all subjects were volunteers. The question remains: Did those who refused to participate differ significantly from those who volunteered, thus limiting the generalizeability? Only the white race was represented which again limits the ability to generalize. All but one of the subjects were attending prenatal classes which is not neccessarily representative of all pregnant women. By sampling only those subjects who were attending prenatal classes it was found that no one scored in the lower categories on the Maternal Image of the Fetus Scale or in the lower ranges of the Desire for Pregnancy Scale. It might be assumed that if a woman is well motivated enough to attend prenatal classes she has indeed accepted her pregnancy and is more desirous of her condition than those who don't attend. Is it logical to asssume that those who deny their pregnancies and do not form relationships with the fetus would also not want to attend prenatal classes? This is perhaps the most obvious explanation for no one scoring in the lowest category of MIF scores or in the two lower categories of Desire for Pregnancy Subscale. One less obvious limitation is that the Maternal Image of the Fetus was developed for this study and has not been subjected to tests of validity and reliability over long periods of time or used with large numbers of subjects. The researcher also has to rely on the

subjects ability to recall questions of a historical nature and take into consideration the effects of social desirability before drawing any far reaching conclusions regarding interpretations.

Implications

One of the major tenets in the conceptual framework states that one of the tasks of pregnancy is to develop a perception of the fetus as a separate human being. The process by which a woman accomplishes this task and the variables that may enhance or hinder accomplishment are important for nursing to recognize. This information is important in health promotion and prevention. When looking at these two areas the feasibility of concentrating on high risk populations is apparent. Resources must be allocated where the need is the greatest. Awareness of expected patterns of behavior and development enable nursing to recognize deviations from the expected and apply appropriate interventions. The objective in health prevention related to this study is to prevent disturbed relations between mother and infant. Understanding that detection of fetal movement usually ushers in a sense of the child as a separate human being can aid nurses in recognizing high risk populations.

A mother who has detected movements but does not show any evidence of considering the fetus a separate human being, may need increased nursing intervention. The nurse in this case might utilize the knowledge he/she has in regard to the role fantasy plays in forming the image of the fetus by exploring

the images possessed by the mother and encouraging those which enhance the development of a more appropriate maternal-child relationship. Whether the client accepts and desires her pregnancy should be determined and subsequent counselling offered. Exploration of the possibilities for termination of the pregnancy could be a viable alternative. For those involved in abortion counselling the relationship which has been supported in this study between direct validation of pregnancy and beginning bonds of attachment enable nurses to understand the emotional impact which an abortion might have after life has been detected.

This study offers some useful information for those involved in prenatal teaching and counselling. This is an excellent area for women to learn expected patterns involved in the psychology of pregnancy. The simple reassurance that the drastic changes that the client is going through are all part of a recognized pattern can be helpful. The use of imagery could encourage sharing commonly held perceptions and feelings in a supportive group atmosphere.

It has been shown in the past that imagining certain scenes can have an effect on physiological functioning (White, et. al., 1977). Clients can learn to exercise control over heart rate, muscle tension, and body temperature. This has many implications for nursing care in the parinatal period. Further research needs to be done to apply this control in such areas as labor and delivery and prenatal psychological and physiological health.

This study can be seen to incorporate many implications

for practice but it also has implications for theory. The present research, while not conclusive, does offer support for the conceptual framework. It might be seen that the maternal image of the fetus varies in relation to many parameters. The age of child imagined, extent of fantasies, attribution of human qualities, attribution of physiological characteristics, assumption of the caretaking role and whether or not the mother imagines a separate individual with which to begin building a relationship are areas of wide variation. There is support for the concept that certain factors such as desire for the pregnancy and direct validation of the pregnancy have a relationship to the variation of the maternal image of the fetus.

Support for the broader concept that imaging and fantasizing is an important process in forming the perception of the fetus has been offered. The extent of fantasies which were in the majority characterized as often, to most of the time, supports this concept as well as the significant relationship between the frequency of imaging and scores on the MIF. Clarification in terms of the process of imagery has been aided in this study. The role of fantasies and imagining has been supported but it appears that the vividness of these images may not be a significant parameter to consider. Nurses are just beginning to explore the use of imagery and further research is needed to clarify the theoretical framework which supports its use.

Implications for future research are generated by this study. Probably the most crucial and comprehensive in scope is the question: If a mother scores low on the MIF scale is this related to and therefore, predictive of subsequent pro-

blems or disturbances in the maternal-child relationship? If a mother does not imagine her unborn child as a separate human being during pregnancy then it might be possible that the relationship between mother and newborn may be hard to establish and fraught with difficulties. This is a very important complex area which evolves from the present study and needs further investigation. An initial step which must be taken is to refine instruments such as the MIF scale. The MIF needs further use to establish reliability and validity ratings. It needs to be submitted to statistical measurements including item analysis, used in a wide variety of circumstances and generally refined. Further development of predictive instruments aimed at early diagnosis of disturbances in maternal-child relationships is needed. The MIF scale is focused on the middle trimester and those developmental tasks within this time period. Impetus might be given to the development of an instrument which is based on the tasks of all three trimesters of pregnancy. Incorporating the knowledge gained by this study and others will aid in the process of refining a predictive instrument which is critically needed for early diagnosis and intervention.

More specific areas for further investigation are generated by this study. Many questions arise from the present research and remain to be subjected to scientific analysis. Although a wide variety of resources in the community was utilized to recruit subjects, the resulting sample is not completely representative of the total population. The resulting limited generalizeability as well as the small

sample size leaves the researcher wondering: Would a larger and more representative sample yield comparable results? If subjects were recruited from locations other than prenatal classes would similar results be obtained? From this study it is obvious that high risk populations, for example, native peoples, lower socio-economic groups and unwed teenagers were not represented in the sample. Differences between low risk and high risk populations would constitute another area for further research.

With the increasing use of ultrasound in obstetrical care, more research needs to be devoted to this area. What is the psychological impact of ultrasound in relation to developing the maternal image of the fetus? How does ultrasound compare with detecting fetal movement or hearing the fetal heartbeat in terms of psychological consequences and the future mother-child relationship? Does the mother who has had ultrasound develop an image of her fetus more associated with "normal" characteristics? Can nurses use ultrasound to educate clients in relation to maternal images?

Another specific question generated from this study is: Do pregnant women have images that are more vivid than nonpregnant women? One also might want to ask if imagery can be taught. Can nurses teach clients to image their fetuses as separate human beings? Can they encourage a healthy warm relationship between mother and baby in the prenatal period through the use of imagery? If levels of vividness of imagery are predetermined an investigation might be conducted to discover differences between groups exhibiting high vividness

of imagery versus those with low. One such difference might be that those with high vividness of imagery scores have a significantly greater ability to exert control over areas of physiological functioning by using imagery than those who score lower.

The high incidence of mothers characterizing their unborn children as less than normal generated many questions. What factors influence a mother to feel her baby is less than normal? Does this pattern change over the course of the pregnancy? Is it more prevalent in earlier pregnancy than later weeks? Is there a self-fulfilling prophecy aspect to this? A mother who sees her fetus during pregnancy as less than normal might continue this feeling after the baby is born and then continue to perceive her newborn baby as less than normal. Does conception of the fetus as less than normal affect later maternal-child relationships?

There is a multitude of questions still unanswered in this crucial area. One final suggested area for further investigation might be to ask if there is a relationship between the stage of development of child imaged and future motherchild relationships. Normal patterns of fantasy need to be clarified and delineated before aberrations can be recognized.

In summary, this study has offered some answers to the initial research questions but it has generated many more questions than it has answered. There is a great need for continued research, particularly longitudinal studies which might relate prenatal psychological variables to later maternal-child relationships. Enlightenment will only be found in continued research.

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APPENDICES

APPENDIX A



HE UNIVERSITY OF MANITOBA

SCHOOL OF NURSING

Room 215 Bison Building Winnipeg, Manitoba Canada R3T 2N2

This letter is to introduce myself, Annette Gupton, graduate student, and to invite you to participate in a study of pregnant women and their feelings about their babies. If we can understand these feelings better, it might help us in offering improved care to pregnant women and in planning such activities as prenatal classes.

If you agree to participate in this study it involves answering some questions by filling out a questionnaire. It will take about 20 or 30 minutes of your time. Questions regarding age, marital status and income, as well as other personal information have been included in this questionnaire. These questions are included for their importance to the central aim of the study. You are asked not to place your name on any of the pages of the questionnaire as all participants in the study will remain anonymous.

This study is conducted under the supervision of the Nursing Eaculty at the University of Manitoba. You do not have to participate in this study and if you decide not to, it is perfectly acceptable for you to refuse. Your prenatal care is not affected in any way by your participation or non-participation in this study.

The results will be based on group data, not individual questionnaires and may be published in the form of a journal article. If you would like information regarding results of this study, please leave me your name and address at the bottom of this page, detach from the questionnaire and hand in. A summary of the results will be mailed to you.

Name

No. & Street

City & Province_____ Postal Code

APPENDIX B

:

Consent to Participate

I,_____, agree to participate in the study of women's feelings during pregnancy.

I have read the letter of explanation and understand that in order to participate I am being asked to complete a questionnaire.

I know I can decide not to complete the questionnaire at any time and that this will not change my prenatal care in any way.

Signature of Investigator

Signature of Respondent

Date

APPENDIX C

Date:

QUESTIONNAIRE (Desire for Pregnancy Subscale of the PRQ)

In the following questions, we would like to know about some of your feelings about pregnancy. It is important that you answer all questions. After each statement, please check the answer that best describes your feelings. There are no right or wrong answers: we only want to find what the experiences of women are. While filling out this questionnnaire please do not discuss your answers with anyone else. We are interested in individual opinions only.

 Before pregnancy, I had been looking forward to having a baby. Strongly agree_Mildly agree_Mildly disagree_Strongly disagree_
 When I first found out that I was pregnant, I was: Delighted_Happy_Just accepted it_was neither happy or unhappy_
 I would like to have:
 A boy__A girl__It makes no difference_____
 I did not want to have a baby at this time.

Strongly agree__Mildy agree__Mildly disagree__Strongly disagree__
5. Before I became pregnant, we were hoping to have a baby.
Strongly agree__Mildly agree__Mildly disagree__Strongly disagree__
6. I sometimes wish that I weren't going to have this baby.
Strongly agree__Mildly agree__Mildly disagree__Strongly disagree__
7. I tried to keep from becoming pregnant.

True___False___

8. This was the wrong time for me to have a baby because of: (Check all reaons that apply to you). My health ____Money problems____ Housing problems ____I did not want to leave my work ____My husband or family does not approve ____I have enough children ____I'm not ready to settle down ____It interferes with other plans ____None of the above.____

94.

(Demographic Information)

1.	Have you previously attended prenatal classes?
	YesNo
2.	Age:
3.	Religion: (Check one)
	ProtestantCatholicJewishOther
4.	Race: (Check one)
	White Oriental Black Native Other
5.	Date of last normal menstrual period:
6.	Expected Date of Delivery:
7.	Marital Status: (Check one)
	SingleMarriedSeparatedDivorcedWidowed
8.	What was the last grade in school you completed? (Circle grade)
	Grade School Through High School University Advanced University
9.	What is your usual occupation?
10.	Briefly describe the type of work you do:
11.	(If married or living with baby's father), What is your hus-
	band's (baby's father's) usual occupation?
	Briefly describe the type of work done:
12.	What was the last grade in school your husband (baby's father)
	completed? (Circle grade)
	Grade School Through High SchoolUniversityAdvanced University123456789101112131234
13.	Have you had any of the following tests during this pregnancy? (Please check)
	Amniocentesis
	Ultrasound
	Fetal Assessment
	OCT (stress test)
	None of the above

14. Do you have any chronic illness?

Yes No If yes, please specify:

15. Have you ever had a miscarriage or abortion?

Yes No Unsure

16. Have you ever been treated for psychiatric illness?

Yes___No____

17. Have you ever been hospitalized for psychiatric illness? Yes No

(Betts QMI)

The purpose of the next part of this questionnaire is to determine the vividness of your imagery. The items of the test will bring certain images to your mind. You are to rate the vividness of each image by reference to the accompanying rating scale, which is shown at the bottom of the page. For example, if your image is vague and dim you give it a rating of 3. Record your answer in the brackets provided after each item. Just write the appropriate number after each item. Before you turn to the items on the next page, familiarize yourself with the different categories on the rating scale. Throughout the test, refer to the rating scale when judging the vividness of each image. Please do not turn to the next page until you have completed the items on the page you are doing. Complete each page before moving on to the next page. Try to do each item separately, independent of how you may have done other items.

The image aroused by an item of this test may be:

Perfectly clear and as vivid as the actual experience. Rating 7 Very clear and comparable in vividness to the actual Rating 6 experience. Moderately clear and vivid. Rating 5 Not clear or vivid, but recognizable. Rating 4 Vague and dim. Rating 3 So vague and dim as to be hardly discernible Rating 2 No image present at all, you only "know" that you Rating 1 are thinking of the object.

9.6

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An example of an item on the test would be one which asked you to consider an image which comes to your mind's eye of a red apple. If your visual image was moderately clear and vivid, you would check the rating scale and mark "5" in the brackets as follows:

Item

3. red apple

When you have understood these instructions you may begin the test.

Think of some relative or friend whom you frequently see, considering carefully the picture that rises before your mind's eye. Classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item

1. The exact contour of face, head, shoulders and body. ()

2. Characteristic poses of head, attitudes of body, etc. ()

3. The precise carriage, length of step, etc. in walking. ()

4. The different colors worn in some familiar costume. ()

Think of seeing the following, considering carefully the picture which comes before your mind's eye, and classify the image suggested by the following question as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item

Rating

()

5. The sun as it is sinking below the horizon.

Think of each of the following sounds, considering carefully the image which comes to your mind's ear, and classify and images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Sclae.

<u></u>	m	Rating
6.	The whistle of a locomotive	()
7.	The honk of an automobile	()
8.	The mewing of a cat	()
9.	The sound of escaping steam	()
LO.	The clapping of hands in applause	()

Rating

(5)

Rating

Think of "feeling" or touching each of the following, considering carefully the image which comes to your mind's touch, and classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item	<u></u>	Rat	ing
11.	Sand	()
12.	Linen	()
13.	Fur	()
14.	The prick of a pin	()
15.	The warmth of a tepid bath	()

Think of performing each of the following acts, considering carefully the image which comes to your mind's arms, legs, hips, etc., and classify the images suggested as indicated by the degree of clearness and vividness specified on the Rating Scale.

Item		Ra	ting	ł
16.	Running upstairs	()	
17.	Springing across a gutter	()	
18.	Drawing a circle on paper	()	
19.	Reaching up to a high shelf	()	
20.	Kicking something out of the way	()	

Think of tasting each of the following, considering carefully the image which comes to your mind's mouth, and classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rat	ing
21.	Salt	()
22.	Granulated (white) sugar	()
23.	Oranges	()
24.	Jelly	()
25.	Your favourite soup	()

Think of smelling each of the following, considering carefully the image which comes to your mind's nose and classify the images suggested by each of the following questions as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rat	ing
26.	An ill-ventilated room	()
27.	Cooking cabbage	()
28.	Roast beef	()
29.	Fresh paint	()
30.	New leather	()

Think of each of the following sensations, considering carefully the image which comes before your mind, and classify the images suggested as indicated by the degrees of clearness and vividness specified on the Rating Scale.

Item		Rat	ing
31.	Fatigue	()
32.	Hunger	()
33.	A sore throat	()
34.	Drowsiness	()
35.	Repletion as from a very full meal	()

Comments
(Maternal Image of the Fetus Scale)

In the following questions, we would like to know about some of your feelings about pregnancy. It is important that you answer all questions. After each statement, please check the answer that best describes your feelings. There are no right or wrong answers: we only want to find what the experiences of women are.

Part I

Comments

1. When I imagine my baby I most often picture a full grown child.

Definitely yes Yes Unsure No Definitely no

2. When I imagine my baby I most often picture a newborn baby.

Definitely yes Yes Unsure No Definitely no

3. When I imagine my baby I most often picture an unborn fetus.

Definitely yes Yes Unsure No Definitely no

4. I have felt the baby move.

Definitely yes Yes Unsure No Definitely no

5. I have heard the baby's heartbeat.

Definitely yes Yes Unsure No Definitely no

6. How big do you feel your baby is?

()smaller than other babies at this time.()as big as other babies at this time.()larger than other babies at this time.

7. How strong do you feel your baby is?

()weaker than other babies at this time.()as strong as other babies at this time.()stronger than other babies at this time.

8. How active do you feel your baby is?

()less active than other babies at this time.()as active as other babies at this time.()more active than other babies at this time.

9. How healthy do you feel your baby is?

()less healthy than other babies at this time.
()as healty as other babies at this time.
()healthier than other babies at this time.

10. I think about the baby:

Most of the time Often Seldom Never

11. This is my first pregnancy.

True False

Part II

Comments

1. I imagine my baby as being happy inside. Definitely yes Yes Unsure No Definitely no 2. I picture my baby as physically complete now. (for example, legs, arms, mouth, eyes, etc.) Definitely yes Yes Unsure No Definitely no 3. I talk to my baby by carrying on imaginary conversations with him or her. Definitely yes Yes Unsure No Definitely no 4. I have picked out a name for my baby. Definitely yes Yes Unsure No Definitely no 5. My baby's face does not look human now. Definitely yes Yes Unsure No Definitely no 6. My baby has thoughts of his or her own. Definitely yes Yes Unsure No Definitely no 7. I do not worry about my baby being malformed or abnormal. Definitely yes Yes Unsure No Definitely no 8. I stroke or pat my baby. Definitely yes Yes Unsure No Definitely no I have purchased articles for the baby. 9. Definitely yes Yes Unsure No Definitely no 10. My baby can hear now. Definitely yes Yes Unsure No Definitely no

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11. My baby has his or her own personality now. Definitely yes Yes Unsure No Definitely no 12. I refer to my baby by name or nickname. Definitely yes Yes Unsure No Definitely no 13. I have prepared a room or space for the baby. Definitely yes Yes Unsure No Definitely no 14. My baby has fingernails and toenails. Definitely yes Yes Unsure No Definitely no 15. I imagine my baby as a separate human being. Definitely yes Yes Unsure No Definitely no 16. I worry about having a miscarriage. Definitely yes Yes Unsure No Definitely no 17. My baby has emotions now. Definitely yes Yes Unsure No Definitely no 18. I picture myself feeding the baby. Definitely yes Yes Unsure No Definitely no 19. I do not imagine myself taking care of the baby. Definitely yes Yes Unsure No Definitely no

Comments

APPENDIX D

THE UNIVERSITY OF MANITOBA

Inter-Departmental Correspondence

CONFIDENTIAL

DATE November 5, 1981

TO Annette Gupton

re.

FROM C. Gow, Chairperson Ethical Review Committee, School of Nursing

SUBJE**CT:**

Graduate Student Thesis Proposal "Maternal Image of the Fetus in the Second Trimester of Pregnancy"

The Ethical Review Committee at its meeting of November 4, 1981 moved that this project be approved. Carried.

The following comments were raised:

- 1. The committee raised the question re "vividness of imagery" on p. 66 in the explanation to participants. Would this statement be difficult to understand? Perhaps further explanation will be necessary.
- 2. The committee supported the approach of allowing the participants to express concerns after completing the questionnaire. This was seen as a definite need.

C. Gow.