THE VALUE OF SELECTED TOPICS IN PRENATAL EDUCATION DURING DIFFERENT DEVELOPMENTAL STAGES OF PREGNANCY: A COMPARISON OF THE PERCEPTIONS OF PREGNANT WOMEN AND PRENATAL HEALTH CARE PROFESSIONALS

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INTRODUCTION

Prenatal care and education are effective methods to improve pregnancy outcome. Insufficient prenatal care is associated with complications such as low birthweight, premature birth, and congenital anomalies. Pregnant minority women, who are typically young and uneducated, are least likely to seek prenatal care and are therefore at greater risk for complications during pregnancy and birth (Singh, Torres, & Forrest, 1985; Ingram, Makuc, & Kleiman, 1986). Birth complications often result in lengthy hospitalization followed by long-term rehabilitation at great cost to society in terms of social and economic support. Early and continuous access to prenatal care and education is a cost-effective means of improving neonatal health while providing expectant women with health and pregnancy information (Merkatz, Thompson, Mullen, & Goldenberg, 1990; Andersen, Freda, Damus, Brustman, & Merkatz, 1989).

Childbearing, as a significant component of the family life cycle, is a time of developmental crisis for the pregnant woman and her family (Rubin, 1970). Maternity care is recognized by prenatal health care professionals as "family-centered;" that is, the family is the primary source of support and care for the pregnant woman (Hassid, 1978, p. 12). The role of prenatal health care professionals is to supply education and medical care for the pregnant woman. The purpose of prenatal education according to MacLachlan and Merkel (1990), is to "provide information that will contribute to safe, healthy, and

productive pregnancies, deliveries, and family functioning" (p. 115). Prenatal education not only diminishes increasing health care costs but facilitates health promotion. Davis and Reis (1988) assert that the primary objective of prenatal education is to persuade women to embrace health maintenance during pregnancy as a realistic and essential objective with health and pregnancy information (Merkatz, Thompson, Mullen, & Goldenberg, 1990; Andersen, Freda, Damus, Brustman, & Merkatz, 1989).

Statement of the Problem

Health care professionals have modified the childbirth process for some time through the use of prenatal education. Enkin (1990) asserts that women who seek prenatal information are motivated by their desire for accurate information. Many women actively participate with health care professionals in order to make personal health decisions (Oakley & Houd, 1990). Mercer (1986) noted that pregnant adolescents had less tendency to discuss any aspect of pregnancy; this was attributed to the possibility that the adolescent was less sensitive to emotional and physical changes of pregnancy. In any case, Mercer (1986) urged health care professionals to go beyond providing "routine care" due to the move from concrete to abstract thinking that occurs during adolescence. In order to achieve prenatal educational objectives, caregivers must assess the learning needs of each individual client and then, collaborate with the client to ensure that she receives information effectively (Enkin, 1994).

Teaching-Learning Milieu

Cooperation and effective communication between the pregnant woman and every member of the health care team is essential to ensure a supportive milieu that reduces anxiety, provides factual information, and focuses on current concerns (Hassid, 1978). Severson-De Muth (1989) proffers that educational content must be adapted to each individual client according to her particular circumstances; therefore, teaching goals are directed toward client needs at that specific time. Timing is a critical factor for consideration; allowing the client to select the time for teaching has been found to be an effective method conducive to learning (Smith, 1987). Prenatal health care professionals and educators can facilitate the pregnant woman's movement through the developmental process of pregnancy. By assessing

psychological task achievement or difficulty with this process, the health care professional can focus and direct the woman toward optimal task fulfillment and reinforce successful task achievement (Tanner, 1969). Preventative measures may be initiated in order to avoid maladaptive responses to pregnancy, leading to a healthy mental and emotional state for the woman and her family. After quickening, the woman becomes exceptionally receptive to learning, creating the ideal period in which to provide prenatal education and parenting skills (Hassid, 1978). When client education is a priority for both physicians and nurses, respect and appreciation for high quality client education evolves (Severson-De Muth, 1989).

The security of new scientific technology carries with it the assumption that "scientific management of pregnancy and childbirth would remove all risk and guarantee a perfect baby" (Enkin, 1994, p. 133); an expectation Enkin believes to be unreasonably high. The malpractice crisis has resulted in the practice of "defensive medicine, a tendency to regard patients as adversaries, and often a withdrawal from providing certain types of care" (Enkin, 1994, p. 133). The litigious nature of American society has produced an aftermath of excessive medical intervention that can be counterproductive. Prenatal healthcare professionals as well as mother and fetus, are safeguarded when practice is based on indications of efficacy, and on the mother's informed choice of alternatives (Enkin, 1994).

Purpose of the Study

This study will attempt to determine which pregnancy-related topics are of greatest perceived value by pregnant women in all three trimesters of pregnancy. The research will also attempt to determine which pregnancy-related topics prenatal professionals discuss with pregnant women during each trimester of pregnancy. The primary purpose is to determine if prenatal education needs change from one trimester to the next, according to the developmental tasks of pregnancy (Hassid, 1978; Rubin, 1970). A secondary purpose is to determine if prenatal health care professionals are supplying pertinent information at the optimal time of relevance.

Theoretical Rationale

Exchange theory is a framework applied to social relationships that is focused on the patterns, dynamics, perceptions, and development of relationships. Satisfaction, reciprocity, fairness, commitment, trust, and dependence serve as mediators of expanding relationships (Kelley & Thibaut, 1978). Patterns of equity, control, power, and decision-making are expressed within the exchange theory framework (Sabatelli & Shehan, 1993). The behavior of individuals in social relationships evolves as a result of conformity to requirements by the social system and is regulated by the norms and mandates of society. The response of individuals to a particular situation is influenced by their past experiences in social contexts (Jones, 1983). Turner (1987) asserts that human beings, while not consistently rational, will deliberate on the projection of costs and benefits in social transactions, which results in an assessment of available alternatives. Individuals correspondingly pursue information from others in order to enhance personal experiences (Sabatelli & Shehan, 1993).

Value Theory of Social Exchange

Emerson (1983) wrote that valued outcomes serve as reinforcing stimuli and states that "valued things have relative but not absolute value. The worth of a thing is expressed only in terms of another thing given up to get it" (p. 13). Individuals apportion more energy to those outcomes that are personally valuable. The value of a particular task is determined by the magnitude of the subsequent consequences derived from its performance; hence, the value is in it's ability to procure positive outcomes and avoid negative outcomes (Seta & Seta, 1990). The determinants of value are vague; however, Emerson (1983) specifies need, probability, and uncertainty as components of value. Exchange theory endeavors to describe the emergence, endurance, and disintegration of social relationships; therefore, exchange theory must have a component that allows consideration of the interests of the exchange partners involved in the relationship (Cook, 1990).

The greater the mutual exchange of rewards among people, the greater the emergence of reciprocal obligations and subsequent exchanges. As obligations and rewards are recompensed, mutual trust evolves, facilitating additional exchange. The development of trust and commitment in a

relationship is facilitated by the adherence to standards of reciprocity and fairness. Trust is the individual's conviction that a partner will not exploit or obtain inequitable advantage of the relationship. The development of trust is attached to the experience of reciprocity and equity (Sabatelli & Shehan, 1993). Violation of reciprocity results in distrust and negative ratification (Blau, 1964). Power contrasts with authority in that authority is the ability of one person to legitimately extract compliance from another.

While the calculation of potential rewards versus costs is simplistic, it is nevertheless a principal motivational force behind human behavior (Turner, 1987). Information used when making decisions about behavior in a relationship is derived from the individual's analysis of the various available options (costs and rewards). Each member of the dyad enters the interaction with a repertoire of responses that might impact the outcomes available to each individual. The greater the extent to which outcomes exceed expectations, the greater the attraction to the exchange process. Childbirth has the potential to influence the transactional levels of interdependence, subsequently altering patterns and dynamics of interaction (Sabatelli & Shehan, 1993). A fundamental element of the client education process involves the development of a positive and rewarding relationship between client and caregiver. Although the content in client education may be accurate, if the relationship component of the interaction is insensitive or disrespectful, client education is not effective (Severson-De Muth, 1989).

Developmental Model

Developmental models incorporate life-span physiological, cognitive, and psychosocial theories to describe individuals, environment, and health (Thibodeau & Hawkins, 1982). Development is a long process that suggests linear growth or change involving the process of maturation. A stage is an interval of time on a developmental continuum that is qualitatively different from antecedent or subsequent intervals; therefore, each individual is in a continual state of growth while progressing through the various developmental stages. Developmental models are based on the assumption that the process of development facilitates the achievement of the individual's maximum potential.

Developmental Stages of Pregnancy

Pregnancy has long been acknowledged as a time of dramatic physiological changes but only in the second half of the twentieth century has attention been directed toward the emotional and psychological changes of pregnancy. A number of critical variables within the family structure will change during pregnancy, creating a developmental crisis for the family. Tanner (1969) was one of the early pioneers to regard pregnancy as a developmental process with specific psychological tasks to be accomplished in order to facilitate an optimal outcome with integration into the life process. Developmental processes are those in which "physiologic changes and their psychological counterparts (which are stimulated by these changes) are integrated to enable the individual to progress from one phase of life to another. They offer opportunities for additional psychic growth and maturity" (Tanner, 1969, p. 292). These psychological tasks must be successfully obtained for the person to achieve beneficial emotional adaptation and elude difficulty with subsequent tasks (Hurlock, 1959).

Pregnancy as a Developmental Crisis. Pregnancy is considered to be a period of maturational crisis, defined as having "periods of marked physical, psychological and social change that are characterized by common disturbances in thought and feeling" (Parad, 1965, p. 73) Each of the three trimesters of pregnancy have distinct and definitive developmental tasks. Gessner (1989) posits that major developmental tasks such as those of pregnancy, provide motivation to learn. Bliss-Holtz (1988) discovered significant differences in prenatal education interests among the three trimesters, indicating that learning needs vary according to developmental stages of pregnancy. Maloney (1985) found that clients' interests usually change with the progression of pregnancy. At the beginning of pregnancy, women display more interest in the circumstances of their current status; interests shift to labor, delivery, and infant care as pregnant women approach the end of pregnancy. On the basis of these findings, Maloney (1985) concludes that teaching what is of interest to the client will follow a "natural subject chronology" (p. 247). Hassid (1978) concurs, stating that "people learn best what they desire to learn" (p. 10).

Adolescent Pregnancy

Pregnancy is a challenge to any female; to an adolescent, the challenge often becomes a crisis because it adds complexity to an already difficult period of physical and emotional changes (Turner, Grindstaff, & Phillips, 1990). American women tend to delay pregnancy until later in adulthood after a career has been established and life is stable. In contrast, adolescents have a greater tendency to incur pregnancy at an earlier age than in years past (Hamburg, 1986). This discrepancy in timing often yields stressful circumstances for the young mother, her baby, her family, and society at large. Because the girl has little life experience or social support, she selects options in the process of resolving new developmental tasks that result in harmful consequences. For a few fortuitous girls, the challenge is met and results in the accomplishment of critical growth in maturity and proficiency.

Adolescent Pregnancy as a Developmental Crisis. Adolescent pregnancy is a concealed problem in that there are two pregnancies for every one birth; there are three pregnancies for every one birth among girls 15 or younger. Adolescent pregnancy and parenthood is cause for concern due to the economic and social costs of parenthood to the adolescents, their children, and to society (Adams, Adams-Taylor, & Pittman, 1989).

Warren and Johnson (1989) found that both black and white pregnant adolescents suffered greater levels of depression before and after giving birth than did older mothers. Confronting her family with the fact that she is pregnant is a difficult and traumatic experience for an adolescent girl (Farber, 1991). According to Warren and Johnson (1989), pregnant adolescents perceived less love and affection from their own mothers than non-pregnant adolescents.

Hypotheses

The general hypothesis of this study is that due to the unique developmental tasks of each trimester of pregnancy, pregnant women will vary in the perceived value of prenatal education topics depending upon gestation. The perceived value of prenatal education topics are believed to be influenced by demographic variables such as socio-economic status, educational background, ethnicity, marital

status, and age. Finally, it is hypothesized that pregnant women who perceive their own prenatal health care professional as supportive will indicate a greater desire for acquiring additional prenatal education. Conceptual hypotheses are listed below.

Hypothesis I. Pregnant women will differ in their perceptions of the value of prenatal education topics by pregnancy groups.

Hypothesis II. Pregnant women who perceive the prenatal healthcare professional as supportive, will score higher on their desire to learn than those who do not.

Hypothesis III. Pregnant women will differ in their perceptions of the value of prenatal education topics according to selected demographic variables.

Hypothesis IV. Prenatal healthcare professionals will supply pertinent prenatal education information at the optimal time of relevance.

Hypothesis V. Pregnant adolescents will differ from pregnant adults in their perceptions of the value of prenatal education topics across all stages of pregnancy.

Definitions of Key Terms

The following definitions of terms are used for the purpose of this study:

Rewards: "Pleasures, satisfactions, and gratifications that a person enjoys" (Thibaut & Kelley, 1959, p. 12).

Costs: "Any status, relationship, interaction, or feeling disliked by an individual" (Thibaut & Kelley, p. 12).

Choice and Exchange: "Individuals make an infinite number of choices to reduce their costs and maximize their rewards for the most profits (or least losses)" (Nye, 1979, p. 3).

Motivation: "A strong desire to promote action and provide a definitive purpose" (Dewey, 1922, p. 120).

Teachable Moment: "A time of life characterized by unique sensitivity and dramatic propriety toward individual learning" (Havighurst, 1972, p. 83).

Developmental Stage of Pregnancy: "The interval in which a woman changes and develops over the 40 weeks of pregnancy. Developmental stages of pregnancy proceed in a specific direction from a known beginning to an anticipated endpoint of each developmental stage. Each stages of development carries with it certain tasks that must be accomplished in order for the woman, fetus, and family to survive" (Winton, 1995, p. 15).

Prenatal Education: "The provision of information that will contribute to safe, healthy, and productive pregnancies, deliveries, and family functioning" (MacLachlan & Merkel, 1990, p. 115).

Prenatal Care: "Care of the woman that begins in the first trimester of pregnancy through delivery and postpartum, and includes nine or more visits" (Higgins, Murray, & McWilliams, 1994, p. 26).

Pregnant Woman: The condition of carrying a developing embryo in the uterus that lasts 40 weeks. For the purposes of this study, a pregnant woman is between the ages of 12 and 40 with an uncomplicated pregnancy.

Primigravida: "A woman pregnant for the first time" (Urdang & Swallow, 1983, p. 887).

Multigravida: "A woman who has been pregnant two or more times" (Thomas, 1993, p. 703).

Parity: "The number of live-born children that a woman has delivered" (Urdang & Swallow, 1983, p. 808).

Gestation: "Length of pregnancy from conception to birth; 40 weeks" (Urdang & Swallow, 1983, p. 462).

Quickening: "First movement of the fetus felt in utero; occurs between 18-20 weeks" (Thomas, 1993, p. 1656).

Trimester: "One of the three periods of approximately three months into which pregnancy is divided. The first trimester includes the first day of the last menstrual period to the end of 12 weeks. The second trimester extends from 13 to 28 weeks, and the third trimester lasts from 29 to 40 weeks" (Urdang & Swallow, 1983, p. 1099).

Value: "The perceived worth of something that facilitates positive outcomes and avoids negative outcomes and is determined by a combination of need, probability, and uncertainty"(Emerson, 1983, p. 19).

Adolescent: "A female between the ages of 11 and 18 years" (Urdang & Swallow, 1983, p. 27).

Adult: A female between the ages of 19 and 40 years (Urdang & Swallow, 1983, p. 29).

Prenatal Health Care Professional: A physician or nurse who provides a cost-effective means of improving neonatal health care while providing expectant women with health and pregnancy information (Merkatz, Thompson, Mullen, & Goldenberg, 1990; Andersen, Freda, Damus, Brustman, & Merkatz, 1989).

Assumptions

The following assumptions were made for the purposes of this study:

1. Participants read, write, and comprehend English.
2. Participants are willing to share the requested information with the researcher.
3. A three to six month time frame will be adequate to collect the needed data.
4. Prenatal care specialists provide similar information to all pregnant clients.

Organization of the Study

This chapter has described the basic concepts of adult and adolescent pregnancy as developmental crises, as well as prenatal care and education from the perspectives of both professionals and clients. In addition, it reviewed the social exchange theory which serves as a theoretical framework for empirical study.

The following chapter consists of a literature review describing the developmental tasks of pregnancy and the developmental tasks of adolescence, including pertinent information regarding standard prenatal care and education practices. A detailed description of the social exchange theory is presented in order to provide a strong theoretical foundation for the research.

Chapter Three presents the specific research methodology, procedures, and the composition of the study sample. Instruments selected and adapted for the purposes of this study are also described.

Chapter Four discusses the analysis of data collected from the research. An evaluation of the findings for each hypothesis is presented.

Chapter Five summarizes the study, its application to prenatal health care and education and family science. Conclusions and recommendations for further study are described in this chapter.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Prenatal care and education are effective methods of improving pregnancy outcome. Insufficient prenatal care is associated with complications such as low birthweight, premature birth, and congenital anomalies. Pregnant minority women, who are typically young and uneducated, are least likely to seek prenatal care and are therefore at greater risk for complications during pregnancy and birth (Singh, Torres, & Forrest, 1985; Ingram, Makuc, & Kleiman, 1986). Birth complications often result in lengthy hospitalization followed by long-term rehabilitation at great cost to society in terms of social and economic support. Early and continuous access to prenatal care and education is a cost-effective means of improving neonatal health while providing expectant women with health and pregnancy information (Merkatz, Thompson, Mullen, & Goldenberg, 1990; Andersen, Freda, Damus, Brustman, & Merkatz, 1989).

Health care professionals have impacted the childbirth process for some time through the use of prenatal education. Enkin (1990) asserts that women who seek prenatal information are motivated by their desire for accurate information. Many women actively participate with health care professionals in order to make personal health decisions (Oakley & Houd, 1990). Mercer (1986) noted that pregnant adolescents had less tendency to discuss any aspect of pregnancy; this was attributed to the possibility that the adolescent was less sensitive to emotional and physical changes of pregnancy. In any case, Mercer (1986) urged health care professionals to go beyond providing "routine care" due to the move from concrete to abstract thinking that occurs during adolescence. In order to achieve prenatal educational objectives, caregivers must assess the learning needs of each individual client and then, collaborate with

the client to ensure that she receives information effectively (Enkin, 1994).

Client Education Process

Providing information to pregnant clients can be viewed as a monumental task, especially in an era characterized by a knowledge explosion with rapid obsolescence of facts. Abrupt, novel changes such as those of pregnancy, often require more time for the client to process information in order to make rational decisions (Thibodeau & Hawkins, 1982). Individuals have a limited capacity to absorb content; overloading the system usually results in a breakdown in performance Education, according to Thibodeau and Hawkins (1982) is the "art and science of facilitating the learning process and thereby helping each person achieve maximum learning potential" (p. 4).

Restatement of the Problem

The purpose of prenatal education according to MacLachlan and Merkel (1990), is to "provide information that will contribute to safe, healthy, and productive pregnancies, deliveries, and family functioning" (p. 115). Prenatal education not only diminishes increasing health care costs but facilitates health promotion. Davis and Reis (1988) assert that the primary objective of prenatal education is to persuade women to embrace health maintenance during pregnancy as a realistic and essential objective. Duvall (1967) contends that pregnant women belonging to the middle and upper classes have a greater tendency to seek prenatal education, prenatal care, and follow the advice of prenatal health care professionals than pregnant women from the lower class. In addition, women with higher intelligence and social status are typically more deliberate in planning pregnancies, have a better diet, and are more inclined to breastfeed than lower class mothers.

Teaching-Learning Milieu

Cooperation and effective communication between the pregnant woman and every member of the health care team is essential to ensure a supportive milieu that reduces anxiety, provides factual information, and focuses on current concerns (Hassid, 1978). Severson-De Muth (1989) propounds that

educational content must be adapted to each individual client according to her particular circumstances; therefore, teaching goals are directed toward client needs at that specific time. According to Dewey (1916), educators always run the risk of overlooking the sequential development of those they teach. By including the learner as a partner in the teaching-learning milieu more readily ensures success in achieving the educational task (Dewey, 1916). Timing is an acuminate factor for consideration; allowing the client to select the time for teaching has been found to be an effective method conducive to learning (Smith, 1987). After quickening, the woman becomes exceptionally receptive to learning, creating the ideal period in which to provide prenatal education and parenting skills (Hassid, 1978). When client education is a priority for both physicians and nurses, respect and appreciation for high quality client education evolves (Severson-De Muth, 1989).

Educational Interest

In order to effectuate learning, the teacher must endeavor to engage the learner's active participation in acquiring the new concepts and skills (Dewey, 1913). If the learner's interest is secured, Dewey (1913) guarantees that "the pupil will direct his energies toward mastering them" (p. 1). It is psychologically impractical to request any learning activity on the part of an individual without the presence of interest in the subject. Legitimate interest usually results in successful mastery that ultimately brings pleasure to the individual learner. Interest in a topic is dynamic and personal, in that a learner must be actively concerned with the subject at hand. Interest is based on the individual's present experience, powers, and needs; therefore, any new information is more relevant when presented in such a way that its value is linked to what already has significance for the individual. Dewey (1913) concludes that true interest is a sign that "some material, object, mode of skill is appreciated on the basis of what it actually does in carrying to fulfillment some mode of action with which a person has identified himself" (p. 43).

A motive may be considered a strong desire; in fact, a desire, when chosen, is a motive (Dewey, 1891). The desire becomes strong when the individual regards the desire as one of value and interest.

Desire then becomes a motive to promote action and provides a definitive purpose. Dewey (1922) defined a motive as "that element in the total complex of a man's activity which, if it can be sufficiently stimulated, will result in an act having specified consequences" (p. 120). A motive does not exist prior to an act; a judgment is made as a result of that act.

Learners advance in a given domain of learning only as far as needed in order to achieve a goal; increased motivation enhances learning (Dewey, 1922). Internal motivation exists within an individual and is extremely effective in the promotion of learning and retention. External motivation emanates from external sources, with curiosity serving as a dynamic source of motivation.

Social Exchange Theoretical Rationale

Exchange theory is a framework applied to social relationships that is focused on the patterns, dynamics, perceptions, and development of relationships. Satisfaction, reciprocity, fairness, commitment, trust, and dependence serve as mediators of expanding relationships (Kelley & Thibaut, 1978). Patterns of equity, control, power, and decision-making are expressed within the exchange theory framework (Sabatelli & Shehan, 1993). The behavior of individuals in social relationships evolves as a result of conformity to requirements by the social system and is regulated by the norms and mandates of society. The response of individuals to a particular situation is influenced by their past experiences in social contexts (Jones, 1983). Turner (1987) asserts that human beings, while not consistently rational, will deliberate on the contrivance of costs and benefits in social transactions, which results in an assessment of available alternatives. Individuals correspondingly pursue information from others in order to enhance personal experiences (Sabatelli & Shehan, 1993).

Value Theory of Social Exchange

Emerson (1983) wrote that valued outcomes serve as reinforcing stimuli and states that "valued things have relative but not absolute value. The worth of a thing is expressed only in terms of another thing given up to get it" (p. 13). Individuals apportion more energy to those outcomes that are personally

valuable. Any task considered to be meaningful to an individual provides the impetus needed to become actively involved in the accomplishment of that task (Dewey, 1916). The value of a particular task is determined by the magnitude of the subsequent consequences derived from its performance; hence, the value is in it's ability to procure positive outcomes and avoid negative outcomes (Seta & Seta, 1990). Enlisting the individual's participation in an activity facilitates the desired outcome. The mind appears to have the capacity to respond to present stimuli based on the prospect of future consequences while contemplating control of the set of expected consequences (Dewey, 1916). The determinants of value are vague; however, Emerson (1983) specifies need, probability, and uncertainty as components of value. Exchange theory endeavors to describe the emergence, endurance, and disintegration of social relationships; therefore, exchange theory must have a component that allows consideration of the interests of the other exchange partner (Cook, 1990).

The greater the mutual exchange of rewards among people, the greater the emergence of reciprocal obligations and subsequent exchanges. As obligations and rewards are recompensed, mutual trust evolves, facilitating additional exchange. The development of trust and commitment in a relationship is facilitated by the adherence to standards of reciprocity and fairness. Trust is the individual's conviction that a partner will not exploit or obtain inequitable advantage of the relationship. The development of trust is attached to the experience of reciprocity and equity (Sabatelli & Shehan, 1993). Violation of reciprocity results in distrust and negative ratification (Blau, 1964). Power contrasts with authority in that authority is the ability of one person to legitimately extract compliance from another.

While the calculation of potential rewards versus costs is simplistic, it is nevertheless a principle motivational force behind human behavior (Turner, 1987). Information used when making decisions about behavior in a social relationship is derived from the individual's analysis of the various available options (costs and rewards). Each member of the dyad enters the interaction with a repertoire of responses that might impact the outcomes available to each individual. The greater the extent to which outcomes exceed expectations, the greater the attraction to the exchange process. Childbirth has the potential to influence the transactional levels of interdependence, subsequently altering patterns and

dynamics of interaction (Sabatelli & Shehan, 1993). A fundamental element of the client education process involves the development of a positive and rewarding relationship with the client. Although the content in client education may be accurate, if the relationship component of the interaction is insensitive or disrespectful or information is inappropriate for the developmental level, client education is not effectual (Severson-De Muth, 1989).

Role of the Health Care Professional

The goal of the health care professional is to intervene and assist the client to achieve maximum growth potential inherent in the developmental crisis; this can be accomplished through primary prevention (Caplan, 1959). The purpose of primary prevention is to make assessments and subsequent interventions individualized, age-specific, and concrete; this is possible because risks can be identified at each point on the age continuum. Thus, the goals of primary prevention are to promote optimal health and prevent disease; it involves counteracting pernicious circumstances before mental or physical disorder occurs.

Prenatal health care professionals and educators can facilitate the pregnant woman's movement through the developmental process of pregnancy. By assessing psychological task achievement or difficulty with this process, the health care professional can focus and direct the woman toward optimal task fulfillment and reinforce successful task achievement (Tanner, 1969). Preventative measures may be intrinsic in such assistance in order to avoid maladaptive responses to pregnancy, leading to a healthy mental and emotional state for the woman and her family.

The implied security of new scientific technology carries with it the assumption that "scientific management of pregnancy and childbirth would remove all risk and guarantee a perfect baby" (Enkin, 1994, p. 133); an expectation Enkin believes to be unreasonably high. The malpractice crisis has resulted in the practice of "defensive medicine, a tendency to regard patients as adversaries, and often a withdrawal from providing certain types of care" (Enkin, 1994, p. 133). The litigious nature of American society has produced an aftermath of excessive medical intervention that can be counterproductive.

Prenatal health care professionals as well as mother and fetus, are safeguarded when practice is based on indications of efficacy, and on the mother's apprised choice of alternatives (Enkin, 1994).

Maternity care is recognized by prenatal health care professionals as "family-centered;" that is, the family is the primary source of support and care for the pregnant woman (Hassid, 1978, p. 12). The role of prenatal health care professionals is to supply education and medical care for the pregnant woman. The health care professional intervenes before a problem is evident (Thibodeau & Hawkins, 1982). In summary, the role of the health care professional is to facilitate the growth of clients that results from developmental crises in order to maintain the highest quality of health and life possible.

Primary Care. Primary care suggests a collaborative approach to the delivery of health care. The primary care professional is not all things to all people but is the coordinator of care. The primary care professional offers continuity of care and includes communication among all professionals. A team approach to health care is the optimal paradigm for providing quality prenatal care to all clients because it eliminates some of the failings of the "pass-the buck approach" (Thibodeau & Hawkins, 1982, p. 41).

Protocols. The issue of accountability highlights the need for protocols in the health care system. A protocol is defined by Thibodeau and Hawkins (1982) as "any standardized format for any or all steps of process, and it can range from a formal list to an extensive narrative" (p. 43). The first stage in creating a protocol is the identification of dangerous conditions seen in practice. Protocols are often denounced for being too inflexible, for limiting creativity, and for obstructing the individualization of care. In contrast, protocols provide a framework for standardization of care that facilitate continuity and coordination of care, the outcome being, improved client care and professional growth (Thibodeau & Hawkins, 1982). If both nurses and physicians collaborate to develop protocols, standards of practice may be enhanced. Protocols can delineate areas of competence and responsibility for the various health care professionals in settings where a diverse health team is present; the result could deter haphazard practices by assuring high-quality care.

Developmental Model

Developmental models incorporate life-span physiological, cognitive, and psychosocial theories to describe individuals, environment, and health (Thibodeau & Hawkins, 1982). Development is a long process that suggests linear growth or change involving the process of maturation. A stage is an interval of time on a developmental continuum that is qualitatively different from antecedent or subsequent intervals; therefore, each individual is in a continual state of growth while progressing through the various developmental stages. Developmental models are based on the assumption that the process of development facilitates the achievement of the individual's maximum potential. Developmental tasks originate from a combination of the process of physical maturation, cultural expectations, and personal values and aspirations acting together upon the individual (Havighurst, 1972).

Developmental Tasks

When the biosocial factors are ripe and the individual is ready to achieve a certain task, the "teachable moment has come; efforts at teaching which would have been largely wasted if they had come earlier, give gratifying results when they come at the *teachable moment*, when the task should be learned" (Havighurst, 1972, p. 7). It is at these "sensitive periods" that individuals are able to learn quickly through certain types of experience. A common trait of a developmental task is the existence of teachable moments when the individual has the heightened capacity to learn. Success or failure in developmental tasks at a specific age leads to success or failure in the tasks of a later age. While some developmental tasks are specifically defined by particular cultures in society, certain developmental tasks are universal from one culture to another (Havighurst, 1972). Hence, the interpretation of developmental tasks will vary among cultures to some extent. Developmental tasks prescribed by American society are predominantly based on middle class values with some attempt at including variations for lower and upper class Americans.

Developmental Tasks of Adolescence

The adolescent struggles toward discovering a sense of identity versus the hazard of identity diffusion. The overall family developmental task of adolescence is to loosen family ties in order to allow increased responsibility and freedom as a means of preparing the adolescent for adulthood (Duvall, 1967). Adolescence has often been described as a period of strain in many families because adolescents strive to establish their own identities and emancipation from parents. Duvall (1967) lists eight developmental tasks that must be accomplished by adolescents in order to successfully enter adulthood.

1. Acceptance of a changing body and using it effectively
2. Achievement of a satisfactory, socially accepted masculine or feminine role
3. Membership in a peer group with more mature relationships
4. Achievement of emotional independence of parents and other adults
5. Selection and preparation for occupational and economical independence
6. Preparation for marriage and family life
7. Development of intellectual and social skills needed for civic competence
8. Development of a life philosophy (pp. 325-327).

Families with adolescents confront major problems in the areas of delinquency, irresponsible conduct, confusion about love, sex, and adolescent pregnancy. As adolescents attempt to gain autonomy, parents are often faced with imperative challenges; both overdependency and overrebelliousness expand the dilemma for both generations. The developmental tasks for the family contain those values that continue to possess meaning while exploring broader orientations required by new levels of development (Duvall, 1967). Many of the developmental tasks of adolescence are in harmony with the desires and needs of the parents.

As the adolescent strives for more independence, the parent usually delights in the child's attainment of adult-like function. Adolescents tend to make errors in judgment and exhibit behavior that appears arrogant; parents are inclined to view this behavior as a threat to their status and dignity as parents. Adolescents resent any resistance from their parents but if they sense a genuine interest with

evidence of acceptance by the parents, adolescents usually accept their advice. Consequently, both parents and adolescents grow in their ability to accept others. When mutual respect for each other is the prevailing pattern of interaction, the adolescent is inclined to follow that pattern which in turn, increases the parents' confidence in their child (Duvall, 1967).

Psychosocial Tasks. Early adolescence is a difficult period of transition due to the two major psychosocial tasks that challenge early adolescents: 1) the transition from elementary to junior high school and; 2) the shift in role status from child to adult (Hamburg, 1986, p. 125). The biological changes of puberty are superimposed upon these psychosocial tasks, resulting in a time of major stress. Culture defines early adolescence according to the social age of entry into junior high or middle school. The drastic change in school format coupled with a dramatic variation in pubertal development, reveals an abrupt and demanding transition in the life of the adolescent. The result is a high rate of distress and general confusion about school, new friendships, and academic success or failure. Social growth is dependent upon interactions with members of both sexes and the activities that accompany dating, courtship, and emotional involvement with a member of the opposite sex. During the second decade of life, the peer group is important because contact with one's friends allow the adolescent to develop decision-making skills.

Cognitive Development. Cognitive capacity contributes to the early adolescent's response to information and persuasion in making decisions. In early adolescence, reasoning remains mostly in the stage of concrete operations. Even when formal operations begin to emerge, it may not be evident when faced with critical decisions. Janis and Mann (1977) distinguished between "hot" and "cold" cognitions in that a hot cognition is one that is extraordinarily charged with emotion and is entangled in elements of perceived threat or in circumstances when esteemed goals or benefits are in danger. Janis and Mann (1977) found that adults, irrespective of intelligence or level of formal reasoning, manifested greatly impaired information processing and decision-making skills when dealing with hot cognitions. Early adolescents not only function at immature cognitive levels, but encounter numerous hot cognitions.

Early adolescents tend to be deficient in the ability to formulate valid generalizations and maintain objectivity (Elkind, 1976). In addition, young adolescents are at the height of egocentrism with

the notion of invulnerability that persuades the adolescent to feel immune to a known risk. This feeling of invulnerability coupled with a lack of cognizance of probability laws often leads to unprotected sexual encounters. Disbelief and denial of pregnancy frequently results in delayed obstetric intervention.

Self-Esteem and Adoption of Adolescent Role. Self-esteem typically drops upon entry into junior high or middle school. Rosenberg (1965) discovered that low self-esteem was correlated with characteristic attitudes and responses. The characteristics linked with low self-esteem reflect attitudes and behaviors that abate coping potentiality, intensify stress, and emphasize any pre-existing inclination to entreat maladaptive solutions. Early adolescents are propelled into their new role status with only vague notions about the appropriate attitudes, behaviors, and prohibitions that accompany adolescence. Unfortunately, parents and other adults are often equally uncertain about the appropriate attitudes, behaviors, and prohibitions that accompany their newly acquired roles. Wise parents guide their children with a loose rein, knowing they will not roam too far from their parents if they are not driven away. Adolescents are dependent upon parents and will seek their advice and companionship when communication patterns are stable. Middle and upper class families tend to maintain more democratic patterns of interaction and have fewer problems than lower class families (Duvall, 1967).

A preponderance of the literature on adolescence evolved from descriptions of late adolescence which in turn, has been applied generically to adolescents of all ages. Subsequently, in an attempt to define their new roles, parents of adolescents find emphasis on the adolescent's need for independence and autonomy and therefore, withdraw parental participation and support. This may ultimately create greater stress for adolescents, thrusting them toward the peer group as a model and source of support. In early adolescence, the peer group lacks life experience and is limited in providing the appropriate resources. Instead of emphasizing independence, parents of young adolescents should be encouraged to focus on parental stability and guidance at the time of major biological, psychological, social, and educational transition (Hamburg, 1986).

Developmental Tasks of Early Adulthood

Havighurst (1972) describes the period of early adulthood as the "period of life fullest of teachable moments and the emptiest of efforts to teach" (p. 83). It is a time of life characterized by unique sensitivity and dramatic propriety toward individual learning. Early adulthood is generally defined as the period of time between 18 and 30, encompassing marriage, the first pregnancy, the first full-time employment, the first illnesses of children, the first purchase of a home, and sending children to school for the first time. The number of new encounters experienced in young adulthood provide motivation to learn (Havighurst, 1972). Unfortunately, the quantity of instructional endeavor invested by society is less during this time of life than during any other age except in the elderly population.

Family Developmental Tasks

With the arrival of children, the family must undergo a major reorganization in function and structure which often results in a state of crisis, also known as a developmental crisis (Sherwen, 1987). Duvall (1967) saw the family itself as a basic unit of development that grows and changes with its own set of developmental tasks. Family developmental tasks are viewed as the growth responsibilities a family must accomplish at a particular stage of development 1) to satisfy its biological requirements, 2) to meet cultural imperatives, and 3) to satisfy its own aspirations and values (Duvall, 1967). The first pregnancy includes a focus on the crucial developmental tasks of expectant parents in what Erikson terms "generativity", that is, concentration on the next generation (Erikson, 1980). Although pregnancy is a brief time period, it is characterized by substantial developmental tasks and responsibilities. Family success in mastering developmental tasks leads to the successful mastery of subsequent developmental tasks; failure, however, leads to difficulty in the mastery of future developmental tasks resulting in disapproval from society (Duvall, 1967).

The necessity for change is frequently seen as a developmental crisis for the family who must master the new tasks in order to resolve the crisis, restore homeostasis, and prepare for subsequent stages of development. Reorganizing relationships with relatives is an important developmental task of the

expectant phase for it contributes to a sense of harmony and acceptance on the part of the pregnant woman and her partner. Duvall (1967) identified eight stages of the family life cycle, with the expectant phase described as the interval from conception to birth. The developmental tasks of this phase are imperative and relentless due to the physical reality of gestation and societal expectations of parenthood. During this period, the parents make the arduous transition to parenthood which includes the following tasks:

1. Arranging space for a child.
2. Financing childbearing and childrearing.
3. Assuming mutual responsibility for child care and nurturing.
4. Facilitating role learning of family members; assuming maternal and paternal roles.
5. Adjusting to changed communication patterns in the family to accommodate a newborn and young child.
6. Planning for subsequent children.
7. Realigning intergenerational patterns; establishment of grandparent-grandchild relationships.
8. Maintaining family members' motivation and morale.
9. Establishing family rituals and routines (Duvall, 1967, p. 199).

Developmental Crisis

Certain developmental events, such as school entry, marriage, and retirement, are universal for most individuals and are therefore, predictable. These predictable events are termed developmental crises because they have the potential for disrupting an individual's equilibrium which may result in a true crisis (Thibodeau & Hawkins, 1982). The term "crisis" has both positive and negative properties. Parad and Caplan (1961) defined crisis as "the impact of any event that challenges the assumed state and forces the individual to change his view of, or readapt to, the world, to himself, or both" (p. 56).

The individual prepares to deal with the problem when faced with a disruption of the "normal" routine. If the individual's past coping skills are sufficient, that person successfully deals with the

problem and evolves to a higher state of equilibrium (Parad & Caplan, 1965). The successful resolution of a crisis can fortify coping strategies and establish a higher level of performance than that which existed preceding the crisis. Developmental crises and stages are considered to be a normal component of the life cycle through which every person must pass. During these periods such as adolescence, pregnancy, and parenthood, certain tasks must be confronted and mastered in order to successfully progress through the stage and move to the next (Thibodeau & Hawkins, 1982). A developmental crisis usually results in a heightened desire on the part of the individual, to seek assistance from others; consequently, the person is more receptive to influence by others than during stable time periods.

Childbearing as a Developmental Crisis

Although childbearing is a biological as well as a psychological process, the biological component functions naturally. From a psychological standpoint, both the man and the woman are faced with the task of becoming a father and a mother respectively. Koniak-Griffin (1993) asserts that education and support are critically important with pregnant couples who are at this developmental stage of life; furthermore, it is essential for the well-being of the individual, the couple, the baby, and the family. The first developmental task facing the pregnant woman is acceptance of the pregnancy (Havighurst, 1972). If she is afraid or distressed by the pregnancy, the task will be difficult for her; however, if she regards pregnancy with satisfaction as the realization of her female role, the task will be comparatively easy. Havighurst (1972) asserts that having confidence in the (prenatal) doctor is of vital importance to the pregnant woman and her partner. Social class differences extend to the amount of medical attention received during pregnancy. American culture has become a task involving the young couple with the assistance of doctors, hospitals, and educational institutions.

Childbearing, as a significant component of the family life cycle, is a time of developmental crisis for the pregnant woman and her family (Rubin, 1970). Pregnancy is frequently regarded as a biologically determined, psychological crisis that forces the pregnant woman and her family into a state of disequilibrium (Caplan, 1959). From a psychological standpoint, Caplan (1959) states that "the whole

family is pregnant and the future mental health of the woman and of the family may be determined by how the balance swings during this period of disequilibrium" (p. 46).

Parenthood as a Crisis

Preparation for parenthood begins in childhood. When parents are demonstrative of their love for their children, those children are positively influenced in their own attitudes toward parenting (Duvall, 1967). LeMasters (1969) postulated that because the family is a small social system, the addition of a new member forces a dramatic reorganization of the system leading to a developmental crisis. Although this crisis is most intense with the birth of the first child, all subsequent births require a reorganization of the family system and consequently, produce a variation of the first developmental crisis of childbearing.

Malnory (1996) asserts that every pregnancy entails a paradigm shift for the entire family system. Lederman (1984) states that if the developmental tasks are achieved, the parent-child relationship is enriched and allowed to grow. However, Lederman (1984) disagreed with the notion of pregnancy as a crisis and views "the normal course of childbearing as a test which comes as part of growth, and as a challenge rather than a crisis" (p. 13). A developmental crisis is not intrinsically positive or negative, but it is a period of enormous physical, emotional, psychological, and social change during which time, certain tasks must be faced and mastered (Sherwen, 1987). Successful mastery of developmental tasks results in a higher level of family functioning. Malnory (1996) further states that prenatal health care professionals must "integrate a physiologic and psychologic focus into their care model if prenatal care is to be effective in achieving positive outcomes " (p. 526).

Developmental Stages of Pregnancy

Pregnancy has long been acknowledged as a time of dramatic physiologic changes but only in the second half of the twentieth century has attention been directed toward the emotional and psychological changes of pregnancy. According to Duvall (1967), adjusting to the pregnancy is the major family goal of the expectant phase of family development. There is no single prototype of response to pregnancy, however, a number of critical variables within the family structure will change during

pregnancy, creating a developmental crisis for the family. Tanner (1969) was one of the early pioneers to regard pregnancy as a developmental process with specific psychological tasks to be accomplished in order to facilitate an optimal outcome with integration into the life process. Developmental processes are those in which "physiologic changes and their psychological counterparts (which are stimulated by these changes) are integrated to enable the individual to progress from one phase of life to another. They offer opportunities for additional psychic growth and maturity" (Tanner, 1969, p. 292). These psychological tasks must be successfully obtained for the person to achieve beneficial emotional adaptation and elude difficulty with subsequent tasks (Hurlock, 1959).

Pregnancy results in emotional changes that are the result of somatopsychic and psychogenic causes. Somatopsychic changes are produced as a result of hormonal and metabolic variations such as the increased secretion of progesterone during pregnancy. Progesterone has been associated with increased narcissism, introversion, and passivity observed during pregnancy. Psychogenic changes are frequently linked to the sexual aspects of pregnancy. As pregnancy continues, the woman tends to forget the sexual aspect and focuses her attention on motherhood. Psychogenic changes may also be related to the development of her role as "mother." A woman has role models, mainly her own mother as she observed her when she was a child (Caplan, 1959).

One cannot consider pregnancy as one phenomenon and parenthood as another; one is simply a preparation for the other (Caplan, 1959). This preparation begins in early childhood when a child imitates the parent. However, the mother-child relationship begins during pregnancy. In the first trimester, the relationship begins with a set of attitudes toward the pregnancy itself. In the second trimester, there is a set of developing attitudes and relationships with the fetus. Finally, in the third trimester is the set of attitudes and relationships with the baby that is soon to be born (Caplan, 1959).

Caplan (1959) noted that women become increasingly introverted and passive toward the end of the first trimester. This behavior peaks between 28 and 32 weeks gestation. The pregnant woman becomes a person who desires to receive rather than give; she is preoccupied with herself. According to Caplan (1959), unless the pregnant woman receives adequate love and affection during this period, she will be unable to provide love and affection for her child. Through the use of anticipatory guidance for

the pregnant woman's support person and family, health care professionals can satisfy the woman's increased need for love and attention (Caplan, 1959).

Pregnancy is a period of intense endocrine, somatic, and psychological changes. These changes cause a state of disequilibrium that results in a significant turning point in a woman's life. Therefore, Tanner (1969) describes pregnancy as a developmental process. Physical changes are quite apparent; however, the accompanying psychological phenomena include adaptive tasks that must be assimilated to resolve the disequilibrium induced by pregnancy. These tasks, according to Tanner (1969) constitute the three psychological tasks of pregnancy. According to Tanner (1969), behavioral evidence of the woman's involvement with specific psychological tasks often reveal concerns about the impact of physical changes on the pregnant woman. These concerns include both physical and emotional changes, feelings about the changes, and attitudes toward the fetus.

First Trimester

The first psychological task of pregnancy is comprised of the incorporation and integration of the fetus as an extensive part of the woman. Prior to impregnation, the woman is an intact individual having an intense relationship with her sexual partner; following impregnation, she has been "invaded by a foreign object, the fetus" (Tanner, 1969, p. 293). Caplan (1959) states that 80% of his clients reject pregnancy at the beginning of the pregnancy and described reactions to pregnancy such as grief, anger, shame, and some guilt. The reasons for these reactions are varied and associated with economic hardship, thwarted ambitions, intrapersonal difficulties, and career conflicts; however, by the end of the first trimester, most women have accepted the pregnancy. Caplan (1959) asserts that because the women have no real thoughts about the baby, they are rejecting the pregnancy, not the baby. The woman must accept and integrate the fetus as an element of her body. Involvement with the developmental task of the first trimester is reflected in the woman's concern about her physical and emotional changes. Acceptance of the fetus is accomplished as the profound physiologic and anatomic changes seen in the first trimester of pregnancy, lead to an increased concentration on the self (Tanner, 1969).

Second Trimester

The process of integration is interrupted by quickening, signifying the presence of a new being within the self, thereby giving rise to the second psychological task of pregnancy. The fetus must now be perceived by the woman as a separate object as opposed to an extension of herself (Tanner, 1969). After quickening, the baby becomes real and the majority of all pregnant women accept the pregnancy by this time (Caplan, 1959). Perception of the fetus as an entity separate from herself, is reflected in attitudes toward and perceptions of the baby. Attitudes in regard to labor may be indicative of her readiness to begin anatomical separation from the baby. As the woman becomes gradually aware of the baby's needs as separate from her own, imagines the baby with its own characteristics, and plans for its care, she accomplishes the second psychological task of pregnancy. In acknowledging the baby as a separate entity, the woman prepares for the anatomic separation that occurs with delivery, as well as developing readiness for the parental role (Tanner, 1969).

Third Trimester

The third task of pregnancy involves the establishment of the caretaking relationship or parental role with the baby. Indications of readiness to accept the parental role are reflected in the pregnant woman's responses to infant care. This often does not occur until the postpartum period due to what Tanner (1969) describes as sociocultural factors that have "deprived women of traditional ways to cope with their pregnancy, and disequilibrium that persists after the birth has occurred" (p. 293). Caplan (1959) observed that women between 36 and 40 weeks gestation become depressed with negative attitudes but notes that these negative attitudes are directed toward the pregnancy, not the baby. Women who have successfully mastered the first two psychological tasks of pregnancy rarely encounter difficulty in the successful completion of the third task and usually develop a healthy mother-child relationship. A woman who does not successfully complete the first two psychological tasks of pregnancy will not likely be ready to establish a caretaking relationship with her newborn (Tanner, 1969).

Summary of Developmental Tasks of Pregnancy

Tanner (1969) was one of the first to describe developmental tasks of pregnancy; it is now a widely accepted fact that psychological tasks of pregnancy not only exist but include demonstrative behavioral manifestations associated with each trimester of pregnancy. The task of incorporation and integration of the fetus occurs during the first trimester but is more clearly evident in later stages of pregnancy. The task of perception of the fetus as a separate entity begins in the second trimester and is well established by the beginning of the third trimester. Willingness to accept the parental role begins by late in the second trimester and peaks in the third trimester, however, this task may extend into the postpartum period.

The description of developmental tasks, along with the behaviors that are specific for each trimester, assist the prenatal health care professional and educator to assess the involvement of the pregnant woman with expected psychological tasks. Utilization of this information can serve as a knowledge base for professionals to enhance interviewing, assessment, and communication skills in order to contribute to a positive and meaningful pregnancy that will ultimately result in a successful adaptation for the woman and her family (Tanner, 1969).

Adolescent Sexuality

Adolescence is often regarded as a singular stage of development that includes the interval between the ages of 11 and 19. The majority of the literature concerning sexual knowledge and its relation to adolescent sexuality is comprised of those adolescents 16 or older; however, the findings are applied to adolescents as a whole. Sexual knowledge gradually increases with age (Hamburg, 1986). Duvall (1967) discovered that most adolescents encounter difficulty confiding in their parents, especially regarding sexual topics. Early adolescents often acquire incorrect and erratic sexual information usually from peers and the media.

Health care professionals are considered by adolescents as good sources of information but few adolescents utilize this resource (Hamburg, 1986). Furthermore, the adolescent is less likely to seek assistance from the prenatal health care professional (Bergman, 1988). According to Bergman's study,

pregnant adolescents reported that they would seldom consider seeking guidance from the prenatal health care professional. Additionally, the study found that private physicians rarely referred pregnant adolescents to other sources for prenatal education.

Contraception is often either incorrectly or infrequently used especially by young adolescents. One possible explanation for inadequate use of contraceptives is that some adolescents embrace a personal cost-reward perspective in which the costs of using contraception is weighed against the benefits of physical intimacy and avoidance of pregnancy. Lindemann (1974) described a model composed of three stages of contraceptive use that is suitable for a developmental analysis of adolescent sexuality. The first stage is distinguished by unpredictability of intercourse accompanied by a belief in spontaneity and little awareness of the possibility of pregnancy. The second stage is characterized by discussions about contraception among peers and experimentation with haphazard use of nonprescription contraceptives; a major difficulty is misinformation. The third stage involves a willingness to obtain a prescribed contraceptive. Intercourse occurs more frequently in this stage, usually within a steady relationship. These stages usually progress in sequence but regression is possible as well.

Psychosocial Development

In 1974, Miller described three stages of adolescent psychosocial development. Each stage lasts approximately three years and is categorized in three stages: early, middle, and late adolescence. Early adolescence includes ages 11 to 15 and is characterized by the adolescent's desire to exert control and exhibit defiance over parents and authority figures. In addition, the early adolescent is intensely preoccupied with appearance (Drake, 1996).

The middle stage of adolescence incorporates the ages of 14 to 18 and is focused on self-identification and self-realization. Middle adolescents can develop greater autonomy and identity when significant adults encourage the exploration of issues, values, and feelings about relationships and sexual desires. Finally, late adolescence, ages 17 to 20, is focused upon coping skills as the adolescent learns to cope with the complexities of the adult world. The attainment of these developmental tasks become more difficult when the adolescent becomes pregnant.

Introduction to Adolescent Pregnancy

Adolescent pregnancy is a concealed problem in that there are two pregnancies for every one birth; there are three pregnancies for every one birth among girls 15 or younger. Adolescent pregnancy and parenthood is cause for concern due to the economic and social costs of parenthood to the adolescents, their children, and to society (Adams, Adams-Taylor, & Pittman, 1989). Pregnant adolescents are often encouraged to marry, however, these marriages tend to be vulnerable to annulment, separation, and divorce. Premature marriage truncates the full development of the adolescent's autonomy, education, and financial security (Duvall, 1967).

Pregnancy is a challenge to any female; to an adolescent, the challenge often becomes a crisis because it adds complexity to an already difficult period of physical and emotional changes (Turner, Grindstaff, & Phillips, 1990). American women tend to delay pregnancy until later in adulthood after a career has been established and life is stable. In contrast, adolescents have a greater tendency to incur pregnancy at an earlier age than in years past (Hamburg, 1986). This discrepancy in timing often yields stressful circumstances for the young mother, her baby, her family, and society at large. Because the girl has little life experience or social support, she selects options in the process of resolving new developmental tasks that result in harmful consequences. For a few fortuitous girls, the challenge is met along with the accomplishment of critical growth in maturity and proficiency.

Prenatal Health Care Professionals and Pregnant Adolescents

Effectual communication with pregnant adolescents requires recognition of their cognitive and psychosocial development (Drake, 1996). Individuals progress through the developmental tasks of adolescence and pregnancy at different rates making it imperative for prenatal health care professionals to consider their developmental stages as well as maturity levels before intervening. Girls who have reached the stage of formal operations have the ability to conceptualize prenatal education as it applies to them in order to plan for the future. Moreover, these girls have achieved the cognitive ability to recognize the impact of their behavior on fetal development and outcome (Drake, 1996). When assessing

developmental levels of the pregnant adolescent, prenatal health care professionals must evaluate the educational level, future orientation, her type of thinking, and her decision-making ability (Drake, 1996).

Young adolescents exhibit concrete thinking, are typically oriented to the present, and self-centered; they are usually dependent upon the family to make decisions about health care. Therefore, the support of significant family members should be included in prenatal teaching. The middle adolescent begins to develop abstract thinking and may begin to realize the effect her behavior has upon the fetus. She may be reluctant to ask questions of prenatal health care professionals about issues of concern due to a lack of assertive communication skills. Drake (1996) states that middle adolescents may mistrust adults or prenatal health care professionals which may block effective communication. Therefore, every effort must be made by the prenatal health care professional to remain patient and non-judgmental while providing more detailed information (Drake, 1996). Late adolescents are capable of abstract thinking and can be included as an equal partner with the prenatal health care professional.

Concepts of Age

According to Hamburg (1986), the term "school-age pregnancy" is preferable to "teenage pregnancy" (p. 118). Many researchers tend to label all pregnant females between the ages of 11 and 19 as "pregnant teenagers." While the negative medical, personal, and societal outcomes for adolescent pregnancy have been thoroughly documented, these effects do not usually apply to post-high school 18 and 19 year old mothers. In an effort to clarify the period known as adolescence, Hamburg (1986) defined three distinctive societal constructs and definitions of age: chronological, biological, and social age.

Most societies recognize the date of birth as an important date in the life span. The majority of significant milestones depend on the chronological age, such as school entry, obtaining a driver's license, voting age, and marriage. Throughout most of the lifespan, the three types of ages are closely linked and are not readily viewed as separate. There is a tendency to use chronological age as the symbol for all three; however, due to the duration of adolescence, this is inappropriate (Hamburg, 1986).

There is a wide range in chronological age in the onset of the biological changes of puberty. Since females are generally one to two years ahead of males, girls are more advanced in biological age.

The term "gynecological age" has been created to describe the biological maturity of adolescent mothers. Gynecological age is the number of years following menarche that a pregnancy occurs (Hamburg, 1986). Finally, social age refers to the ages at which cultural milestones are reached for which there are societal norms such as age of first marriage, birth of first child, or age at retirement. When societal norms for these situations are broken by being premature or delayed, there are costs to society. For most persons, all three ages are synchronized through the life span. However, due to the lengthy duration of adolescence, there are a multitude of opportunities for asynchrony with resulting stress.

Subsets of Adolescent Mothers

Along with the advances in behavioral and social sciences have emerged new concepts that clarify the issues concerned with differing life patterns of school-age mothers (Hamburg, 1986). Improvement in understanding the complex issues of adolescent sexuality, pregnancy, and childbearing depends upon gaining access into the interplay of biological, psychological, and developmental factors that influence adolescent subsets in the population. Stenberg and Blinn (1993) state that because a girl experiences extensive physical transformations during early adolescence, mood swings and fluctuations in self-esteem are prevalent These physical and psychological changes influence the adolescent's self-perception. Despite her broadening independence, the adolescent may be unable to leave the present and project the long-term consequences of her conduct (Stenberg & Blinn, 1993).

Rosenbaum (1979) reported that adolescent girls measure their maturing bodies according to the ingrained cultural code of slender, beautiful women. Likewise, Davies and Furnham (1986) found that as adolescent girls grew older, they viewed weight gain with dissatisfaction. Stenberg and Blinn (1993) reported that pregnant adolescents held negative body images and described themselves as "fat" and "ugly." Moreover, they discovered that pregnant adolescents were not only worried about attractiveness but expressed concern and anxiety about birth and the mothering role (Stenberg & Blinn, 1993).

Problem-Proneness

The sexual behavior of adolescents of all ages has been linked to other problem behaviors such as decline in motivation, academic performance, and alcohol and drug use. Jessor and Jessor (1977) assert that distinct personalities interact with the social environment to establish regulatory norms for each individual in order to define age appropriate behavior. Expression of problem behavior is dependent upon the balance between influences such as peer pressure and role models, personal maturity, the adolescent's perception of social support, social restraint, and expectation of others, particularly parents. Utilization of a developmental approach to the theory of problem prone behavior is especially germane to school-age pregnancy since parenthood embodies a major developmental transition (Hamburg, 1986).

Alternate Life Process

The growing trend in mainstream American women is to delay childbearing until a career and a stable marriage have been established. Based on this societal norm, adolescent pregnancy is an extremely unsuitable behavior. The prevailing middle class American norms have little to offer to socioeconomically disadvantaged or minority groups, yet it is the standard in American culture. While adult women lean toward postponing pregnancy until later in adulthood, adolescents have a greater predisposition to become pregnant at an earlier age than previously (Hamburg, 1986). This premature timing often produces detrimental circumstances for the teen mother, her baby, her family, and society. Because the girl lacks life experience or social support, she opts to resolve her new developmental tasks in a way that may result in deleterious consequences. Some fortunate girls, meet the challenge with the attainment of crucial expansion in maturity and ability.

Hogan (1978) discovered that an urban, poor African American female often prefers to bear children during adolescence prior to her entry into the labor force. African American adolescent mothers who initially live with their nuclear families, begin to formulate their own households approximately five years after the birth of the first child. Thus, these mothers use the first five years to establish a kin network that provides child care and other assistance.

Depression and Adolescent Childbearing

Despite the rise in adolescent suicide and the presence of clinical depression in adolescent mothers, research in the area of adolescent depression has been ignored (Hamburg, 1986). Clinical observations support the postulate that a depressed mother will have a positive mothering experience if the baby has a contented temperament. She may perceive the baby to be a gratifying extension of herself and delight in an intimate relationship. Unfortunately, if untreated, maternal depression will increase as the baby becomes a toddler. Subsequently, some depressed mothers, seeking to recapture the sense of love and intimacy, become pregnant again. Although loneliness and depression often leads to the search for sexual intimacy, research regarding the nature and amount of depression in school-age mothers is sorely deficient.

Early Adolescent Pregnancy

The level of sexual activity continues to increase especially among young adolescents which in turn, results in an increased rate of adolescent pregnancy. Adolescent pregnancy is related to a variety of negative medical and social outcomes for both mother and child. Following a review of the literature, Hamburg (1982) found that for mothers with poor outcomes, regardless of age, there is a strong correlation with inadequate prenatal care. Hamburg (1982) therefore posits that many of the adverse outcomes of adolescent pregnancy are not age-related but instead related to insufficient prenatal care. Unfortunately, many adolescents tend to neglect prenatal care. Most researchers have determined that early adolescent pregnancy is correlated to preeclampsia and low infant birth weight. Those girls most at risk are black, have a low gynecological age, are from a low socioeconomic status, and do not seek prenatal care. Young adolescents represent a small but growing number of school-age mothers who are at risk for medical problems for themselves and their children as well as parenting problems (Hamburg, 1982).

Summary

Health care professionals have used prenatal education for some time as a means to improve childbirth outcomes. Many women not only seek to enhance their prenatal knowledge base but actively participate with health care professionals in order to make personal health decisions (Enkin, 1990; Oakley & Houd, 1990). In contrast, pregnant adolescents appear less likely to discuss any aspect of pregnancy; possibly because they may be less sensitive to the emotional and physical changes of pregnancy. Regardless, Mercer (1986) urged prenatal health care professionals to tailor prenatal education that is appropriate to the level of maturity and developmental stage of the pregnant adolescent. In order to provide optimal prenatal educational objectives, prenatal educators must assess the learning needs of each individual client and then, collaborate with the client to effectively meet her needs.

Providing information to pregnant clients can be viewed as gargantuan, given the fact that medical science is characterized by a knowledge explosion with rapid obsolescence of facts. The changes that occur during pregnancy often requires additional time for the woman to interpret information in order to make rational decisions (Thibodeau & Hawkins, 1982). Individuals have limited capabilities to comprehend information; overburdening the woman often results in a disruption of the education process. Cooperation and effective communication between the pregnant woman and the prenatal health care professional is fundamental to provide a supportive environment that decreases anxiety, contributes accurate information, and centers on prevailing matters (Hassid, 1978). Educational content must be suited to each individual in accordance to her unique situation (Severson-De Muth, 1989); therefore, teaching objectives are organized around client needs at that explicit time. A partnership between the teacher and the learner tends to promote success in accomplishing the educational task (Dewey, 1916). Proper timing is a crucial factor worthy of attention; individuals are more receptive to learning when they are allowed to select the time for teaching (Smith, 1987).

Learning is impractical if the individual has no interest in the subject; however, genuine interest usually results in successful achievement that provides gratification to the learner. Interest in a topic is personal and is founded upon the individual's experience and requirements; consequently, new

information is more pertinent when it is furnished in such a manner that its merit is associated with what already has significance for that particular individual.

A basic component of the client education process embraces the evolvement of a beneficial and rewarding association with the client. Although the information presented to the client may be factual, if the relationship or the interaction is insensitive or disrespectful, or if the information is inappropriate for the developmental level, client education is not effective (Severson-DeMuth, 1989). The role of the prenatal health care professional is to provide education and health care for the pregnant woman, intervening before a problem is apparent. By assessing the accomplishment of developmental tasks or difficulty with this process, the prenatal health care professional can facilitate the pregnant woman's movement through the developmental process of pregnancy.

Developmental models are grounded on the supposition that the developmental process promotes the realization of the individual's maximum potential. Developmental tasks emanate from a combination of the process of physical maturation, cultural expectations, and personal values acting concurrently upon the individual (Havighurst, 1972).

When the individual is ready to achieve a certain task, the "teachable moment" has come; efforts at teaching furnish satisfying results when they come at the *teachable moment*, when the task should be learned (Havighurst, 1972). It is at these "sensitive periods" that individuals are able to learn readily through specific kinds of experience. A common attribute of a developmental task is the existence of teachable moments when the individual has the augmented capacity to learn. Success or failure in developmental tasks at a specific age leads to success or failure in the tasks of a later age. While some developmental tasks are specifically defined by particular cultures in society, certain developmental tasks are universal from one culture to another (Havighurst, 1972). Hence, the interpretation of developmental tasks will vary among cultures to some extent.

The necessity for change is frequently seen as a developmental crisis for the family who must change in order to resolve the crisis, restore homeostasis, and prepare for subsequent stages of development. Reorganizing relationships with relatives is an important developmental task of the

expectant phase for it bestows to a sense of harmony and acceptance on the part of the pregnant woman and her partner.

Certain developmental events are universal for most individuals and as such, are predictable. These predictable events are termed developmental crises because they have the potential for disrupting an individual's equilibrium which may result in a true crisis (Thibodeau & Hawkins, 1982). The term "crisis" has both positive and negative properties. The successful resolution of a crisis can strengthen coping strategies and establish a higher level of performance than that which existed preceding the crisis. During these periods such as adolescence, pregnancy, and parenthood, certain tasks must be confronted and mastered in order to successfully progress through the current stage and move to the next (Thibodeau & Hawkins, 1982). A developmental crisis usually results in a heightened desire on the part of the individual, to seek assistance from others; consequently, the person is more receptive to influence by others than during stable time periods.

Pregnancy results in emotional changes that are the result of somatopsychic and psychogenic causes. As pregnancy continues, the woman tends to focus her attention on motherhood. One cannot consider pregnancy as one phenomenon and parenthood as another; one is simply a preparation for the other (Caplan, 1959). This preparation begins in early childhood when a child imitates the parent but the mother-child relationship begins during pregnancy. In the first trimester, the relationship begins with a set of attitudes toward the pregnancy itself. In the second trimester, there is a set of developing attitudes and relationships with the fetus. Finally, in the third trimester is the set of attitudes and relationships with the baby that is soon to be born (Caplan, 1959).

Pregnancy is a period of profound endocrine, somatic, and psychological changes. These changes induce a state of disequilibrium that results in a momentous turning point in a woman's life. Physical changes are wholly indisputable; however, the associated psychological phenomena encompass adaptive tasks that must be assimilated to resolve the disequilibrium induced by pregnancy. These tasks, according to Tanner (1969) constitute the three psychological tasks of pregnancy. According to Tanner (1969), behavioral indication of the woman's involvement with specific psychological tasks often divulge

concerns about the impact of physical changes on the pregnant woman. These concerns include both physical and emotional changes, feelings about the changes, and attitudes toward the fetus.

The task of incorporation and integration of the fetus occurs during the first trimester but is more clearly evident in later stages of pregnancy. The task of perception of the fetus as a separate entity begins in the second trimester and is well established by the beginning of the third trimester. Willingness to accept the parental role begins by late in the second trimester and peaks in the third trimester, however, this task may extend into the postpartum period.

The description of developmental tasks, along with the behaviors that are specific for each trimester, assist the prenatal health care professional and educator to assess the involvement of the pregnant woman with expected psychological tasks. Utilization of this information can serve as a knowledge base for professionals to enhance interviewing, assessment, and communication skills in order to contribute to a positive and meaningful pregnancy that will ultimately result in a successful adaptation for the woman and her family (Tanner, 1969).

Sexual knowledge gradually increases with age (Hamburg, 1986). Duvall (1967) discovered that most adolescents encounter difficulty confiding in their parents, especially regarding sexual topics. Early adolescents often acquire incorrect and erratic sexual information usually from peers and the media. Health care professionals are considered by adolescents as good sources of information but few adolescents utilize this resource (Hamburg, 1986). Furthermore, the adolescent is less likely to seek assistance from the prenatal health care professional (Bergman, 1988).

Pregnancy is a challenge to any female; to an adolescent, the challenge often becomes a crisis because it adds complexity to an already difficult period of physical and emotional changes (Turner, Grindstaff, & Phillips, 1990). Adolescents have a greater tendency to incur pregnancy at an earlier age than in years past (Hamburg, 1986) which often yields stressful circumstances for the young mother, her baby, her family, and society at large. Because the girl has little life experience or social support, she selects options in the process of resolving new developmental tasks that result in harmful consequences.

Therapeutic communication with pregnant adolescents requires recognition of their cognitive and psychosocial development (Drake, 1996). Individuals progress through the developmental tasks of

adolescence and pregnancy at different rates making it imperative for prenatal health care professionals to consider their developmental stages as well as maturity levels before intervening. When assessing developmental levels of the pregnant adolescent, prenatal health care professionals must evaluate the educational level, future orientation, her type of thinking, and her decision-making ability (Drake, 1996).

Adolescents may be oriented to the present, self-centered, and are usually dependent upon the family to make decisions about health care Although the middle adolescent begins to develop abstract thinking she may not always realize the effect her behavior has upon the fetus. The pregnant adolescent may be reluctant to ask questions of prenatal health care professionals about issues of concern due to a lack of assertive communication skills. Furthermore, the adolescent may mistrust adults or prenatal health care professionals which may block effective communication. Drake (1996) believes that every effort must be made by the prenatal health care professional to remain patient and non-judgmental while providing more detailed information.

In conclusion, a review of the literature determined that a combination of collaboration and effective communication between the pregnant woman and all members of the health care team is quintessential to provide an environment that diminishes apprehension, contributes precise content, and concentrates on prevailing issues. Individuals who display interest in a particular subject have greater motivation to learn. Therefore, educational content must be adjusted to meet individual needs; consequently, teaching goals should be directed toward client needs specifically for that particular time. Educators always run the risk of overlooking the sequential development of those they teach. Timing is an acuminate factor for consideration, allowing the client to select the time for teaching has been found to be an effective method conducive to learning (Smith, 1987).

It is now a widely accepted fact that psychological tasks of pregnancy not only exist but include demonstrative behavioral manifestations associated with each trimester of pregnancy. The description of developmental tasks, along with the behaviors that are specific for each trimester, assist the prenatal health care professional and educator to assess the involvement of the pregnant woman with expected psychological tasks. Despite the evidence that supports the existence of developmental stages of pregnancy, little evidence has been found that indicates prenatal education topics are actually presented to

women according to the developmental stages of pregnancy. One article proposes the use of a lengthy tool to record the pregnant woman's movement through the developmental stages of pregnancy but did not specifically provide guidelines for prenatal education. A second article was a review of the literature that focused on the special developmental needs present in pregnant adolescents.

Chapter III describes the research design for this study, the population from which subjects were selected for the sample, the instruments that were used, the data collection method, and the statistical procedures used for data analysis.

CHAPTER III

RESEARCH DESIGN

Statement of the Problem

Women who seek prenatal information are motivated by their desire for accurate information (Enkin,1994). Many women actively participate with health care professionals in order to make personal health decisions (Oakley & Houd, 1990). In order to achieve prenatal educational objectives, caregivers must assess the learning needs of each individual client and then collaborate with the client to ensure that she receives information effectively (Enkin, 1994). Prenatal care and education are effective methods of improving pregnancy outcome. Early and continuous access to prenatal care and education is a cost-effective means of improving neonatal health while providing expectant women with health and pregnancy information (Merkatz, Thompson, Mullen, & Goldenberg, 1990; Freda, Damus, Brustman, & Merkatz, 1989).

Mercer (1986) noted that pregnant adolescents had less tendency to discuss any aspect of pregnancy; this was attributed to the possibility that the adolescent was less sensitive to emotional and physical changes of pregnancy. In any case, Mercer (1986) urged health care professionals to go beyond providing "routine care" due to the move from concrete to abstract thinking that occurs during adolescence (Enkin, 1994).

Cooperation and effective communication between the pregnant woman and every member of the health care team is essential to ensure a supportive milieu that reduces anxiety, provides factual information, and focuses on current concerns (Hassid, 1978). Severson-DeMuth (1989) suggests that educational content must be adapted to each individual client according to her particular circumstances; therefore, teaching goals are directed toward client needs at that specific time. According to Dewey

(1916), educators always run the risk of overlooking the sequential development of those they teach. When the learner is included as a partner in the learning process, success in achieving the educational task is more readily guaranteed (Dewey, 1916). Timing is an profound factor for consideration; allowing the client to select the time for teaching has been found to be an effective method conducive to learning (Smith, 1987).

Conceptual Hypotheses

The primary purpose of this study was to determine if prenatal education needs change from one trimester to the next according to the developmental tasks of pregnancy (Hassid, 1978; Rubin, 1970; Tanner, 1967). A secondary purpose was to determine if prenatal health care professionals are supplying pertinent information at the optimal time of relevance. It was anticipated that the results of this research would provide information for prenatal health care professionals to enable them to better meet the needs of their pregnant clients.

The general hypothesis of this study was that due to the unique developmental tasks of each trimester, pregnant women will vary in the perceived value of prenatal education topics depending upon gestation. The researcher predicted that prenatal health care professionals would supply pertinent prenatal education at the optimal time of relevance. Additionally, it was predicted that pregnant women would vary in the perceived value of prenatal education topics according to demographic factors. Finally, it was hypothesized that pregnant women who perceive their own client-professional relationship as rewarding and valuable, would indicate a greater desire for acquiring additional prenatal education. Conceptual hypotheses are listed below.

Hypothesis I. Pregnant women will differ in their perceptions of the value of prenatal education topics by pregnancy groups.

Hypothesis II. Pregnant women who perceive the prenatal healthcare professional as supportive will score higher on their desire to learn than those who do not.

Hypothesis III. Pregnant women will differ in their perceptions of the value of prenatal education topics according to selected demographic variables.

Hypothesis IV. Prenatal healthcare professionals will supply pertinent prenatal education information at the optimal time of relevance.

Hypothesis V. Pregnant adolescents will differ from pregnant adults in their perceptions of the value of prenatal education topics across all stages of pregnancy.

Research Methodology

This study used comparative and correlational designs to investigate differences among the major variables of prenatal education, prenatal health care professionals, and pregnant women. Prenatal education variables were topics related to general health, labor and delivery, infant care, medications and anesthesia, comfort, medical testing in pregnancy, fetal growth and development, and danger signs of pregnancy. Prenatal health care professional variables included physicians and nurses from both public and private sectors. Finally, gestational variables incorporated subjects from the public and private sectors that included both adolescents and adults at various weeks of gestation. The research variables were complex and were not easily regulated by experimental control. Comparative and correlational research favored concomitant measurement of the relationship of several variables. Although the demographic variables of educational status, income, marital status, and race were examined, it should be noted that these variables are frequently related to each other and to age. Potential limitations of this methodology were the identification of ambiguous and erroneous relationship patterns which may have little reliability or validity. Cause and effect was not defined so that specific issues could not be proven. Less control is exerted over these variables than with experimental research designs and thereby limited the researcher in data analysis (Isaac & Michael, 1995).

Assumptions

The following assumptions applicable to this particular research are listed as follows.

1. Participants read, write, and comprehend English.
2. Participants are willing to share the requested information with the researcher.
3. A three to six month time frame will be adequate to collect the needed data.
4. Prenatal care specialists provide similar information to all pregnant clients.

Instrumentation

Pencil and paper self-report questionnaires were used to collect data from both prenatal health care professionals and pregnant subjects. The Pinkosky Prenatal Assessment Tool (PPAT) was designed by the researcher to assess the developmental stages of pregnancy and the perceived value of prenatal education topics according to pregnancy groups. The questionnaire was divided into three sections: the first section determined demographic data such as age, socio-economic status, race or ethnicity, parity, gestation, marital status, educational level, and occupation (see Appendix B). The next section, Part I of the PPAT, was created by modifying several questionnaires including the Pregnancy Research Questionnaire (PRQ) (Schaefer & Manheimer, 1960) and a structured interview used by Tanner (1967) to assess the developmental stages of women during pregnancy. Finally, the last section, Part II of the PPAT was adapted from the Prenatal Interest Tool (PIT) created by Freda, Andersen, Damus, and Merkatz (1993) that assessed 38 topics of interest to pregnant women. Permission to use the PIT was obtained from Dr. Freda, however, the remaining authors could not be located. The PIT, created by Freda and her associates (1993), asked prenatal health care professionals which prenatal education topics were important. The PIT was originally constructed in a Likert scale format with three options from which to choose: extremely important, important, and extremely unimportant. Both pregnant women and prenatal health care professionals had used the same questionnaire in the same manner in the study conducted by Freda and her associates (1993).

Modifications

The Pinkosky Prenatal Assessment Tool (PPAT) was divided into two sections. Part I consisted of 40 items and was a combination of the work of Tanner (1967) and Schaefer and Manheimer (1960). The first eleven items were taken from Tanner's (1967) original work and included the common responses that she reported in a multiple choice format; these responses were coded by the researcher. Items included such things as "How did you feel about being pregnant?" with multiple choice responses listed as "very happy," "somewhat happy," "not sure," "unhappy," and "very unhappy." The responses were given a number response between one and five for coding purposes. The remaining items were taken from the questionnaire by Schaefer and Manheimer (1960) and were shortened and updated to reflect the 1990s. An example of an item from this section is "I worry a great deal about pain in childbirth." These items remained in Likert style and were given a number value of "1" through "4," but the responses were consistently labeled (1) strongly agree, (2) mildly agree, (3) mildly disagree, and (4) strongly agree. Additionally, items assessing satisfaction with the prenatal health care professional were included such as "My prenatal health care professional is sensitive to my needs." Statements evaluating the pregnant woman's desire to learn were added such as "I read or go to class to learn about those issues that concern me." These additions allowed the primary researcher to determine any existing correlations between provider satisfaction and learning desire. Part II (formerly called the PIT) for pregnant subjects was composed of the original 38 prenatal education topics initially created by Freda and her associates (1993), but the Likert scale was changed to create an equal interval scale that was labeled as (1) extremely interested, (2) interested, (3) not interested, and (4) extremely uninterested.

The PIT for prenatal health care professionals was modified as well. Section I of the PIT for prenatal health care professionals requested demographic information such as age, gender, specialty, occupation, and race. Section II of the PIT asked the professionals to indicate in which trimester the topics were introduced in comparison to the original tool which only asked which topics were important. The 38 original prenatal education topics were listed and prenatal health care professionals were

instructed to choose one of the following selections: (1) first trimester, (2) second trimester, (3) third trimester, (4) I don't discuss this and (5) information provided in written form.

Content Validity

The new and updated instrument for pregnant women (Schaefer & Manheimer, 1960; Tanner, 1967) was reviewed by a panel of experts to establish content validity for both parts of the questionnaire. Subsequently, Part I and PART II were combined to create the Pinkosky Prenatal Assessment Tool (PPAT). The PIT for prenatal health care professionals was correspondingly reviewed and approved by a panel of experts for content validity.

Pilot Study

Prenatal Health Care Professionals

A detailed description of the research was provided for the Institutional Review Board in October 1995 requesting expedited status (see Appendix D). Approval was received in late October 1995 making it possible to conduct a pilot study using the questionnaire designed for prenatal health care professionals at a November 4, 1995 meeting of the Association of Women's Health, Obstetrics, and Neonatal Nurses (AWHONN). Fifteen nurses consented to complete the questionnaires following which time the questionnaire was scrutinized for any difficulties. There were virtually no problems in this pilot study with one exception. Subjects were not given a written description of the study or telephone numbers in the event of questions. Those subjects requesting such information about the study were given a form which contained this information. As a result of this pilot study, an information sheet with a description of the research and telephone numbers was included with the questionnaire packet.

Pregnant Subjects

The researcher contacted the nursing supervisor and clinic manager of the prenatal clinic at the University of Oklahoma (OU) Tulsa College of Medicine in order to gain permission for conducting the

women with three first trimester women who happened to be at the clinic on that particular day. Part II of the questionnaire listed prenatal education topics in combination with a Likert scale; however it was discovered that all three women listed the majority of the topics as "extremely important." This included topics that according to a review of the literature, are of little interest to women in the first trimester of pregnancy; yet these first trimester women, who also expressed unhappiness with pregnancy earlier in the questionnaire, indicated great interest in infant care, labor and delivery, and breastfeeding.

Following the pilot study with pregnant women, the questionnaire was reviewed and revised. Instead of using a Likert scale to assess prenatal education topics, the topics were listed in random order without the Likert scale; subjects were asked to circle only those topics of interest to them at that particular point in the pregnancy. The revisions were shared with the researcher's advisor and approved. A second pilot study was conducted at the OU prenatal clinic with two first trimester women and one second trimester woman. This time, only a few of the prenatal education topics were circled which were more in keeping with the developmental tasks of pregnancy identified for the first and second trimesters of pregnancy.

Sample Population

Pregnant Subjects

Although large sample sizes are usually endorsed in order to provide randomization, Kerlinger (1986) states that a sample size of 30 or more reduces the probability of obtaining deviant results. The research population consisted of women and adolescents with normal, uncomplicated pregnancies, living in Tulsa, Payne, and Washington counties. A total convenience sample consisted of 239 primagravid women from various trimesters of pregnancy between the ages of 12 and 40. Subjects were obtained from both the private and public sectors for a total of 158 adults and 45 adolescent subjects. An additional sample of 36 adolescents was obtained from the Margaret Hudson Program for Pregnant and Parenting Teens, a site that specifically serves pregnant adolescents for a grand total of 81 adolescent subjects.

Several methods were used to generate a suitable sample. Private obstetricians known to the researcher were contacted and asked to refer clients that met the criteria. Second, prenatal clinics in Washington, Payne, and Tulsa counties were contacted for referrals of clients that fulfilled the research criteria. These counties were chosen due to their convenience for the primary researcher and her assistants. Finally, hospital childbirth classes generated additional subjects for the study. Questionnaires were administered to pregnant subjects by the primary researcher or her assistants. Research assistants were senior student nurses enrolled in nursing research. Assistants were trained by the primary researcher and then observed to ensure consistency in data collection. The research assistants collected data at a variety of sites, from both public and private sectors. In each case, assistants evaluated pregnant women to determine the suitability of the subject for this particular study.

Pregnant Subjects Demographic Data

Two hundred thirty nine subjects comprised a convenience group of pregnant women. Data were collected between May 1996 and December 1996 from private doctors' offices, clinics, and health departments from Payne, Tulsa, and Washington counties. Subjects were not asked to name their prenatal health care professional; therefore that information was not available for most of the subjects. Data from 36 (15%) pregnant adolescent subjects were collected at the Margaret Hudson Program for Pregnant and Parenting Teens, a local Tulsa site; however, adolescent subjects from other sources were additionally utilized in the study for a total of 81 (33.8%) adolescent subjects (see Table I).

Subjects were analyzed according to pregnancy category with 15.5 % (37 subjects) in their first trimester of pregnancy, 21.3% (51 subjects) in the second trimester, 28.5% (68 subjects) in their third trimester; 33.9% (81 subjects) were adolescents of varied gestational stages, and .84% (2 subjects) did not indicate the gestation of the pregnancy. Women in their third trimester of pregnancy are typically seen by prenatal health care providers on a more frequent basis than women in the first and second trimesters of pregnancy accounting for the larger sample size of the third trimester group. In addition, many women in the first trimester are unaware of their pregnancies until they are in the early part of the second trimester.

The majority of the subjects, or 87.9% (210 subjects), were primigravidas. Of the remaining group, 7.9% (19 subjects) had been pregnant once before. However, all but one subject had experienced a miscarriage or death of a baby; 4.2% (10 subjects) did not respond to the item assessing pregnancy history.

TABLE I

PRENATAL HEALTH CARE PROVIDERS UTILIZED
BY PREGNANT SUBJECTS
n = 239

Provider	Frequency	Percentage
Provider unknown	136	56.9%
Private physician's office	38	15.9%
Margaret Hudson Program	36	15.1%
Health Department	21	8.8%
Clinic	8	3.3%
Total	239	99.9% [a]

a Due to rounding, total does not equal 100%

Age

Subjects ranged in age from 12 to 39 with an overall mean age of 22.96. Subjects who were 19 or below were placed in the teen group. Ages in the teen group ranged from 12 to 19 with a mean of 17.09. All teen subjects were placed in the teen category for analysis separate from pregnant adults since adolescents have different needs and interests than adults and are often considered to be a high risk population during pregnancy. Pregnant teens are more likely to have difficulty with pregnancy and birth due to factors such as immature physical development, interruption of the developmental tasks of adolescence, higher incidence of sexually transmitted diseases (STD), use of illegal drugs, alcohol, and cigarettes, social isolation, and interruption of formal education (Adams et al., 1989). Due to these factors, a teen category was utilized in order to determine whether pregnant adolescents had different

concerns and interests than pregnant adults. Teens were not subdivided according to trimester due to the small sample size of the teen group (81).

Race

More than two-thirds of the sample group was comprised of whites, followed by African Americans, American Indians, Hispanic, and Asian American; 6.3% (18) did not respond to this item (see Table II). The race composition of the sample was then compared to that of Payne, Tulsa, and Washington counties to determine if the sample population was representative of the general population (see Table III). This comparison indicated that white subjects were under-represented and black subjects were over-represented in the study population. A possible explanation for this finding could accounted for by the fact that a convenience sample was used as opposed to a random sample which would more likely provide a sample reflective of the general population. Additionally, many of the subjects came from public assistance clinics who have a higher number of African Americans as their clientele.

TABLE II

DISTRIBUTION OF PREGNANT SUBJECTS
ACCORDING TO RACE
n = 239

Race	Frequency	Percentage
White	160	66.9%
African American	39	16.3%
American Indian	14	5.9%
Hispanic	6	2.5%
Asian American	2	.8%
Missing Data	18	7.5%
Total	239	99.9% [a]

[a] Due to rounding, total does not equal 100%

TABLE III

RACE COMPOSITION IN PAYNE, TULSA AND WASHINGTON COUNTIES [a]

Race	Population	Percentage
White	515,052	84.03%
African American	52,676	8.59%
American Indian	31,836	5.19%
Asian American	8137	1.32%
Other	5213	.852%
Total	612,914	99.98% [b]

a United States 1990 Population Census

b Due to rounding, total does not equal 100%

Marital Status

The majority of the subjects were married (55.6% or 133 subjects), followed next by subjects who reported they were single and/or living with a parent. Of the remaining group, 7.9% (19) were living with a partner, 2.1% (5) were divorced, and .4% (1) lived with a friend (see Table IV).

TABLE IV

MARITAL STATUS OF PREGNANT SUBJECTS
n = 239

Marital Status	Frequency	Percentage
Married	133	55.6%
Single, living with parent	59	24.7%
Divorced	5	2.1
Living with friends	1	.4%

a Due to rounding, total does not equal 100%

(table continues)

TABLE IV (continued)

MARITAL STATUS OF
PREGNANT SUBJECTS
n = 239

Marital Status	Frequency	Percentage
Single, head of household	22	9.2%
Living with partner	19	7.9%
Total	239	99.9% [a]

a Due to rounding, total does not equal 100%

Economic Status

Most of the subjects reported family incomes below $40,000 per year. Missing data accounted for 9.6% (23) of the sample, 35.6% (85) reported incomes below $20,00, 33% (79) reported incomes between $20,000 and $39,999, 21.8% (52) reported incomes above $40,000 (see Table V). Combined per capita income for Payne, Tulsa, and Washington counties is $19,275.33 according to data from the 1990 United States Census Bureau.

TABLE V

ECONOMIC STATUS OF
PREGNANT SUBJECTS
n = 239

Income Range	Frequency	Percentage
Less than $20,000	85	35.6%
$20,000 to 39,999	79	33.1%
$40,000 to 59,999	37	15.5%
Greater than $60,000	15	6.3%
Missing data	23	9.6%
Total	239	100.1% [a]

a Due to rounding, total does not equal 100%

Education Status

Nearly half of the subjects had attended some college with 57 (23.8%) reporting they had attended some college, 44 (18.4%) reporting a college degree, and 15 (6.3%) had completed a graduate degree or above for a total of 48.5% of the subjects who have attended at least some college (see Table VI). The remaining subjects were either high school graduates (25.1%) or had not completed high school (25.9%).

TABLE VI

EDUCATIONAL BACKGROUND OF
PREGNANT SUBJECTS
n = 239

Amount of Education	Frequency	Percentage
Has not finished high school	60	25.1%
High School	62	25.9%
Some College	57	23.8%
College Degree	44	18.4%
Graduate school	15	6.3%
Missing Data	1	.4%
Total	239	99.9%[a]

a Due to rounding, total does not equal 100%

Health Status

The most common health problem reported was migraine headaches (12.6%), followed by asthma (9.6%), and depression (9.2%). Other health problems were reported by 25.5% of the sample population, however, 43.1% (103) of the subjects reported no health problems (see Table VII).

TABLE VII

HEALTH PROBLEMS REPORTED BY
PREGNANT SUBJECTS
n = 239

Condition	Frequency	Percentage
No Health Problems	103	43.1%
Migraine	30	12.6%
Asthma	23	9.6%
Depression	22	9.2%
Hypertension	13	5.4%
Heart Murmur	9	3.8%
Ulcer	9	3.8%
Kidney trouble	6	2.5%
Diabetes	3	1.3%
Seizures	2	.8%
Cancer	1	.4%
Other Health problems	18	7.5%
Total	239	100%

Prenatal Health Care Providers Demographic Data

Study Population of Prenatal Health Care Professionals

In order to obtain the prenatal health care professional sample, physicians and nurses received either a telephone call or a letter asking them to participate in the study; however the majority of the physicians contacted either declined to participate or refused to answer letters or telephone calls.

Questionnaires were likewise administered to the obstetric residents and nurses of the prenatal clinic at the University of Oklahoma Tulsa Medical College.

The nurse care manager of the University of Oklahoma Tulsa College of Medicine Prenatal Clinic asked nurses, doctors, and residents to participate on a voluntary basis. In addition, the Stillwater Health Department Prenatal Clinic also agreed to participate as well as several private physicians. A number of physicians were contacted by the researcher and asked to participate but most of them either declined or ignored the request. Finally, nurses belonging to the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) were contacted by the researcher during the Spring 1997 Oklahoma Section Meeting and were asked to participate. All provider questionnaires were administered by the primary researcher. In all, a total of 54 subjects (11 physicians and 43 nurses) from private, hospital, and clinic practices as well as AWHONN members, participated in the study.

The 54 professional subjects who participated in the study ranged in age from 21 to 60 with a mean age of 38.65 years. The majority of the subjects were female (85.5%) and white (85.2%); males and minorities were under-represented in the provider sample (see Table VIII). However, since the majority of the provider group was composed of nurses, most of whom are female, it is not surprising to find fewer males. Table IX displays the most frequent specialty listed which was obstetrics and gynecology (70.4%), followed by maternal child health (22.2%). The hospital was given as the primary work setting for 38.9% of the subjects, however approximately 12-15% of the respondents reported each of the following work settings: clinic, private, community health, and education (see Table X).

Registered nurses comprised the vast majority of the professional provider population with an overall total of 64.81%; an additional 11.1% were licensed practical nurses (LPN). However, there was wide fluctuation in the training of those nurses ranging from licensed practical nurses (one year of training) and associate degree nurses (two years of training) to those nurses with a four year bachelor of science degree (BSN) and above. Of the nurse group, 37% had a BSN; an additional 20.43% had advanced nursing degrees (see Table XI). For the remaining 24.1% of the provider group, 16.7% were medical doctors (MD), 3.7% were doctors of osteopathy (DO), and 3.7% were residents. Many physicians

were contacted and asked to participate, however the majority of them refused for reasons unknown. Therefore, the physician population is considerably smaller than the nurse population.

TABLE VIII

PRENATAL HEALTH CARE PROVIDERS
ACCORDING TO RACE
n = 54

Race	Frequency	Percentage
American Indian	4	7.4%
African American	1	1.9%
Asian American	3	5.6%
White	43	85.2%
Total	54	100.1% [a]

a Due rounding, total does not equal 100%

TABLE IX

PRENATAL HEALTH CARE PROVIDERS
ACCORDING TO SPECIALTY
n = 54

Specialty	Frequency	Percentage
Obstetrics/Gynecology	38	70.4%
Maternal Child	12	22.2%
Family Practice	2	3.7%
Neonatal	1	1.9%
Childbirth Education	1	1.9%
Total	54	100.1% [a]

a Due to rounding, total does not equal 100

TABLE X

PRENATAL HEALTH CARE PROVIDERS
ACCORDING TO SETTING
n = 54

Setting	Frequency	Percentage
Hospital	21	38.9%
Clinic	8	14.8%
Private	8	14.8%
Community Health	7	13%
Education	7	13%
Medical Residency	2	3.7%
Managed Care	1	1.9%
Total	54	100.1% [a]

a Due to rounding, total does not equal 100%

TABLE XI

PRENATAL HEALTH CARE PROVIDERS
ACCORDING TO OCCUPATION
n = 54

Occupation	Frequency	Percentage
Medical Doctor	9	16.7%
Doctor of Osteopathy	2	3.7%
Medical Resident	2	3.7%
Licensed Practical Nurse (LPN)	6	11.1%
Associate Degree Nurse (RN)	4	7.4%

(table continues)

TABLE XI (continued)

PRENATAL HEALTH CARE PROVIDERS
ACCORDING TO OCCUPATION
n = 54

Occupation	Frequency	Percentage
Bachelor of Science Nurse(BSN)	20	37%
BSN with Graduate Degree	4	7.4%
Masters Degree in Nursing	5	9.3%
Nurse Practitioner	2	3.7%
Total	54	100%

Difficulties with the Data Collection

Most of the private physicians contacted refused to allow the primary researcher or her assistants to administer the questionnaires to their patients, stating that they themselves would do it. However, they did not. Two clinics agreed to participate but subsequently would not allow research assistants or the primary investigator to administer the questionnaires. The remaining pregnant subjects from the public sector were obtained from the University of Oklahoma Tulsa College of Medicine, Payne County Health Department, and the Washington County Planned Parenthood prenatal clinics.

Subjects for the private sector were mostly obtained from the practice of an individual obstetrician in Stillwater, Oklahoma. However, subjects from various other private obstetricians in Tulsa were similarly secured by research assistants. The questionnaire for pregnant subjects did not require the participant to record the name of her prenatal health care professional; therefore, the source of prenatal health care for the majority of the sample is unknown. As a result of the difficulties encountered in securing subjects from clinic sites, there are more subjects from private prenatal health care professionals than from state and city clinics in the sample.

First trimester subjects were especially difficult to locate. Many women do not realize they are pregnant until after the first trimester of pregnancy has passed, making these subjects difficult to obtain. Those who are procuring care in the first trimester are seen once a month. The result is that a pregnant woman may be seen by a prenatal health care professional only once or twice in the first trimester. Pregnant women are typically seen by a prenatal health care provider once a month until 36 weeks' gestation at which time, they are seen more frequently. Consequently, subjects in the third trimester of pregnancy comprise the largest sample group.

Difficulty was encountered when attempting to generate a larger sample size of prenatal health care professionals. Doctors were especially unwilling to participate but did not explain the reason for refusal. Many of the professional subjects circled multiple answers which was not anticipated. Instead of selecting one trimester, they circled two or three choices; that is, they indicated that a particular topic was discussed more than once during the pregnancy. This made a comparison between pregnant and professional subjects more difficult since pregnant subjects were asked to circle only topics of interest at the time they completed the questionnaire.

Reliability and Validity

Face and content validity was established using a panel of experts. Reliability for the original version of the PRQ for pregnant subjects was reported by Manheimer and Schaefer (1960) as .87 in the literature but the method by which this was established was not provided, nor was there a report regarding validity. Tanner's (1967) research was part of a thesis requirement for a master of science degree in nursing. At that time, virtually little or no emphasis was placed on reliability or validity in nursing research, therefore no reports regarding reliability or validity of Tanner's instrument were discovered. Nevertheless, Tanner is considered to be the pioneer in the field of developmental stages of pregnancy.

Although reports of reliability are available for the original PRQ and PIT, they were modified and evolved into the PPAT for this particular study. This required a complete reliability analysis as part of the study. Therefore, Cronbach's alpha was used to provide reliability analysis for the instrument

constructed for the current research. Freda et al. (1993) outlined procedures used to provide face validity, no other measures of validity were reported for the remaining instruments.

Reliability and Validity of the PPAT

Face and content validity was established for the current instrument through a review by a panel of experts (Cone & Foster, 1993). Cronbach's alpha was conducted on both the individual parts of the questionnaire (Part I and Part II) and on the entire scale as a whole. Reliability for the Part II was .82; however reliability for the Part I was .45 which falls below the .50 level of acceptability (Remmers & Gage, 1943). Following a review of the reliability analysis, 12 items were discarded from Part I, leaving a total of 28 items that measured developmental stages of pregnancy, raising the reliability to .71 for Part I. When Part I and Part II were combined, the overall reliability was .73.

Reliability and Validity of the Professional PIT

Face validity for the 38 prenatal topics listed on the PIT for prenatal health care professionals was originally established by Freda and her colleagues in 1993. Reliability was reported as .82 for the original tool. Due to the fact that the instrument was manipulated and reorganized, face and content validity was established for the revised instrument by a panel of experts. Additionally, Cronbach's alpha was conducted to establish reliability which was determined to be .97. Remmers and Gage (1943) state that the reliability coefficient should be as high as possible but caution that "the reliability coefficient must be interpreted in light of the group on which it is based, of the variability of the group, and the method used to estimate reliability" (1943, pp. 141-142). One explanation of the high reliability coefficient in this case may be the homogeneity of the professional group.

Methods of Data Collection

Pregnant subjects and prenatal health care professionals who were unknown to the researcher were contacted and asked to participate in the study. Subjects were approached by the researcher and her

assistants, asked for written consent, and given instructions prior to administration of the instruments. The assistants were senior nursing students who were selected by the researcher from a pool of volunteers from a senior nursing research course (see Appendix C for specific training and evaluation procedure). The assistants were then trained by the researcher in the administration of the questionnaire, including interview techniques and then observed to ensure consistency. When the training was completed, the assistants collected data independently but remained in close contact with the primary researcher.

Data from prenatal health care professionals, pregnant adult women, and pregnant adolescents were collected over a six month period by the primary researcher and her assistants. For both the private and public sectors, pregnant subjects were placed in one of four groups. One group was comprised of only those women in the third trimester of pregnancy, the second group was composed of those women in the second trimester of pregnancy, while the third group was in the first trimester of pregnancy. The instruments were administered once only to each subject at the time of her office visit. Pregnant adolescents at any gestation comprised the fourth group; the questionnaire was administered to pregnant adolescents in exactly the same manner as for adults. In addition to adolescent subjects from private and public clinics, pregnant adolescent subjects were surveyed during prenatal classes held at the Margaret Hudson Program for Pregnant and Parenting Teens in Tulsa.

Data Analysis

The research was based on nominal data which ordinarily precludes parametric measurement. However, placing questionnaire items in a Likert-type scale results in what can be considered interval level data which lends itself to parametric analysis. A parametric statistical test is dependent upon a number of assumptions about the subject population while nonparametric tests are not reliant on these same assumptions. Kerlinger (1986) reported that violation of the assumptions of normality, homogeneity of variance, continuity and equal intervals of measures, and independence of observations can be a serious problem; however, "these violations are not serious because the F and t tests are robust providing that the violations are not gross and multiple" (Kerlinger, 1986, p. 266). Unless there is sufficient indication that the population is considerably abnormal and heterogeneous, it is preferable to use a parametric test in

place of a nonparametric one. Finally, Kerlinger (1986) advised the use of parametric statistics such as analysis of variance routinely since tests such as the F test and t test are robust and are capable of operating even under assumption violations. Since the data conformed to these assumptions, statistical procedures used to analyze the data collected were correlation and analysis of variance (ANOVA). PART II for pregnant subjects was scored using dummy coding where a "1" was scored for all topics circled and a "0" was scored for all topics that were not circled. Additionally, Chronbach's alpha was used to measure reliability

According to Kerlinger (1986), having both experimental and non-experimental variables does not guarantee that those variables will be uncorrelated. Cone and Foster (1993) reported that a multivariate analysis of variance (MANOVA) is often used when multiple dependent variables are analyzed in order to reduce Type I errors, in order to decrease the possibility that at least one significant result may be based solely as a function of conducting so many analyses; then individual ANOVAs can be conducted in order to determine main effects. However, this logic was challenged by Huberty and Morris (1986) who asserted that MANOVA does not necessarily prevent and protect against Type I errors. Moreover, Huberty and Morris (1986) assert that the notion of controlling for Type I error is questionable since in nearly all instances, outcome variables are related.

According to Huberty and Morris (1986), MANOVA is appropriate when dependent variables are conceptually dependent, when conducting exploratory research, when previous univariate analysis has been utilized, and when determining equivalence between groups. When the dependent variables are conceptually related, ANOVA is the preferred method of analysis (Huberty & Morris, 1986). Furthermore, ANOVA and MANOVA address different research questions (Huberty and Morris, 1986). Research questions that call for multiple ANOVAs appertain to individual outcome variables whereas MANOVA is at least in part, designed to recognize underlying constructs of the research. Cone and Foster (1993) concur with Huberty and Morris and recommend ANOVA over MANOVA when investigating multiple dependent variables that are not conceptually related.

Analysis of variance was utilized to discriminate between the three trimesters as well as between adolescents and adults. Assumptions of ANOVA include homogeneity of variance and underlying normal

distribution (Cone & Foster, 1993). Due to the research design of the study, a convenience sample was used, thereby violating the assumption of random selection. Since there were unequal sample sizes in the study, a Duncan multi range post hoc test for unequal sample sizes was conducted (Cone & Foster, 1993). ANOVA was not used to distinguish differences between pregnant subjects and prenatal health care professionals because the questionnaires were not constructed in the same manner. Instead, those PART II items with significant findings for pregnant subjects were used to compare pregnant and professional subjects based on frequencies. Those topics of interest to pregnant subjects with significant results for PART II were compared to the timing of their discussion by the prenatal health care professional to determine congruence between the two groups.

The data met all of the assumptions of ANOVA including homogeneity of variance in groups, independence of observations, and normal distribution of the dependent variable. This results in a more conservative statistic that decreases the probability of a Type I error (Cone & Foster, 1993). Moreover, a significance level of $\alpha = .05$ or less was set to decrease the probability of a Type I error.

Limitations

Potential limitations of this methodology were the identification of ambiguous and erroneous relationship patterns which may have compounded the interpretation of findings from this study. Cause and effect were not defined so that specific issues could not be proven. Less control was exerted over the variables than with experimental research designs and thereby limited the researcher in data analysis (Isaac & Michael, 1995). The sample size for each group was small in relation to the number of items on the scale, however, access to eligible respondents was limited in smaller cities such as Stillwater, Bartlesville, and Tulsa. Additionally, the prenatal health care professional population was small making it impossible to separate them according to specific groups. Due to the fact that the research design was cross-sectional, it was not possible to determine developmental changes over the duration of pregnancy. Providers were not identified by pregnant subjects making it impossible to determine differences between private and public sectors who provide prenatal care. Finally, it is recognized that a self-report instrument carries with it the tendency of a respondent to select answers that reflect social desirability about oneself

(Cone & Foster, 1993). Due to the limited scope of this study, generalizability may be limited to the sample population.

Operational Hypotheses

The general hypothesis of this study was that due to the unique developmental tasks of each trimester, pregnant women will vary in the perceived value of prenatal education topics depending upon gestational stages as measured by the Pinkosky Prenatal Assessment Tool (PPAT). It was hypothesized that the PPAT would verify that pregnant women would vary in their perceptions of the value of prenatal education topics according to gestation. Additionally, it was believed that pregnant adolescents and adults would vary in their perceptions of the value of prenatal education topics. Furthermore, it was hypothesized that pregnant women would differ in their prenatal interests according to selected demographic variables. Finally, it was hypothesized that prenatal health care professionals would supply pertinent prenatal education at the optimal time of relevance. Moreover, it was believed that the PPAT would indicate that pregnant women who perceived their prenatal health care professional as supportive and valuable, would indicate a greater desire for acquiring additional prenatal education. Operational hypotheses are listed below.

In order to analyze Hypotheses I, III, and V, a one way analysis of variance (ANOVA) was conducted using a between subjects design. The single factor or independent variable was the pregnancy group which was comprised of four levels: first trimester, second trimester, third trimester, and teens (subjects between the ages of 12 and 19 regardless of gestation). The dependent variable was prenatal assessment and contained two levels: the developmental stage of pregnancy and prenatal interests. Significant dependent variables were then subjected to Duncan multi range post hoc analyses to determine where differences existed; the Duncan analysis was chosen because it is considered to be a 'middle ground' post hoc analysis.

Hypothesis I. ***Pregnant women will differ in their scores on their perceptions of the value of prenatal education topics by pregnancy groups as measured by the Pinkosky Prenatal Assessment Tool.***

The independent variable was the pregnancy group which had four levels: first trimester, second trimester, third trimester, and teen group. Teens, regardless of gestation, were placed in a separate group for comparison with the three trimesters of pregnancy. Due to the small sample size of the teen group (81), it was not possible to separate the teen group into trimesters. The dependent variable was comprised of two levels: the perceived value of prenatal education topics and the items measuring developmental stages of pregnancy. Scores for the sum of these items were computed.

The hypothesis was analyzed using analysis of variance (ANOVA) to detect between group differences among first, second, and third trimester respondents as well as pregnant teen respondents. The ANOVA procedure creates a "synthetic variable that combines the information in all the dependent variables that are included in the analysis, then analyzes the synthetic variable, and finally states the significance of main effects and interactions for that synthetic variable" (Cone & Foster, 1993, p. 187). A Duncan multi range post hoc analysis was used for all significant findings.

Hypothesis II. ***Pregnant women who report the prenatal healthcare professional as more supportive will score higher on their desire to learn than those who report the prenatal health care provider as less supportive as measured by the Pinkosky Prenatal Assessment Tool.***

Coefficients of correlation are used to denote relationships between variables. Kerlinger (1986) reports that many significant correlations are of low magnitude. An r value of less than .10 is not necessarily important, however when the N value is high, correlations of .20 or .30 are statistically significant. A significant correlation between variables is indicative of shared variance by those variables. A determination of correlation was made between having a prenatal health care professional who is perceived as supportive and a pregnant woman's desire to learn about prenatal education topics. Ten items included in the PPAT were examined to determine any association between the desire to learn and having a prenatal health care professional who is perceived as supportive. Perceived support and learning desire were specifically addressed in the PPAT. These items were compared to assess correlation between learning desire and perceived support. The Pearson product-moment correlation was used because it considered the systematic mean differences in the two sets of data (Cone & Foster, 1993).

Hypothesis III. ***Pregnant women will differ in their scores in their perceptions of the value of prenatal education topics according to selected demographic variables as measured by the Pinkosky Prenatal Assessment Tool.***

Independent variables were demographic variables consisting of race, income, marital status, and education; the dependent variable had two levels which were: (1) the interest in prenatal education topics; and (2) items measuring developmental stages of pregnancy. Age was previously examined by dividing the sample population into four groups of pregnant subjects which included a 'teen' group. The responses of pregnant women measured by PPAT were compared according to selected demographics. Although the PPAT for pregnant respondents had nominal data, a Likert scale was used so that data could be analyzed using parametric measures.

ANOVA was used to determine if other independent variables such as educational background, socioeconomic status, ethnicity, and marital status influence group differences; age was specifically addressed under Hypothesis V. This hypothesis was analyzed using the same statistical analysis described for Hypotheses I. ANOVA determined any significant main effects, explored the influence of various independent variables on group differences to determine any significant main effects. This was followed by Duncan post hoc analyses to determine specifically where differences exist.

Hypothesis IV. ***Prenatal healthcare professionals will supply pertinent prenatal education information at the optimal time of relevance as measured by the Prenatal Interest Tool portion of the Pinkosky Prenatal Assessment Tool.***

Part II of the PPAT for pregnant subjects asked participants to circle the prenatal topics of interest to them at that particular point in pregnancy. Then, the data were analyzed using ANOVA to determine significant differences between subjects according to first, second, and third trimesters. The PIT for prenatal health care providers differed from that administered to pregnant subjects in that providers were asked to report when each topic was introduced to their pregnant patients. Providers then reported the trimester in which each topic was discussed, however the professionals were not asked to differentiate between adolescents and adults. Many professionals circled multiple answers indicating that many topics were discussed more than once. This made it necessary to recode the responses for this

questionnaire in order to include multiple responses given by the professionals. Provider data were then analyzed using simple frequencies. Topics from Part II with significant ANOVA results for pregnant subjects were then compared with responses from the prenatal health care professionals for those same topics.. The primary two trimesters of choice concerning interest for each topic selected by pregnant subjects was then compared with the top two trimester choices selected by the professionals. Due to the difference in design between the Part II for pregnant woman and the PIT for prenatal health care professionals, no other analyses could be conducted.

Hypothesis V. Pregnant adolescents will score differently from pregnant adults in their perceptions of the value of prenatal education topics across all stages of pregnancy as measured by the Pinkosky Prenatal Assessment Tool.

This hypothesis was analyzed using the same statistical analysis described for Hypotheses I and III. ANOVA determined any significant main effects of age on the dependent variables. The independent variable in hypothesis V was age, specifically adolescents and adults in this case. Likewise, the dependent variables were items measuring the developmental tasks of pregnancy and the value in prenatal education topics; scores for the sum of these topics were computed. Because there were only two levels of the independent variable, a post hoc test was not necessary.

Summary

In order to ensure a supportive atmosphere that reduces anxiety, provides factual information, and focuses on current concerns, cooperation and effective communication between the pregnant woman and all members of the health care team is essential (Hassid, 1978). Educational content must be adapted to each individual client according to her particular circumstances so that teaching goals can be directed toward client needs at that particular time (Severson-DeMuth, 1989). When the learner is included as a partner in the learning process, success in achieving the educational task is more readily guaranteed (Dewey, 1916). Allowing the client to select the time for teaching has been found to be an effective method conducive to learning (Smith, 1987).

The primary purpose of this particular study was to determine if prenatal education needs change from one trimester to the next according to the developmental tasks of pregnancy (Hassid, 1978; Rubin, 1970; Tanner, 1969; Tanner, 1967). A secondary purpose was to determine if prenatal health care professionals are supplying pertinent information at the optimal time of relevance. The general hypothesis of the study was that due to the unique developmental tasks of each trimester, pregnant women will vary in the perceived value of prenatal education topics depending upon gestation as well as demographics. The researcher predicted that prenatal health care professionals would supply pertinent prenatal education at the optimal time of relevance. Finally, it was hypothesized that pregnant women who perceive their own client-professional relationship as rewarding and valuable, would indicate a greater desire for acquiring additional prenatal education.

Data were collected using a paper and pencil questionnaire called the Pinkosky Prenatal Assessment Tool (PPAT) adapted from the Schaefer and Manheimer (1960) Pregnancy Research Questionnaire, Tanner's (1967) structured interview format assessing the developmental tasks of pregnancy for Part I, and the Prenatal Interest Topics (PIT) by Freda and associates (1993) was adapted for Part II. A convenience cross-sectional sample was used with primigravidas; data analysis was conducted by using analysis of variance (ANOVA) with the Duncan post hoc test for detecting group differences on significant findings. Additionally, the PIT was administered to prenatal health care professionals and their responses were compared with those of pregnant subjects. The results from this study can be used to facilitate optimal prenatal health teaching at a time that is most appropriate according to the developmental stages of pregnancy.

CHAPTER IV

ANALYSIS OF DATA

Results

The general hypothesis of this study was that the perceptions of the value of prenatal education topics will vary depending upon the stages of pregnancy. Some factors that were likely to influence perceived value of prenatal education topics were demographic variables such as socio-economic status, educational background, ethnicity, marital status, and age. Furthermore, it was hypothesized that prenatal health care professionals would supply pertinent prenatal education information at the optimal time of relevance. Finally, it was hypothesized that pregnant women who perceived their own prenatal health care professional as supportive would indicate a greater desire for acquiring additional prenatal education.

Significant ANOVA Results for PPAT, Part I Items by Pregnancy Group

Table XII presents the analysis of Part I of the PPAT which produced significant ANOVA results by pregnancy group for six items. The teen group and first trimester group indicated that they believed that "prenatal education gets rid of all anxiety about labor and birth" whereas subjects in the second or third trimester tend to be less inclined to agree with the statement, $F = 3.14$, (3, 232), $p = .03$. Significant differences were found to be between the teen group and the second and third trimester groups. When responding to the statement, "I worry that having a baby will make me less attractive," there was a significant difference between the teen group who was more inclined to agree with the statement than those in the first, second, and third trimesters, $F = 4.17$, (3, 231), $p = .007$.

TABLE XII

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY PREGNANCY GROUP
n = 235

Item	Pregnancy Group	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Prenatal education gets rid of all anxiety about labor and birth.	First	2.54	ab	.702	3.14	3, 232	.03
	Second	2.82	b				
	Third	2.82	b				
	Teen	2.47	a				
I worry that having a baby will make me less attractive.	First	2.97	b	1.11	4.17	3. 232	.007
	Second	2.86	b				
	Third	2.84	b				
	Teen	2.38	a				
I worry about a great deal of pain during childbirth.	First	2.22	c	.654	7.66	3. 232	.0001
	Second	1.75	ab				
	Third	1.82	b				
	Teen	1.46	a				
I've been happy and cheerful during pregnancy.	First	1.89	a	.701	4.77	3. 232	.003
	Second	1.86	a				
	Third	1.91	a				
	Teen	2.33	b				
Before pregnancy, I was hoping to have a baby.	First	1.62	a	1.33	6.62	3. 232	.0001
	Second	1.75	a				
	Third	1.90	a				
	Teen	2.46	b				
My prenatal professional is sensitive to my needs.	First	1.43	ab	.461	3.06	3. 232	.03
	Second	1.33	a				
	Third	1.43	ab				
	Teen	1.67	b				

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

The teen group expressed the greatest concern about childbirth pain and the first trimester group was least concerned, $F = 7.66$, (3, 231), $p = .0001$. Differences were also discovered between the

first and third trimesters as well as between the first trimester and teen group, and between the third trimester and the teen group. Given the fact that adolescents are in the process of accomplishing the developmental tasks of adolescence in addition to the developmental tasks of pregnancy, they have not had the life experience to cope effectively with the impending pain associated with labor and birth. In contrast, women in the first trimester while having an awareness of childbirth pain, are less concerned than women in the third trimester who face imminent birth. Surprisingly, women in the second trimester expressed the greatest concern about childbirth pain.

All pregnant subjects agreed that they had been happy and cheerful during pregnancy, $F = 4.77$, (3, 321), $p = .003$, but they varied in the degree of happiness expressed. Significant differences were between the first trimester and the teen group, the second trimester and the teen group, and the third trimester and the teen group. The group expressing the most agreement with the statement were those subjects in the second trimester followed by first trimester subjects and third trimester subjects. Although teens expressed happiness, they were the least happy of all groups. Professionals often refer to the second trimester as the "tranquil trimester" because it is during this time, discomfort associated with the first trimester, such as nausea and vomiting, has subsided. Discomforts such as backache, frequency of urination, shortness of breath, and indigestion increase in the third trimester which may generate less happiness for these women. Therefore, it is understandable that women in the first and third trimesters feel less happy and cheerful than those in the second trimester of pregnancy. Despite the growing acceptance of pregnancy out of wedlock, American society continues to disapprove of adolescent pregnancy. Consequently, in addition to societal reproach, the pregnant teenager may face a plethora of problems such as interruption of her education, social isolation, societal bias, interruption of the developmental tasks of adolescence, and complications resulting from immature physical development (Adams et al., 1989). Therefore, it seems reasonable that adolescents are more reticent about pregnancy than adults.

Subjects in the first, second, and third trimesters reported they had been hoping to have a baby prior to pregnancy, $F = 6.62$, (3, 321), $p = .0001$. However, agreement with the statement diminished with increasing gestation so that third trimester subjects were less inclined to feel positively about a

planned pregnancy. Significant differences were between the first trimester and the teen group, the second trimester and the teen group, and the third trimester and the teen group. Adolescents were the least likely group to have planned the pregnancy which supports the research stating that teens are less inclined to plan intercourse and contraception which often leads to unplanned pregnancy (Adams et. al., 1989).

Finally, all subjects agreed that the prenatal health care professional was sensitive to their needs, $F = 3.06$, (3, 321), $p = .03$. Second trimester subjects reported the strongest support of this statement while adolescents were the least likely to agree with the statement. First and third trimester subjects were the same. Regarding professional sensitivity, differences lay between the second trimester and the teen group. As Enkin asserted in 1990, women who seek prenatal information are motivated by their desire for accurate information Additionally, many women actively participate with health care providers in order to make personal health decisions (Oakley & Houd, 1990). Moreover, Hassid (1978) agrees that cooperation and effective communication between the pregnant woman and the prenatal health care professional is essential to guarantee an auspicious environment that reduces anxiety, provides accurate information, and addresses current concerns. The findings of this study concerning prenatal health care provider satisfaction may be a reflection of this trend and could explain the fact that the women in the study were satisfied with their prenatal health care providers.

Significant ANOVA Results for Part II Items by Pregnancy Group

A total of 12 items were found to be significant for Part II of the PPAT (see Table XIII). Interest in anesthesia was the greatest for third trimester subjects, followed by second and first trimesters. The teen group expressed the least amount of interest in anesthesia, $F = 4.70$, (3, 232), $p = .003$. According to Duncan's multi range post hoc analysis, significant differences were between the first, second, and third trimester groups. With the event of impending birth, women in the second half of the pregnancy are naturally more concerned with any topic that is associated with labor or birth. According to Perry (1997), women in the third trimester of pregnancy are usually ready to mark the end of pregnancy and approach childbirth. Additionally, the woman in her last trimester of pregnancy often becomes concerned with the

'safe passage,' or an uneventful birth experience for herself and the baby (Patterson, Freese, & Goldenberg, 1990). Moreover, fears about pain and loss of control are important issues to her. Teens often do not plan for future events which may account for diminished interest in this topic. Additionally, since the teen group is not separated by trimester, it is possible that there is a greater number of adolescents in the first half of pregnancy which may account for their lack of interest.

TABLE XIII

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II
ITEMS BY PREGNANCY GROUP
n = 235

Item	Pregnancy Group	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Anesthesia	First	.41	a	.239	4.70	3, 232	.003
	Second	.55	b				
	Third	.63	c				
	Teen	.35	bc				
Contraception	First	.03	a	.120	5.49	3, 232	.001
	Second	.04	a				
	Third	.25	b				
	Teen	.19	b				
Breastfeeding	First	.41	a	.242	3.42	3, 232	.018
	Second	.65	b				
	Third	.63	c				
	Teen	.45	bc				
Cocaine/marijuana	First	.00	a	.028	3.10	3, 232	.027
	Second	.02	a				
	Third	.00	a				
	Teen	.08	b				
Exercise	First	.54	a	.228	6.79	3, 232	.0001
	Second	.63	bc				
	Third	.26	ab				
	Teen	.36	c				

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

(table continues)

TABLE XIII (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II
ITEMS BY PREGNANCY GROUP

Item	Pregnancy Group	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Fetal Growth and Development	First	.51	a	.239	3.55	3, 232	.015
	Second	.59	bc				
	Third	.31	ab				
	Teen	.41	c				
Danger Signs	First	.51	a	.230	3.06	3, 232	.029
	Second	.35	a				
	Third	.25	a				
	Teen	.44	b				
Cesarean Section	First	.11	a	.156	3.13	3, 232	.027
	Second	.12	a				
	Third	.31	b				
	Teen	.20	b				
When to Go to the Hospital	First	.22	a	.230	6.89	3, 232	.0001
	Second	.35	a				
	Third	.63	b				
	Teen	.44	b				
Onset of Labor	First	.22	a	.233	6.73	3, 232	.0001
	Second	.37	a				
	Third	.62	b				
	Teen	.54	b				
Sex During Pregnancy	First	.11	a	.184	4.56	3, 232	.004
	Second	.18	ab				
	Third	.25	b				
	Teen	.39	c				
Travel	First	.16	a	.146	3.23	3, 232	.023
	Second	.18	a				
	Third	.29	b				
	Teen	.10	a				

[d] Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

(table continues)

TABLE XIII (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II
ITEMS BY PREGNANCY GROUP

Item	Pregnancy Group	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Infant Care	First	.30	a	.241	4.05	3, 232	.008
	Second	.51	b				
	Third	.62	c				
	Teen	.41	c				
Medicines Used in Labor	First	.27	a	.233	3.59	3, 232	.015
	Second	.45	b				
	Third	.53	c				
	Teen	.31	bc				
Natural Childbirth	First	.24	a	.240	3.11	3, 232	.027
	Second	.43	b				
	Third	.41	b				
	Teen	.54	c				

Contraception was found to be of greatest interest to third trimester subjects, followed by the teen group, $F = 5.49$, (3, 321), $p = .001$. Significant differences were found between the teen group and the first and second trimester groups as well as between the third trimester group and the first and second trimester groups. The first and second trimester groups indicated very little interest in contraception, a fact that is not surprising that contraceptives are irrelevant to a pregnant woman in the first part of pregnancy. Conversely, a woman near term is expected to express greater interest in preventing a subsequent pregnancy in the near future. As for the teen group, it may be an encouraging sign that they indicate interest in preventing subsequent pregnancies.

Interest in cocaine/marijuana revealed significant findings, however most groups expressed little or no interest in the topic, $F = 3.10$, (3, 232), $p = .027$. Of the four groups, teens indicated the greatest interest although it was minuscule, nevertheless, this interest should be addressed. First trimester subjects

indicate the greatest interest in danger signs followed by teen subjects, $F = 3.06$, (3, 232), $p = .029$. The least amount of interest was expressed by women in the third trimester of pregnancy. Although the topics of danger and cocaine/marijuana provided significant findings by virtue of ANOVA, the Duncan post hoc analysis was unable to detect differences between the groups due to the fact that the group sample sizes were unequal and displayed wide variation in the group sizes.

All subjects expressed interest in breastfeeding with the greatest interest expressed by women in the second and third trimesters, $F = 3.42$, (3, 232), $p = .018$. For breastfeeding, differences were between the first and second trimesters, the first and third trimesters, and the second and third trimesters. These two trimesters are typically the period of time in which pregnant women begin to plan and prepare themselves for infant care and feeding (Perry, 1997). Consequently, it seems appropriate for women in these groups to indicate interest in breastfeeding at this time. The teen group additionally expressed an interest in breastfeeding, a surprising result given the number of adolescent mothers who bottle-feed their babies (Perry, 1997).

Predictably, third trimester subjects expressed the greatest interest in the Cesarean section, followed by the teen group, $F = 3.13$, (3, 232), $p = .027$. Significant differences were found to exist between the teen group and first and second trimester groups as well as between the third trimester group and the second and first trimester groups. The third trimester is the most likely period for the prenatal health care professional to determine that a Cesarean section is indicated; moreover, third trimester women are often told that a Cesarean section is always a possibility. These two factors probably account for increased interest at this time. Additionally, the fact that the pregnant adolescent's body is often physically immature may warrant the need for a Cesarean section, making this topic of more interest to the teen group.

Interest in fetal growth and development was highest during the second trimester, $F = 3.55$, (3, 232), $p = .015$, followed by those in their first trimester, and the teen group; third trimester subjects expressed the least interest in fetal growth and development. Significant differences were between the teen group and first and third trimesters, between the first and second trimesters, and between the second and third trimesters.

The topic of exercise divulged significant findings with the greatest interest expressed by those in the second trimester followed by first trimester subjects, $F = 6.79$, (3, 232), $p = .0001$. Differences were between the first and third trimesters, the second and third trimesters, the first trimester and teen group, and the second trimester and teen group. Interest declined with increasing gestation; teens indicated less interest in exercise than women in the first or second trimester but more interest than those in the third trimester of pregnancy. American society places value upon a healthy lifestyle which includes exercise. Since pregnancy is considered to be a condition of health, exercise in moderation is not only allowed but encouraged during pregnancy. Culpepper (1990) and Mittelmark (1991) found that many women who exercise on a regular basis are concerned about diminished physical fitness that may occur with pregnancy. Moreover, they recommend moderate aerobic exercise so long as it does not cause excessive maternal fatigue. Additionally, exercise has been shown to reduce common discomforts that accompany pregnancy (Ostgaard, 1994). With advancing pregnancy, discomfort increases making the woman in her third trimester less interested in exercise.

Topics concerning labor and birth were of greatest interest to women in their third trimester of pregnancy, followed by pregnant teens. Since labor and birth are proximate in the third trimester, these woman have greater interest and concern about those specific topics. Teen interest seems to indicate that pregnant adolescents are concerned about labor and birth. Topics with significant findings were "when to go to the hospital," $F = 6.89$, (3, 232), $p = .0001$, "onset of labor," $F = 6.75$, (3, 232), $p = .0001$, and "medicines used in labor," $F = 6.73$, (3, 232), $p = .015$. Analysis indicated differences between the first and third trimesters, the second and third trimesters, the first trimester and teen group, and the second trimester and teen group for the topics regarding the onset of labor and when to go to the hospital. Finally, differences were noted between the first trimester and the teen group for exercise and fetal growth and development.

Predictably, first trimester subjects have the least interest in topics related to labor and delivery followed by second trimester subjects. Third trimester subjects expressed the greatest interest in medicines in labor followed by second trimester subjects, and then teen subjects. Significant differences were found between the first, second, and third trimesters. Finally, third trimester subjects indicated greatest interest

in infant care, followed by second trimester, teens, and the first trimester group, $F = 4.05$, (3, 232), $p = .008$, with significant differences between the first, second, and third trimesters. Again, those women near term were more interested in topics that affect them in the near future than women who were in the early part of pregnancy. According to Tanner (1969; 1967) and Rubin (1970), the second trimester is the time in which the pregnant woman sees the fetus as a separate individual which accounts for the interest in infant care voiced by second trimester subjects.

Hypotheses

Hypothesis I. ***Pregnant women will differ on their scores in their perceptions of the value of prenatal education topics by pregnancy group as measured by the Pinkosky Prenatal Assessment Tool.***

Women in both the second and third trimesters of pregnancy were equally less positive that prenatal education eliminates anxiety about labor and birth than those women in the first trimester of pregnancy (see Tables XII and XIII). As the end of pregnancy approaches, a woman is more concerned with a fear of the unknown concerning labor and delivery. She may express concern about excessive labor pain, loss of control, or health and well-being for herself and the baby. Pregnant women hold these same concerns prior to the third trimester but can delay thoughts until a later date. By the end of pregnancy, it becomes apparent that these concerns must finally be addressed, causing increased anxiety for the pregnant woman (Patterson et al., 1990).

Summary Results of Analysis as Applied to Third Trimester

Unquestionably, third trimester subjects expressed greater concern about childbirth pain than those in the first or second trimester. This is not surprising given the fact that pregnant women, but especially primagravidas, are frequently bombarded by well-intentioned people or media presentations, each imparting their own stories of agonizing, painful labors causing the impending mother to fear childbirth pain to a greater extent. Each woman experiences and perceives pain uniquely, therefore it is not unusual for her fear and anxiety about pain during labor to overcome the coping skills that she may have learned in childbirth education classes (Wuitchik, Hesson, & Bakel, 1990).

Although all pregnant groups agreed that they were happy and cheerful during pregnancy, third trimester subjects were less inclined to agree with this statement than first and second trimester subjects. This could be due to the fact that a woman close to term is more physically uncomfortable than at previous times during pregnancy and is also concerned about impending labor and delivery. Consequently, she may feel that she is not always happy and cheerful. Third trimester subjects felt less attractive during pregnancy than second or first trimester subjects, a common reaction late in pregnancy when many women refer to themselves as "fat" or "large". Perry (1997) reported that pregnant women have a tendency to express greater negative sentiments about themselves as pregnancy advances, especially during the last trimester. All three trimesters agreed that they had been hoping to have a baby prior to pregnancy, however women in the third trimester were less positive about this statement than those women in the first or second trimesters. All groups felt that the prenatal health care professional was sensitive to their needs, however women in the first and third trimesters believed the professional to be less sensitive than women in the second trimester of pregnancy.

As anticipated, women in the third trimester of pregnancy expressed greater interest in topics related to labor, birth, and parenting (see Table XIII) than women in the first or second trimester of pregnancy. The topics concerning breastfeeding and infant care as well as contraception, were of greater interest to women in the third trimester of pregnancy than those women in the first or second trimester of pregnancy. Shoham-Yakubovich, Pliskin, and Carr (1993) reported similar results in that many third trimester women expressed concern about infant care and feeding. Third trimester subjects indicated greater interest in anesthesia, Cesarean section, when to go to the hospital, the onset of labor, and medicines used in labor than first or second trimester subjects. One of the greatest concerns for pregnant women is determining the onset of labor and when to go to the hospital. A woman often fears delivering a baby at home or in the car believing that she will be unable to determine that labor has started. The typical response given by childbirth educators, physicians, nurses, and mutligravidas to the question "how will I know when labor starts?" is usually "you'll know." This answer is disconcerting but nevertheless, there is no magic formula or answer for the question that meets with the pregnant woman's satisfaction.

In conclusion, data analysis revealed that women in the third trimester of pregnancy do feel less attractive because of pregnancy. They are less inclined to agree that the pregnancy was planned and less inclined to feel happy and cheerful than first or second trimester subjects. These women indicated less confidence that childbirth classes would reduce anxiety and saw the prenatal health care professional as less sensitive to their needs than women in the first or second trimester of pregnancy. Surprisingly, third trimester subjects expressed less fear than second trimester subjects but greater fear of childbirth pain than first trimester subjects. Predictably, third trimester subjects expressed greater interest in topics related to labor, birth, and parenting such as the onset of labor, when to go to the hospital, medications in labor, and infant care than did first or second trimester subjects. These analyses indicate that women in the third trimester of pregnancy are preparing for parenting and anatomical separation of the fetus and are more interested in topics related to labor, delivery, and parenting than women in the first or second trimester of pregnancy.

Summary Results of Analysis as Applied to Second Trimester

Although women in their first trimester of pregnancy indicated that childbirth education was effective in reducing anxiety about childbirth, women in both the second and third trimesters of pregnancy were equally less inclined to agree with the statement (see Table XII and XIII). Second trimester subjects were more concerned that pregnancy made them less attractive than first trimester subjects but were less concerned than third trimester subjects. Additionally, except for the teen group, second trimester subjects expressed the greatest fear of childbirth pain. Since second trimester subjects felt less attractive and expressed more fear of childbirth pain, it is possible that these women are beginning to view the fetus as a separate individual. Moreover, the second trimester woman is beginning to prepare herself for the actual anatomical separation that occurs with birth (Tanner, 1967).

The second trimester group expressed the greatest satisfaction with the sensitivity of the prenatal health care professional and expressed the greatest degree of happiness during pregnancy. Additionally, they expressed more agreement with the statement that they had been hoping to have a baby prior to pregnancy. These results support the notion that the second trimester is the "tranquil" time of pregnancy.

Based on these results, the second trimester woman appears to be quite content, has accepted to the idea that she is pregnant, and is beginning to see the fetus as an individual.

Analysis of Part II indicated that women in the second trimester of pregnancy had greater interest in the topics of breastfeeding, exercise, and fetal growth and development than women in the first or third trimesters of pregnancy (see Table XIII). According to Tanner (1969; 1967) and Rubin (1970), an interest in fetal growth and development is expected during the second trimester. An interest in exercise can be attributed to any trimester especially since modern women tend to be more concerned for a healthy lifestyle; however, exercise is frequently presented in childbirth classes for those women in their first trimester of pregnancy. The second trimester is often referred to as 'tranquil' since somatic complaints such as nausea and fatigue have dissipated and other discomforts like backaches and urinary frequency are not yet problematic. Klein (1997) supports this finding, stating that the first trimester discomforts are resolving while it is still too early to focus on labor and birth. Therefore, the logical explanation for the second trimester subjects' interest in exercise may be that she feels good and desires a healthy lifestyle. Moreover, many women are more concerned with having a healthy lifestyle during pregnancy for the well-being of the fetus, which may be another sign that indicates acceptance of the pregnancy.

Second trimester subjects expressed additional interest in six topics from Part II. Their interest in anesthesia, Cesarean section, when to go to the hospital, the onset of labor, infant care, and medicines used in labor was greater than first trimester subjects but less than third trimester subjects. Although these are topics of interest to third trimester women, these results are not surprising. These results seem to indicate that women in the second trimester of pregnancy are in the process of separating the fetus as an individual and preparing for the birth event. Tanner (1969; 1967) and Rubin (1970) asserted that as the second trimester woman begins to individuate the fetus as separate from herself, she begins to contemplate those things associated with birth. Second trimester subjects expressed less interest in danger signs than first trimester subjects but greater interest than third trimester subjects. Topics of little or no interest to second trimester subjects were contraception and cocaine/marijuana.

Data analysis revealed that women in the second trimester of pregnancy did not see themselves as less attractive as a result of pregnancy but instead were the happiest and most cheerful, hoping for a baby

prior to pregnancy. This group additionally expressed the greatest degree of satisfaction with the sensitivity of the prenatal health care professional. These results support the old notion that the second trimester of pregnancy is a tranquil time of life. In contrast, analysis revealed that second trimester subjects feared childbirth pain more than subjects in the first or third trimester of pregnancy. The reason for this particular finding is unclear without additional research.

Women in the second trimester of pregnancy were found to have the greatest interest in breastfeeding, exercise, and fetal growth and development. These results support the research presented by Tanner (1969; 1967) and Rubin (1970), stating that women become interested in the baby's development during the second trimester after their own somatic complaints such as nausea, have subsided. Other areas of interest were the topics of anesthesia, Cesarean section, when to go to the hospital, the onset of labor, medicines used in labor and delivery, and infant care. These interests seem to imply that second trimester subjects are beginning to see the fetus as an individual and are therefore beginning to plan for the birth of the baby.

Summary Results of Analysis as Applied to First Trimester

Upon examination of Part I data analysis, it was noted that first trimester subjects responded differently to the significant items than second or third trimester subjects (see Table XII). Women in their first trimester of pregnancy were the most likely to believe that childbirth education reduces the anxiety accompanying labor and birth; therefore first trimester subjects understandably feared childbirth less than women in either their second or third trimesters of pregnancy. According to Tanner (1969; 1967) and Rubin (1970), first trimester women must first accept the reality of pregnancy, therefore childbirth classes and labor pain are in the distant future and cannot realistically be addressed during the first trimester. Lumley (1980) concurs adding that the fetus is seen as unreal. Additionally, first trimester subjects did not agree that pregnancy made them feel less attractive and they expressed more agreement with the statement, "before I became pregnant, I was hoping to have a baby" than second or third trimester subjects. These results may indicate that women in the first trimester of pregnancy do not think of the

fetus as an individual because the birth event is in what often seems like the distant future, therefore making it seem unreal.

In contrast, first trimester subjects indicated that they were not as happy and cheerful as second trimester subjects but were more happy and cheerful than third trimester subjects. The first trimester of pregnancy is often a time plagued with somatic complaints such as nausea and vomiting, fatigue, mood fluctuations, and frequent urination making it an unpleasant time of life for many pregnant women (Perry, 1997). These discomforts dissipate usually by the beginning of the second trimester which may account for the finding that first trimester subjects are less happy and cheerful than second trimester subjects. First trimester subjects, along with third trimester subjects, expressed less satisfaction with prenatal health care professional sensitivity. While both groups believed the professional to be sensitive to their needs, they did not see the professional to be as sensitive as second trimester subjects.

According to analysis of Part II, first trimester subjects indicated greater interest in danger signs than second or third trimester subjects (see Table XIII). The first trimester is the period of organagenesis (the formation of fetal organs) and as such, has many potential dangers such as drug interactions which may be teratogenic especially during the first trimester when fetal development takes place. While some dangers still exist following the first trimester, it is safer after the first trimester when the fetus is completely formed.

The topics of exercise and fetal growth and development were of greater interest to first trimester subjects than third trimester subjects but were of less interest compared to second trimester subjects. First trimester subjects expressed less interest than second or third trimester subjects in the remaining topics found to be significant. Those topics were anesthesia, contraception, breastfeeding, when to go to the hospital, infant care, the onset of labor, medicines used in labor, and infant care. Since these topics concern labor, birth, postpartum, and parenting, they are understandably of less importance to women in the beginning of pregnancy. The final significant topic was cocaine/marijuana about which first trimester subjects expressed no interest.

In conclusion, analysis of the data revealed that women in the first trimester of pregnancy believed that childbirth education reduced anxiety about labor and birth, held the lowest level of fear

related to childbirth, and believed that pregnancy did not make them unattractive. These women expressed the highest level of agreement that they had hoped for a baby prior to pregnancy and believed their prenatal health care professional to be sensitive to their needs. They did indicate that they did not feel as happy and cheerful during pregnancy as those women in the second trimester which is most likely attributable to somatic discomforts accompanying the first trimester of pregnancy.

First trimester subjects were interested in only a few topics, the greatest interest being that of danger signs. Exercise and fetal growth and development were of value as well but interest in these two topics was not as high as for women in the second trimester of pregnancy. The remaining topics were those that held the least interest for first trimester subjects. Those topics included anesthesia, contraception, breastfeeding, when to go to the hospital, onset of labor, medicines used in labor, and infant care; there was no interest in cocaine/marijuana. These findings seem to indicate that first trimester subjects do not think of the fetus as a separate entity because during early pregnancy, the baby seems imaginary. Furthermore, first trimester subjects were less happy and cheerful during this time, possibly due to discomforts often found during this period of pregnancy. These results show that first trimester women are in the process of accepting the pregnancy itself as demonstrated by their focus on items such as danger signs and exercise, as well as the lack of interest in topics related to labor, birth, and parenting. In conclusion, analysis of the data demonstrated differences in the perceived value of prenatal education interests according to pregnancy stages, thereby supporting Hypothesis I.

Hypothesis II. ***Pregnant women who report the prenatal healthcare professional as more supportive will score higher on their desire to learn than those who report the prenatal health care provider as less supportive as measured by the Pinkosky Prenatal Assessment Tool.***

The issue was to determine if there was a correlation between having a prenatal health care professional who is perceived as supportive and having a greater desire to learn about prenatal education. Eight items included in the PPAT, Part I, were examined to determine any association between the desire to learn and having a prenatal health care professional who is perceived as supportive. Perceived support and learning desire is specifically addressed in the PPAT. These items were compared to assess

correlation between learning desire and perceived support (see Table XIV). The Pearson product-moment correlation compared the systematic mean differences in the two sets of data (Cone & Foster, 1993).

TABLE XIV

CORRELATION BETWEEN PRENATAL HEALTH CARE PROFESSIONAL SATISFACTION AND LEARNING DESIRE
n = 239

	Provider Satisfaction			
Learning Desire	I have confidence in my prenatal health care professional.	My prenatal health care professional meets all of my educational needs about pregnancy.	My prenatal health care professional seems too busy to answer my questions.	My prenatal care professional always answers my questions to my satisfaction.
Childbirth education is the most important thing I can do for my baby's health.	.115*	.191**	-.175**	.274**
I always enjoy learning about pregnancy and my baby.	.133*	.107*	-.198**	.228**
Everything I learn is important.	.118*	.151**	-.108*	.222**
I have been reading and/or going to classes to find answers that concern me.	.296**	.219**	-.188**	.271**

* p value of .05
** p value of .01

Positive, significant correlations were obtained between the four items that addressed satisfaction with the prenatal health care professional and the four items that assessed learning desire (see Table XIV). A positive correlation between variables indicates that as one variable increases, so does the other. Likewise, a decrease in one variable is met with a decrease in the other variable. The statement, "I have

confidence in my prenatal health care professional" was positively correlated with "Childbirth education is the most important thing I can do for my baby's health," $p = .05$, "I always enjoy learning about pregnancy and my baby," $p = .05$, "Everything I learn is important," $p = .05$, and "I have been reading and/or going to classes to find answers that concern me," $p = .01$.

A positive correlation was found between the statement, "My prenatal health care professional meets all of my educational needs about pregnancy" and the four learning desire items that state "Childbirth education is the most important thing I can do for my baby's health," $p = .01$, "I always enjoy learning about pregnancy and my baby," $p = .01$, "Everything I learn is important," $p = .05$, and "I have been reading and/or going to classes to find answers that concern me," $p = .01$. Finally, a positive correlation existed between the statement, "My prenatal care professional always answers my questions to my satisfaction" and the items measuring learning desire stating, "Childbirth education is the most important thing I can do for my baby's health," $p = .01$, "I always enjoy learning about pregnancy and my baby," $p = .01$, "Everything I learn is important," $p = .05$, and "I have been reading and/or going to classes to find answers that concern me," $p = .01$.

A negative significant finding was noted between the statement assessing provider satisfaction that declares, "My prenatal health care professional seems too busy to answer my questions" and statements referring to learning desire that declare "Childbirth education is the most important thing I can do for my baby's health," $p = .05$ "I always enjoy learning about pregnancy and my baby," $p = .05$, "Everything I learn is important," $p = .01$, and "I have been reading and/or going to classes to find answers that concern me," $p = .05$.

The results indicate that as provider satisfaction increases so does the desire to learn about pregnancy, birth, and infant care. Likewise, as provider satisfaction decreases, the desire to attain supplementary knowledge about pregnancy, birth, and infant care declines. Those subjects with low provider satisfaction were less inclined to seek greater knowledge about pregnancy, birth, and infant care as noted by the negative correlation between learning desire and the item stating, "My prenatal health care provider seems too busy to answer my questions." These findings may be reflective of a particular mindset demonstrated by the pregnant subjects. However, the findings may indicate that pregnant women

who are satisfied with the prenatal health care provider seek supplementary knowledge and hence may be better prepared to cope with labor, birth, and parenting than those women who are not satisfied with the provider.

Furthermore, the findings support the notion supplied by Dewey (1916) that a partnership between teacher and learner enhances learning. Additionally, Severson-Demuth (1989) asserted that a basic component of the client education process includes the evolution of a positive and beneficial relationship with the client; if the relationship component of the exchange is insensitive, disrespectful, or the information is inappropriate for the developmental level, client education is not effective. Based on the results of this particular hypothesis, the exchange theory is supported as well as Hypothesis II.

Hypothesis III. ***Pregnant women will differ on their scores in their perceptions of the value of prenatal education topics according to selected demographic variables as measured by the Pinkosky Prenatal Assessment Tool.***

Analysis of Demographic Variables

The primary purpose of this research was to examine the prenatal education interests of pregnant women according to developmental stages of pregnancy. However, a secondary interest was to determine if differences in prenatal education interests existed according to selected demographic variables such as educational background, income, marital status, and race. Unquestionably, these particular demographic variables are often related and confound each other. Educational background is confounded by race, age, marital status, and income; each variable is likewise confounded by the others. This limitation is recognized and acknowledged as such, however, the significant ANOVA findings as a result of analysis of the demographic variables are worthy of consideration when addressing developmental stages of pregnancy.

Significant ANOVA Results by Educational Background

PPAT, Part I Results

Age, and possibly income and race are recognized as confounding variables in this particular analysis. Nevertheless, eight items from Part I were found to have significant ANOVA results by

education (see Table XV). When responding to the statement, "I worry that having a baby will make me less attractive," significant differences were found between the middle school group and both the college and advanced education groups, $F = 3.17$, (5, 232), $p = .009$. Middle school subjects were more likely to agree with the statement than those with more education. Furthermore, the greater the level of education, the more likely the subject was to disagree with the statement except for those with advanced education. Moreover, age seems to be a confounding variable in this analysis.

TABLE XV

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY EDUCATION
$n = 237$

Item	Education [a]	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
I worry that having a baby will make me less attractive.	MS	2.13	a	1.22	3.17	5, 232	.009
	SHS	2.46	ab				
	HS	2.58	abc				
	SC	2.67	abc				
	CD	3.17	c				
	ADV	2.94	bc				
Before pregnancy, I was hoping to have a baby.	MS	2.75	b	1.27	6.83	5, 232	.0001
	SHS	2.69	b				
	HS	1.93	a				
	SC	1.93	a				
	CD	1.52	a				
	ADV	1.56	a				

a MS = Middle School
SHS = Some High School
HS = High School Diploma
SC = Some College
CD = College Degree
ADV =Advanced Degree

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

(table continues)

TABLE XV (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY EDUCATION

Item	Education [a]	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
My prenatal health care professional is sensitive to my needs.	MS	1.25	a	.460	3.08	5, 232	.01
	SHS	1.78	b				
	HS	1.51	ab				
	SC	1.46	ab				
	CD	1.37	ab				
	ADV	1.19	a				
I worry about having a great deal of pain during childbirth.	MS	1.13	a	.672	3.97	5, 232	.002
	SHS	1.56	ab				
	HS	1.71	bc				
	SC	1.65	bc				
	CD	2.13	c				
	ADV	2.00	bc				
I would recommend my prenatal health care professional to someone else.	MS	1.38	a	.651	4.47	5, 232	.001
	SHS	1.92	b				
	HS	1.33	a				
	SC	1.40	a				
	CD	1.28	a				
	ADV	1.25	a				
I have been reading and/or going to classes to find answers that concern me.	MS	1.50	a	.814	2.44	5, 232	.036
	SHS	1.85	a				
	HS	1.76	a				
	SC	1.67	a				
	CD	1.26	a				
	ADV	1.63	a				

a MS = Middle School
SHS = Some High School
HS = High School Diploma
SC = Some College
CD = College Degree
ADV =Advanced Degree

e Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

(table continues)

TABLE XV (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY EDUCATION

Item	Education [a]	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
I have confidence in my prenatal health care professional.	MS	1.13	a	.346	2.66	5, 232	.023
	SHS	1.54	b				
	HS	1.31	ab				
	SC	1.39	ab				
	CD	1.17	ab				
	ADV	1.13	a				
I've been happy and cheerful during pregnancy.	MS	2.00	a	.671	4.71	5, 232	.0001
	SHS	2.50	b				
	HS	1.96	a				
	SC	1.98	a				
	CD	1.76	a				
	ADV	1.81	a				

When asked to respond to the statement, "I worry about a great deal of pain," middle school subjects were the most concerned about pain accompanying childbirth followed by those with some high school education, some college education, and those subjects with a high school diploma, $F = 3.97$, (5, 232), $p = .002$. In comparison, subjects with a college degree were the least worried about childbirth pain, followed by subjects with advanced education. Significant differences were located between the middle school group and the high school, some college, college degree, and advanced education groups. In addition, differences were noted between the some high school group and the college degree group.

Middle school subjects responded the same as those subjects having advanced education for having the most confidence in the prenatal health care professional, followed closely by those with a college degree, $F = 2.66$, (5, 232), $p = .023$. While all subjects regardless of educational background responded positively to the item regarding confidence in the prenatal health care professional, subjects

with a high school diploma, some college, and some high school (respectively) were less confident than subjects with middle school, advanced education, and college degree backgrounds. According to Duncan's multi range post hoc test, significant differences were between the some high school group and the middle school and advanced education groups.

Subjects responded less favorably to the item stating, "I've been happy and cheerful during pregnancy" regardless of educational background, $F = 4.71$, (5, 232), $p = .0001$. Subjects with a college degree indicated a greater amount of happiness during pregnancy; those subjects with some high school expressed the lowest level of unhappiness. Significant differences were found to exist between the some high school group and all of the other educational groups.

The statement "before pregnancy, I was hoping to have a baby" attempts to determine whether subjects had planned their pregnancies, $F = 6.83$, (5, 232), $p = .0001$. Differences were found between the middle school group and the high school, some college, college degree, and advanced education groups as well as between the some high school groups and the high school, some college, college degree, and advanced education groups. Subjects with a middle school education were not likely to have planned the pregnancy, nor were those with some high school. Furthermore, the greater the level of education achieved, the more likely the subject was to have planned for a baby with the exception of those with advanced education. This group agreed with the statement more than subjects with some college but less than those with a college degree.

All subjects believed the prenatal health care professional to be sensitive to their needs, $F = 3.08$, (5, 232), $p = .01$. However, differences were noted between the some high school group and the middle school and advanced education groups. Subjects with advanced education were more likely to believe that the professional was sensitive to their needs, followed by middle school subjects. The group least likely to recognize the professional as sensitive were the subjects with some high school education. Subjects from all educational backgrounds indicated that they would recommend their prenatal health care professional to someone else, $F = 4.47$, (5, 232), $p = .001$. The group most likely to recommend their health care professional were those subjects with advanced educational degrees. They were followed by subjects with a baccalaureate degree, a high school diploma, a middle school education, and some college

respectively. The group least likely to recommend the prenatal health care professional was the group with some high school education. Significant differences existed between the some high school group and all of the other educational groups.

All subjects agreed with the statement, "I have been reading and/or going to classes to find answers that concern me." However, those with a college degree were more inclined to seek additional resources followed by middle school subjects, subjects with advanced educational background, some college, and a high school diploma respectively, $F = 2.44$, (5, 232), $p = .036$. The group with some high school education was the least likely to seek self help regarding issues of concern. Although ANOVA results were significant for this item, a Duncan multi range post hoc analysis was unable to detect differences between the groups due to the fact that the group sample sizes were unequal and displayed wide variation in the group sizes.

The group expressing the most positive views overall were those subjects with a college degree. They were happier during pregnancy, more likely to have planned the pregnancy, and were the most likely to seek additional information about topics of concern. These subjects were the least concerned about childbirth-associated pain and firmly disagreed that pregnancy made them less attractive. Subjects with advanced education were more inclined to express satisfaction with the prenatal health care provider than the other groups. They were the most likely to perceive the professional as sensitive to their needs, recommend the provider to someone else, and have confidence in the provider. One possible explanation for this finding may be that those subjects with higher levels of education are more likely to view the professional as an intellectual equal and may therefore feel more at ease. These subjects were less inclined to seek additional self help information than the group having a college degree or the middle school group, but they were more likely to seek supplementary information than the remainder of the groups.

Middle school subjects were also the most likely group to express confidence in the prenatal health care professional (the same as those with advanced education). Gong (1990) reported that middle school adolescents tend to respect authority figures more than older adolescents, a fact that may explain the middle school group's confidence in the prenatal health care professional. A surprising result is the

fact that the middle school group, while less likely to seek additional information than the college degree subjects, were more inclined to seek supplementary facts than the remaining groups. As anticipated, middle school subjects were more likely to feel unattractive during pregnancy, to worry about childbirth associated pain, and were less likely to have planned pregnancy than the other educational groups. However, it is noteworthy to realize that age was likely a confounding variable in this particular analysis given the young age of middle school subjects.

Subjects with a high school diploma were primarily in the middle range on all items that displayed significant results as was the group with some college education. Those subjects with some high school education were the most negative group overall. Although the middle school group was the most likely to fear childbirth pain and the least likely to plan pregnancy, those with some high school education surpassed the middle school group as being more likely to fear the pain of childbirth and less likely to have planned pregnancy than the rest of the education categories. Finally, this group was the least likely to express confidence in the prenatal health care professional, the least likely to recommend the professional to someone else, least likely to read for additional learning, and the least likely to view the professional as sensitive to their needs.

Part II Results

Analysis of Part II data revealed significant results for four topics (see Table XVI). Middle school subjects indicated the greatest interest in emotions followed by those with some high school, those with some college, those with a high school diploma, and those with advanced education, $F = 2.25$, (5, 232), $p = .05$. Signficant differences were noted between the middle school group and the college degree and advanced education groups. Subjects with a college degree demonstrated the least interest in emotions but expressed greater interest in medicines used in labor than the remaining groups, $F = 2.39$, (5, 232), $p = .04$. Those subjects with some college expressed almost the same degree of interest in labor medications as the college degree group, followed by those with a high school diploma, and the middle school and advanced education groups (the same). The subjects with the least interest in medicines in labor was the group with some high school education. While significant ANOVA results

were obtained for the topic of medicines in labor, the Duncan multi range post hoc analysis was unable to detect differences between the groups due to the fact that the group sample sizes were unequal and displayed wide variation in the group sizes.

TABLE XVI

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II ITEMS BY EDUCATION
n = 237

Item	Education[a]	Mean	Duncan Post Hoc[d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Emotions	MS	.50	b	.201	2.25	5, 232	.05
	SHS	.38	ab				
	HS	.29	ab				
	SC	.33	ab				
	CD	.13	a				
	ADV	.19	a				
Working	MS	.00	a	.212	4.08	5, 232	.001
	SHS	.46	b				
	HS	.24	ab				
	SC	.46	b				
	CD	.5	b				
	ADV	.06	a				

a MS = Middle School
SHS = Some High School
HS = High School Diploma
SC = Some College
CD = College Degree
ADV =Advanced Degree

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

(table continues)

TABLE XVI (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II ITEMS BY EDUCATION
$n = 237$

Item	Education [a]	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Medicines in Labor	MS	.38	a	.233	2.39	5, 232	.04
	SHS	.21	a				
	HS	.39	a				
	SC	.49	a				
	CD	.50	a				
	ADV	.38	a				
Smoking	MS	.00	a	.109	3.17	5, 232	.009
	SHS	.23	b				
	HS	.20	ab				
	SC	.07	ab				
	CD	.02	ab				
	ADV	.13	ab				

a MS = Middle School
SHS = Some High School
HS = High School Diploma
SC = Some College
CD = College Degree
ADV = Advanced Degree

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

Interest was not high in the topic of smoking, however interest generally decreased with increasing levels of education, $F = 3.17$, (5, 232), $p = .009$. However, there are two exceptions. The group with advanced education was more interested in smoking than the groups with some college and with a college degree. The middle school subjects had no interest in smoking. Significant differences were found between the middle school and some high school groups. Additionally, the middle school group understandably had no interest in working which was closely followed by the groups with advanced education and a high school diploma respectively. Interest in working was considerably higher in those with some high school and some college (the same), with the highest interest expressed by the college

degree group. The significant differences were found to exist between the middle school group and the some high school, some college, college degree, and advanced education groups.

Subjects with a baccalaureate degree expressed the greatest interest in the topics of medicines in labor and working during pregnancy. They were the least interested in emotions and while more interested in smoking than middle school subjects, they were less interested than the remainder of the groups according to education. Middle school subjects expressed the greatest interest in emotions and were less interested in medicines in labor than the college degree group but more interested than the remaining groups. They expressed no interest in smoking and working.

Those subjects with advanced education expressed less interest in medicines in labor than the college degree group but more interest than the remaining groups (the same as middle school subjects). Subjects with advanced education were less likely to express interest in emotions and working than most of the other groups. The group with some high school education expressed the greatest level of interest in smoking as well as a high level of interest in emotions and working; they were least interested in medicines of labor. Subjects with some college education expressed the most interest in medicines in labor and working second only to those with a college degree. The group with a high school diploma expressed a higher level interest in smoking than the remaining groups (except for those with some high school) and otherwise indicated primarily moderate interest in the other topics.

Significant ANOVA Results by Income

Part I Results

Income unquestionably is likewise subject to the confounding variables of age, race, and education. Subjects were divided into low ($19,999/year or less), middle($20,000-59,999) and high income ($60,000 and above) groups for the purpose of analyzing data (see Table XVIII). Those subjects in the high income group were more worried that having a baby would make them less attractive than the middle income group but less worried than the low income group, $F = 3.89$, (2, 213), $p = .02$; significant differences were found between the low and middle income groups. Both middle and high income subjects were equally happier during pregnancy than the low income group, $F = 8.29$, (2, 213), $p = .0001$,

with differences between the low income group and the middle and high income groups. Significant differences were found between the high income subjects and middle and low income subjects; high income subjects were more likely to have planned the pregnancy than the middle and low income groups respectively, $F = 12.19$, (2, 213), $p = .0001$. One explanation for this finding could be that the high income group is financially more secure and thus may feel prepared to begin a family.

TABLE XVII

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY INCOME
$n = 215$

Item	Income	Mean	Mean Square Error	Duncan Post Hoc [d]	F Value	Degrees of Freedom	p Value
I worry that having a baby will make me less attractive.	Low Middle High	2.48 2.94 2.75	1.097	a b ab	3.89	2, 213	.02
I've been happy and cheerful during pregnancy.	Low Middle High	2.27 1.81 1.81	.862	b a a	8.29	2, 213	.0001
Before pregnancy, I was hoping to have a baby.	Low Middle High	2.45 1.81 1.52	1.306	b a a	12.19	2, 213	.0001
My prenatal health care professional is sensitive to my needs.	Low Middle High	1.57 1.53 1.27	.474	b b a	3.39	2, 213	.04
My prenatal health care professional always answers my questions to my satisfaction.	Low Middle High	1.49 1.86 1.29	.581	ab b a	3.71	2, 213	.03
I have been reading and/or going to classes to find answers that concern me.	Low Middle High	1.80 1.67 1.31	.817	b b a	4.89	2, 213	.008

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

Significant differences were noted between middle and high income groups regarding professional sensitivity, however, low income subjects were more likely to be satisfied that the prenatal health care professional answered their questions than middle income subjects but were less satisfied than high income subjects, $F = 3.71$, (2, 213), $p = .03$). Subjects had a propensity to believe the prenatal health care professional to be less sensitive to their needs as the level of income declined; that is, high income subjects were more likely to view the professional as sensitive, followed by middle and low income subjects, $F = 3.71$, (2, 213), $p = .03$. Likewise, the higher the income, the greater the tendency to seek supplemental information about issues of concern, $F = 4.89$, (2, 213), $p = .008$, with significant differences found to exist between the high income group and the low and middle income groups.

Subjects with middle and high income were found to be happier during pregnancy, more likely to have planned the pregnancy, and more likely to believe the prenatal health care professional to be sensitive to their needs than low income subjects. Moreover, middle and high income subjects were also more likely to pursue additional knowledge about issues of concern and more likely to believe that pregnancy does not diminish attractiveness than subjects with low income. Finally, it is worth noting that both high and low income subjects were more likely to be satisfied with the prenatal health care professional's ability to answer questions than subjects in the middle income range.

Part II Results

Although interest was low overall, low income subjects expressed greater interest in cocaine/marijuana, $F = 3.19$, (2, 213), $p = .043$, and social services, $F = 12.31$, (2, 213), $p = .0001$, (see Table XVIII). Despite significant findings following ANOVA for the topic of cocaine/marijuana, a Duncan multi range post hoc analysis was unable to detect differences between the groups due to the fact that the group sample sizes were unequal and displayed wide variation in the group sizes. Both middle and high income subjects expressed no interest in cocaine/marijuana. However, there was slight interest expressed by middle income subjects in regard to social services but no interest on the part of high income subjects with differences noted between the low income group and the middle and high income groups. The high income group expressed more interest in stress than the middle income group, but less interest

than the low income group, $F = 3.53$, (2, 213), $p = .031$; significant differences were between the low and middle income groups. Finally, the middle income group was more interested in exercise than the low income group but less interested than the high income group, $F = 4.84$, (2, 213), $p = .009$, with differences noted between the low income group and the middle and high income groups..

The low income group was found to have the greatest interest in cocaine/marijuana, social service, and stress. Interest in social service and stress seems appropriate since the poor often experience a great deal of stress due to lack of financial resources and therefore frequently turn to social services for assistance. The high and middle income groups were more interested in exercise than the low income group.

TABLE XVIII

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II
ITEMS BY INCOME
$n = 215$

	Income	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Cocaine/Marijuana	Low	.05	a	.018	3.19	2, 213	.043
	Middle	.00	a				
	High	.00	a				
Exercise	Low	.29	a	.237	4.84	2, 213	.009
	Middle	.49	b				
	High	.52	b				
Social Service	Low	.27	b	.109	12.31	2, 213	.0001
	Middle	.09	a				
	High	.00	a				
Stress	Low	.51	b	.238	3.53	2, 213	.031
	Middle	.30	a				
	High	.42	ab				

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

Significant ANOVA Results by Marital Status

Part I Items

Data analysis of Part I by marital status revealed 15 items of significance (see Table XIX). When responding to the statement, "prenatal education gets rid of all anxiety about labor and birth," subjects who were single, living with a partner (SLWP) were the most likely to agree, $F = 5.12$, (2, 236), $p = .007$. Significant differences were noted to exist between the SLWP subjects and the married and single subjects. The single subjects were less likely to agree while married subjects were the least likely to agree that prenatal education eliminates anxiety about labor and birth.

TABLE XIX

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I ITEMS BY MARITAL STATUS
$n = 238$

Item	Marital Status	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Prenatal education gets rid of all anxiety about labor and birth.	Single	2.59	a	.698	5.12	2, 236	.007
	Married	2.78	a				
	SLWP[a]	2.16	b				
I worry that having a baby will make me less attractive.	Single	2.43	a	1.104	8.08	2, 236	.0001
	Married	2.94	b				
	SLWP	2.26	a				
I always enjoy learning about pregnancy and my baby.	Single	1.32	a	.280	4.25	2, 236	.015
	Married	1.15	ab				
	SLWP	1.00	b				

a SLWP = Single Living With Partner

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

(table continues)

TABLE XIX (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY MARITAL STATUS

Item	Marital Status	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Before pregnancy, I was hoping to have a baby.	Single	2.69	b	1.178	26.33	2, 236	.0001
	Married	1.62	a				
	SLWP [a]	1.68	a				
I would make any sacrifice necessary for the sake of my baby's health-.	Single	1.37	a	.298	4.37	2, 236	.014
	Married	1.21	ab				
	SLWP	1.00	b				
My prenatal health care professional meets all of my educational needs about pregnancy.	Single	1.67	a	.504	3.22	2, 236	.042
	Married	1.59	a				
	SLWP	1.21	a				
I would like my mother or another woman to help take care of the baby.	Single	1.80	a	.962	7.39	2, 236	.001
	Married	2.30	b				
	SLWP	1.84	a				
I worry about having a great deal of pain during childbirth.	Single	1.61	ab	.684	5.91	2, 236	.003
	Married	1.89	b				
	SLWP	1.32	a				
How will the baby act when you pick it up, hold it, and play with it.	Single	1.56	a	.626	3.29	2, 236	.039
	Married	1.29	a				
	SLWP	1.53	a				
I would recommend my prenatal health care professional to someone else.	Single	1.69	a	.670	5.78	2, 236	.004
	Married	1.36	ab				
	SLWP	1.16	b				
Everything I learn is important.	Single	1.25	a	.270	3.03	2, 236	.05
	Married	1.14	ab				
	SLWP	.95	b				
I have been reading and/or going to classes to find answers that concern me.	Single	1.83	a	.814	4.23	2, 236	.016
	Married	1.49	a				
	SLWP	1.84	a				

a SLWP = Single Living With Partner

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

TABLE XIX (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY MARITAL STATUS

Item	Marital Status	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
My prenatal health care professional always answers my questions to my satisfaction.	Single Married SLWP	1.64 1.45 1.16	a ab b	.565	3.84	2, 236	.023
I've been happy and cheerful during pregnancy.	Single Married SLWP	2.41 1.83 1.74	b a a	.649	15.03	2, 236	.0001
I always do everything my prenatal health care professional recommends.	Single Married SLWP	1.82 1.66 1.37	a ab b	.50	3.41	2, 236	.035

Single subjects were slightly more inclined to agree that they worry that pregnancy makes them less attractive than the SLWP group; however married subjects were the least likely to worry about attractiveness during pregnancy, $F = 8.08$ (2, 236), $p = .0001$, with signficant differences between the married group and the SLWP and single groups. All three groups were concerned about childbirth pain, with a significant difference noted between the SLWP and married subjects, yet single subjects were more prone to express concern than single subjects who in turn, were more concerned than the married group, $F = 5.91$, (2, 236), $p = .003$. One explanation for these results might be the presence of a stable mate to provide support may diminish the fear of childbirth pain and reduce concern about attractiveness during pregnancy.

All subjects agreed that they did everything their prenatal health care professional recommended, $F = 3.40$, (2, 236), $p = .035$, the significant differences were between the single and SLWP groups. All subjects also agreed that the prenatal health care professional met all of their educational needs, $F = 3.22$, (2, 236), $p = .042$; however, due to unequal sample sizes, the Duncan multi range post hoc test was unable to detect exactly where differences were. The SLWP group indicated the highest level of compliance with

the prenatal health care professional, followed by married subjects, and single subjects respectively. All three groups implied satisfaction with the prenatal health care professional as evidenced by their agreement with the statements, "my prenatal health care professional always answers my questions to my satisfaction," $F = 3.84$, (2, 236), $p = .023$, and "I would recommend my prenatal health care professional to someone else," $F = 5.78$, (2, 236), $p = .004$. Significant differences for both of these items were noted to exist between the single and SLWP subjects. Married subjects were more satisfied than single subjects but less satisfied than SLWP subjects.

Analysis of the data revealed that married subjects had hoped for a baby prior to pregnancy more than SLWP subjects, $F = 26.33$, (2, 236), $p = .0001$, with significant differences between the single group and the married and SLWP groups. Single subjects were the least likely group to have planned a baby prior to pregnancy. Significant differences were found between the single subjects and the married and SLWP subjects for happiness during pregnancy; however, married subjects were more inclined to report feeling happy and cheerful during pregnancy than single subjects but less happy and cheerful than SLWP subjects, $F = 15.03$, (2, 236), $p = .0001$. Differences in postpartum care needs were found to be between the married group and the single and SLWP groups with the single group indicating greater preference for having a mother or another woman help with infant care than the SLWP group; the married group expressed the least interest, $F = 7.39$, (2, 236), $p = .001$. When asked how the baby would respond to being picked up, held and played with, the married group responded that the baby would be happy and content while the other two groups agreed that the baby would have little response until it was older, $F = 3.29$, (2, 236), $p = .039$; due to unequal sample sizes however, the Duncan multi range post hoc test was unable to detect where differences lay between groups. All three groups indicated strong agreement with the statement, "I would make any sacrifice necessary for the sake of my baby's health." Differences were between the SLWP and single group with the SLWP group specifying the greatest degree of agreement, followed by the married group, and finally the single group respectively, $F = 4.37$, (2, 236), $p = .014$.

The three groups all displayed interest in learning during pregnancy. The married group agreed that they enjoyed learning about the pregnancy and baby at a higher level of interest than the single group

but lower than the SLWP group, $F = 4.25$, (2, 236), $p = .015$, with significant differences between the SLWP and single groups. Married subjects expressed the greatest interest in seeking supplementary information about issues of concern followed by the single group, and the SLWP group respectively, $F = 4.23$, (2, 236), .016, however because there were unequal sample sizes, the Duncan multi range post hoc test was unable to detect where differences lay between groups. Finally, all subjects agreed that everything they learned about pregnancy and the baby is important with significant differences between the single and SLWP groups. However, the greatest interest was held by the SLWP group who was more interested than the married group who in turn, was more interested than the single group, $F = 3.03$, (2, 236), $p = .05$.

In American society, having a baby under the condition of marriage is considered to be the normal and expected standard. Therefore, it seems reasonable to predict that married subjects would indicate the greatest level of agreement with the PPAT items. However, this was not the case. SLWP subjects were happy and cheerful during pregnancy, enjoyed learning about pregnancy and the baby, were satisfied and compliant with the prenatal health care professional, and were willing to make any sacrifice needed for the health of the baby, more so than either married or single subjects. In contrast, single subjects were the least likely to agree with the aforementioned items.

In summary, the SLWP group was more likely to believe that childbirth education would eliminate anxiety about birth, that pregnancy would make them less attractive, and also feared childbirth pain more than the single group while the married group was the most likely to disagree. Conversely, married subjects had hoped for a baby prior to pregnancy and engaged in self help activities more than the SLWP and single subjects respectively. The single group was the most likely to desire help from a mother figure than the SLWP or the married group.

Part II Results

Regarding marital status and the topics of AIDS, $F = 3.88$, (2, 236), $p = .022$ and alcohol, $F = 4.98$, (2, 236), $p = .008$, interest was quite low; however, single subjects indicated the greatest interest, followed by married subjects, and finally the SLWP group (see Table XX). Due to unequal sample sizes,

the Duncan multi range post hoc test was unable to detect where differences lwere between groups for the topic of AIDS. For alcohol, differences were noted to lie between the single and SLWP groups. Married subjects indicated interest in bottle-feeding but their interest was less than single subjects and greater than SLWP subjects, $\underline{F} = 7.81$, (2, 236), $\underline{p} = .001$, with differences noted between the single group and the married and SLWP groups. Interest in infant care, $\underline{F} = 3.67$, (2, 236), $\underline{p} = .027$ was greater in married subjects followed by single and SLWP subjects respectively, with differences between the single subjects and married and SLWP subjects. Interest in breastfeeding, $\underline{F} = 4.05$, (2, 236), $\underline{p} = .019$, was likewise greatest in married subjects followed by single and SLWP subjects, however due to unequal sample sizes, the Duncan multi range post hoc test was unable to detect where differences lay between groups for the topic of AIDS.

TABLE XX

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II[d]
ITEMS BY MARITAL STATUS
$\underline{n} = 238$

Item	Marital Status	Mean	Duncan Post Hoc[d]	Mean Square Error	F Value	Degrees of Freedom	p Value
AIDS	Single	.07	a	.028	3.88	2, 236	.022
	Married	.008	a				
	SLWP[a]	.00	a				
Alcohol	Single	.13	ab	.058	4.98	2, 236	.008
	Married	.03	ab				
	SLWP	.00	a				
Smoking	Single	.23	b	.107	8.37	2, 236	.0001
	Married	.05	a				
	SLWP	.21	b				
Infant care	Single	.44	b	.245	3.67	2, 236	.027
	Married	.53	b				
	SLWP	.21	a				

a SLWP = Single Living With Partner

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

(table continues)

TABLE XX (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II [d]
ITEMS BY MARITAL STATUS

Item	Marital Status	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Bottle feeding	Single	.44	b	.197	7.81	2, 236	.001
	Married	.23	a				
	SLWP [a]	.11	a				
Anesthesia	Single	.37	a	.243	4.66	2, 236	.01
	Married	.57	a				
	SLWP	.42	a				
Cocaine/marijuana	Single	.06	ab	.028	5.32	2, 236	.006
	Married	.00	a				
	SLWP	.11	b				
Hygiene	Single	.13	a	.069	3.16	2, 236	.044
	Married	.04	a				
	SLWP	.11	a				
Breast feeding	Single	.44	a	.244	4.05	2, 236	.019
	Married	.62	a				
	SLWP	.42	a				
Sex in Pregnancy	Single	.41	b	.178	9.81	2, 236	.0001
	Married	.16	a				
	SLWP	.21	a				
Social Services	Single	.28	b	.114	13.57	2, 236	.0001
	Married	.05	a				
	SLWP	.26	b				

a SLWP = Single Living With Partner

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

SLWP subjects expressed more interest in anesthesia than married subjects but less interest than the single group, $F = 4.66$, (2, 236), $p = .01$, however because the sample sizes were unequal, the Duncan multi range post hoc test was unable to detect where differences lay between groups. Very little interest was noted in either cocaine/marijuana, $F = 5.32$, (2, 236), $p = .006$, (differences were between the single and married group), or hygiene, $F = 3.16$, (2, 236), $p = .044$. Differences between groups for hygiene

and married group), or hygiene, $F = 3.16$, (2, 236), $p = .044$. Differences between groups for hygiene were not detected by the Duncan multi range post hoc test due to unequal sample sizes. However, the SLWP group expressed the greatest interest in cocaine/marijuana followed by the single group; the married group had no interest in this particular topic. The single group indicated the greatest interest in hygiene and sex during pregnancy, followed by the SLWP and the married group respectively. The Duncan multi range post hoc analysis detected that significant differences were between the SLWP group and the single and married groups.

Subjects indicated the most interest in the topics of anesthesia, breastfeeding, bottle-feeding, and infant care, with married subjects indicating the greatest level of interest in all of the above except bottle-feeding. Interestingly, these topics of great interest are all related to the third trimester of pregnancy according to Tanner (1969) and Rubin (1970). Concerning the remaining topics, although data analysis provided significant results, very little interest was indicated by any subjects regarding the topics of AIDS, alcohol, cocaine/marijuana, and hygiene. Due to the potential effect of AIDS, alcohol, cocaine, and marijuana upon the fetus, expressed interest in these topics are nevertheless noteworthy.

Significant ANOVA Results by Race

Part I Results

All subjects had a propensity to assume that prenatal education has the ability to reduce anxiety about labor and birth, $F = 2.69$, (3, 217), $p = .047$; however, due to unequal sample sizes, the Duncan multi range post hoc test was unable to detect differences between the groups. Nevertheless, black subjects were the most likely to believe that childbirth education could reduce anxiety, followed by other races (Hispanic, Asian, and others), whites, and American Indians respectively (see Table XXI). White subjects were less likely to feel happy and cheerful during pregnancy than American Indians, but were happier than other races, $F = 5.79$, (3, 217), $p = .001$, with significant differences noted between the black and other races groups. Blacks were the least likely to be happy and cheerful during pregnancy. Likewise, in planning pregnancy, differences were noted between the black and other groups. Whites

were less likely to have planned pregnancy than American Indians, but more likely than other races. Blacks were the least likely to have planned for a baby prior to pregnancy.

TABLE XXI

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I ITEMS BY RACE [d]
n = 220

Item	Race	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Prenatal education gets rid of all anxiety about labor and birth.	Indian	2.79	a	.680	2.69	3, 217	.047
	Black	2.31	a				
	White	2.72	a				
	Other	2.67	a				
I've been happy and cheerful during pregnancy.	Indian	2.00	ab	.698	5.79	3, 217	.001
	Black	2.51	b				
	White	1.95	ab				
	Other	1.56	a				
I would like my mother or another woman to help take care of the baby.	Indian	1.93	a	.979	3.76	3, 217	.012
	Black	1.64	a				
	White	2.22	a				
	Other	1.89	a				
How will the baby act when you pick it up, hold it, and play with it?	Indian	1.57	a	.650	2.64	3, 217	.05
	Black	1.74	a				
	White	1.35	a				
	Other	1.33	a				
Before pregnancy, I was hoping to have a baby.	Indian	1.93	ab	1.342	4.86	3, 217	.003
	Black	2.64	b				
	White	1.92	ab				
	Other	1.44	a				
Who will help you with the baby?	Indian	1.86	a	.625	3.08	3, 217	.029
	Black	1.64	a				
	White	1.96	ab				
	Other	2.44	b				

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

Black subjects were the most likely group to desire a mother or another woman to help with the newborn, $F = 3.76$, (3, 217), $p = .012$. Following blacks, other races desired a mother or another woman

to help with the newborn more so than American Indians; whites were the least likely to seek help from a mother figure. Due to unequal sample sizes, the Duncan multi range post hoc test was unable to detect differences between the groups.

When asked who would help with the newborn, significant differences were found between the other group and the black and Indian groups. Black subjects preferred their mothers, while American Indians and whites preferred the father of the baby, $F = 3.08$, (3, 217), $p = .029$. Other races tended to lean toward seeking help from a friend. Subjects were asked, "how will the baby act when you pick it up, hold it, and play with it?" Although ANOVA detected significant findings, the Duncan multi range post hoc test was unable to detect differences between groups due to unequal sample sizes, $F = 2.64$, (3, 217), $p = .05$. White and other races responded that the baby would be happy and content while American Indians and blacks replied that the baby would have little reaction until it was older.

According to the findings, black subjects had a tendency to feel less happy and cheerful during pregnancy and were less likely to have planned pregnancy than the other three groups. They also were more likely to believe that childbirth education eliminates anxiety that accompanies impending birth than the other groups. Additionally, blacks seemed to prefer help from their mothers following birth than the remaining three groups which is in keeping with the matriarchal structure of the black family.

In contrast, white subjects were the least likely to believe that childbirth education eliminated childbirth anxiety and preferred postpartum assistance from the father of the baby. The other race group was found to be the happiest during pregnancy and was more likely to have planned pregnancy than the other three groups. Additionally, the other race was more inclined to seek postpartum aid from either the father of the baby or a friend.

Part II Results

When analyzed by race, results from Part II presented significant findings for topics associated with risk factors (see Table XXII). Black subjects indicated more interest in bleeding than white subjects but less than American Indian subjects; other race subjects had no interest in bleeding, $F = 3.89$, (3, 217), $P = .01$; significant differences were noted to exist between the other race group and the black group.

Very little interest was displayed in cocaine/marijuana, however blacks held greater interest in the topic than whites while American Indians and other races indicated no interest. Due to unequal sample sizes, the Duncan multi range post hoc test was unable to detect differences between groups.

TABLE XXII

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II ITEMS BY RACE [d]
n = 230

Item	Race	Mean	Duncan Post Hoc [d]	Mean Square Error	F Value	Degrees of Freedom	p Value
Bleeding	Indian	.36	b	.132	3.89	3, 217	.01
	Black	.28	b				
	White	.13	ab				
	Other	.00	a				
Cocaine/marijuana	Indian	.00	a	.026	3.54	3, 217	.02
	Black	.10	a				
	White	.013	a				
	Other	.00	a				
HIV Test	Indian	.07	b	.043	5.21	3, 217	.002
	Black	.00	a				
	White	.00	a				
	Other	.00	a				
Medicine in Pregnancy	Indian	.57	b	.207	2.71	3, 217	.05
	Black	.18	a				
	White	.31	ab				
	Other	.22	a				
Sex in Pregnancy	Indian	.14	a	.182	4.05	3, 217	.008
	Black	.46	b				
	White	.22	ab				
	Other	.11	a				

d Means with a common letter for an item do not have significant differences using Duncan's test $\alpha = .05$.

Although significant findings were noted regarding the HIV test, only American Indians indicated a small degree of interest in this topic; the other three racial groups had no interest, $F = 5.21$, (3, 217), $p = .002$. Differences were found between the Indian group and the black, white, and other race

groups. White subjects were more likely to indicate interest in medicines in pregnancy than other races but less interest than American Indians, $F = 2.71$, (3, 217), $p = .05$, with differences found between the Indian group and the other race and white groups. Black subjects indicated the least interest in medicines in pregnancy. Finally, the white group was more inclined to express interest in sex during pregnancy than American Indians but less inclined to express interest than the black group; the other race group expressed the least interest in sex during pregnancy, $F = 4.05$, (3, 217), $p = .008$; differences were found between the black group and the Indian and other race groups.

Analysis by race indicated significant findings on topics related to behaviors associated with higher risk especially during pregnancy. Although both topics demonstrated significant findings, little interest was noted in the topics of cocaine/marijuana and HIV test. American Indians indicated the most interest in bleeding while blacks indicated the most interest in sex during pregnancy. Whites expressed moderate interest in sex during pregnancy and medicines in labor while other races indicated some interest in medicines in pregnancy.

Data analysis did validate the presence of differences in prenatal education interests according to the demographic variables, thereby supporting the hypothesis. However, the presence of confounding variables must be considered in the practical application of the findings.

Hypothesis IV. ***Prenatal healthcare professionals will supply pertinent prenatal education information at the optimal time of relevance as measured by the Prenatal Interest Tool portion of the Pinkosky Prenatal Assessment Tool.***

Prenatal health care professionals were only given the PIT to complete however, the professionals were instructed to respond to the instrument according to trimester but not according to age. Therefore, no data exists that indicate the point at which prenatal health care professionals address the common childbirth education topics for pregnant adolescents. Data with significant results from Part II of the PPAT for pregnant subjects according to trimesters were compared with PIT scores obtained from prenatal health care professionals. Both professional and pregnant women's scores were analyzed according to frequencies which were converted into percentages and then compared for congruence (see Table XXIII).

Comparison of Part II/PIT Scores Between Pregnant and Professional Subjects

Part II topics with significant ANOVA results from the PPAT for pregnant women were exclusively used for comparison between pregnant subjects and prenatal health care professionals. Prenatal health care professionals were in agreement with pregnant subjects on 7 out of 15 topics; that is, health care professionals introduced those seven topics during the same trimester that pregnant subjects expressed interest in them. Those topics were "anesthesia," "breastfeeding," "danger signs," "when to go to the hospital," "onset of labor," "natural childbirth," and "sex during pregnancy." The majority of both pregnant and professional subjects agreed that the topics of "anesthesia," "breastfeeding," "when to go to the hospital," "onset of labor," "natural childbirth," and "sex in pregnancy" should be presented primarily during the third trimester, with the second choice being in the second trimester (see Table XXIII).

TABLE XXIII

COMPARISON OF PART II/PIT SCORES FOR CONGRUENCE BETWEEN PRENATAL HEALTH CARE PROFESSIONALS AND PREGNANT WOMEN

$n_{group} = 239$; $n_{provider} = 54$

	Groups			
Topics	First Trimester	Second Trimester	Third Trimester	Do Not Discuss
Anesthesia		b y	a x	
Breastfeeding	y	b y	a x	
Natural Childbirth		b y	a x	
Infant Care		b	a x	y

a Highest Rate of Interest Among Pregnant Subjects

b Second Highest Rate of Interest Among Pregnant Subjects

x Majority Response of Prenatal Health Care Professionals; duplication of letter indicates equal scores in each area

y Second Most Frequent Response of Prenatal Health Care Professionals; duplication of letter indicates equal scores in each area.

(table continues)

TABLE XXIII (continued)

COMPARISON OF PART II/PIT SCORES FOR CONGRUENCE BETWEEN PRENATAL HEALTH CARE PROFESSIONALS AND PREGNANT WOMEN

$n_{group} = 239$; $n_{provider} = 54$

	Groups			
Topics	First Trimester	Second Trimester	Third Trimester	Do Not Discuss
Cocaine/Marijuana	x	b	y	y
When Does Labor Start		b y	a x	
Medicines in Labor	y	b	a x	y
Exercise	b x	a		y
Contraception	b		a x	y
When to Go to the Hospital		b y	a x	
Travel	y	b y	a x	y
Cesarean Section		b	a x	y
Danger Signs	a x	b y		
Sex in Pregnancy	y	b y	a x	y
Fetal Growth & Development	x	a y	b	

a Highest Rate of Interest Among Pregnant Subjects

b Second Highest Rate of Interest Among Pregnant Subjects

x Majority Response of Prenatal Health Care Professionals; duplication of letter indicates equal scores in each area

y Second Most Frequent Response of Prenatal Health Care Professionals; duplication of letter indicates equal scores in each area.

Five topics, those of "contraception," "Cesarean section," "infant care," "medicines in labor," and "travel," elicited partial agreement between pregnant and professional subjects. Pregnant women and prenatal health care professionals agreed that "contraception," "Cesarean section," "infant care," "medicines in labor," and "travel" should be primarily presented during the third trimester. However,

disagreement in the secondary preferences were noted between the professionals and the pregnant women. Pregnant women indicated secondary interests in "Cesarean section," "infant care," "medicines in labor," and "travel" during the second trimester of pregnancy, while the prenatal health care professionals' second choice was "I do not discuss this topic." Moreover, pregnant women indicated secondary interest in contraception during the first trimester. The second choice given by prenatal health care professionals was "I do not discuss this topic."

No agreement existed between prenatal health care professionals and pregnant subjects for the remaining three topics of "exercise," "fetal growth and development," and "cocaine/marijuana." Pregnant subjects, regardless of age, expressed very little interest in "cocaine/marijuana." Only second trimester subjects indicated interest in this topic. Prenatal health care professionals' primary preference to discuss "cocaine/marijuana" was during the first trimester.

Their secondary response was "I do not discuss this topic" or they elected to present the topic in the third trimester of pregnancy. Pregnant women expressed primary interest in "exercise" during the second trimester, however the secondary choice was to introduce "exercise" during the first trimester of pregnancy. Professionals' primary choice was to discuss "exercise" during the first trimester while their secondary response was "I do not discuss this topic."

Finally, "fetal growth and development" was primarily discussed by prenatal health care professionals during the first trimester, followed by discussion during the second trimester. Conversely, pregnant women indicated the greatest level of readiness to discuss fetal growth and development was during the second trimester as Tanner (1969) and Rubin (1970) proposed. The secondary time of interest for pregnant women was during the third trimester.

In summary, an examination of the pregnant subjects' interest in prenatal education topics and the timing of the prenatal professionals' presentation of those topics are not always in agreement. Timing is a critical factor to consider; allowing the client to choose the proper time for teaching has been found to facilitate learning (Smith, 1987). Moreover, Dewey (1916) postulated that including the learner as a partner in the teaching-learning circumstances enhances the accomplishment of the learning the task at hand.

In summary, it was noted that professionals and pregnant subjects agreed with the timing of seven topics which are "anesthesia." "danger signs," "breastfeeding," "when to go to the hospital," "when does labor start," "natural childbirth," and "sex in pregnancy." Moreover, both pregnant and professional subjects agreed with the primary timing of presenting "contraception," "Cesarean section," "infant care," "medicines in labor," and travel." Despite the congruence concerning these topics, they disagreed with the secondary timing of these same topics with the prenatal health care professionals responding, "I do not discuss this topic" for all subjects in this group of topics. Finally, pregnant and professional subjects displayed no agreement on the remaining topics of "fetal growth and development," "exercise," and "cocaine/marijuana." Because prenatal health care professionals were in agreement with pregnant subjects for only seven topics, this Hypothesis was not supported.

Hypothesis V. Pregnant adolescents will score differently from pregnant adults in their perceived value of prenatal education topics across all stages of pregnancy as measured by the Pinkosky Prenatal Assessment Tool.

Part I Results

In order to examine the responses of pregnant adolescents, the PPAT was analyzed by pregnancy group and by age. Analysis of Part I by pregnancy group revealed that the teen group was more inclined to believe that childbirth classes reduced anxiety about childbirth, $F = 3.14$, (3, 232), $p = .03$, than women in the first, second, or third trimester of pregnancy (see Table XII). Pregnant adolescents reported the highest level of fear concerning childbirth pain, $F = 7.66$, (3, 232), $p = .0001$, and were more concerned that pregnancy caused them to be unattractive than the first, second, or third trimester subjects, $F = 4.17$, (3, 232), $p = .007$. Since many adolescent girls may feel ambivalent about pregnancy, they may deny the pregnancy which may result in a negative influence on the body image. This in turn can result in decreased nutritional intake to prevent weight gain (Gong, 1990). Not only did adolescents feel that the prenatal health care professional was less sensitive to their needs, $F = 3.06$, (3, 232), $p = .03$, they also reported feeling less happy during pregnancy, $F = 4.77$, (3, 232), $p = .003$, and less likely to plan the pregnancy, $F = 6.62$, (3, 232), $p = .0001$.

When analyzed according to age, 10 items from Part I were found to be signficant (see Table XXIV). Teens were more inclined to believe that prenatal education reduced anxiety about labor and birth than adults, $F = 10.91$, (1, 229), $p = .02$.. Teens also were less likely to agree that they were happy during pregnancy, $F = 14.73$, (1, 229), $p = .0001$, and had less desire for a baby than adults, $F = 20.00$, (1, 229), $p = .0001$. Additionally, teens expressed more concern that pregnancy would diminish their attractiveness than adults, $F = 10.91$, (1, 229), $p = .001$, and believed that a newborn would have little reaction until it was older, $F = 5.51$, (1, 229), $p = .0001$. In comparison, adults believed that the newborn would be happy and content to be held.

TABLE XXIV

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY AGE
$n = 230$

Item	Age	Mean	Mean Square Error	F Value	Degrees of Freedom	p Value
Prenatal education gets rid of all anxiety about labor and birth-SD	Adult Teen	2.75 2.48	.712	5.41	1, 229	.021
I worry that having a baby will make me less attractive.	Adult Teen	2.87 2.38	1.129	10.91	1, 229	.001
A woman should be very careful about what she does during pregnancy for fear the baby may be hurt.	Adult Teen	1.46 1.27	.390	4.79	1, 229	.03
Every pregnant woman is scared and worried.	Adult Teen	2.06 1.79	.820	4.67	1, 229	.032
I've been happy and cheerful during pregnancy.	Adult Teen	1.89 2.33	.691	14.73	1, 229	.0001
I have been reading and/or going to classes to find answers that concern me.	Adult Teen	1.57 1.83	.831	4.08	1, 229	.05

(table continues)

TABLE XXIV (continued)

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART I
ITEMS BY AGE
n = 230

Item	Age	Mean	Mean Square Error	F Value	Degrees of Freedom	p Value
How will the baby act when you pick it up, hold it, and play with it?	Adult Teen	1.33 1.59	.641	5.51	1, 229	.02
I would recommend my prenatal health care professional to someone else.	Adult Teen	1.38 1.64	.683	5.17	1, 229	.024
Before pregnancy, I was hoping to have a baby.	Adult Teen	1.75 2.46	1.301	20.00	1, 229	.0001
My prenatal health care professional is sensitive to my needs.	Adult Teen	1.40 1.68	.463	8.52	1, 229	.004

Pregnant adolescents indicated a greater level of agreement than adults with the statement that every pregnant woman is scared and worried, $F = 4.67$, (1, 229), $p = .032$. Moreover, adolescents felt more strongly that a woman must be very careful during pregnancy for fear of hurting the baby than did adult women, $F = 4.79$, (1, 229), $p = .03$. Finally, pregnant adolescents were more likely to believe that the prenatal health care professional was less sensitive to their needs than adults, $F = 8.52$, (1, 229), $p = .004$, consequently, teens were less likely to recommend the prenatal health care professional to someone else, $F = 5.17$, (1, 229), $p = .024$. Additionally, teens were less likely to seek supplementary information about issues of concern than adult pregnant women, $F = 4.08$, (1, 229), $p = .05$. The pregnant adolescent's attitude toward the prenatal health care professional could be due to the fact that the professional is an authority figure and as such, may cause the teen more reticence in relating to her provider.

Part II Results

When comparing PIT items by age, teens were found to have greater interests in cocaine/marijuana, $F = 8.36$, (1, 229), $p = .004$, natural childbirth, $F = 6.83$, (1, 229), $p = .01$, and sex during pregnancy, $F = 10.16$, (1, 229), $p = .002$ than pregnant adults (see Table XXV). Adolescents expressed less interest in anesthesia, $F = 5.25$ (1, 229), p .004, breastfeeding, $F = 4.32$, (1, 229), $p = .034$, and travel, $F = 5.88$, (1, 229), $p = .02$, than the adult group. Although pregnant adolescents indicated more interest in cocaine/marijuana according to analyses by pregnancy group and by age, it must be noted that this interest while present, was minute.

TABLE XXV

SIGNIFICANT ANOVA RESULTS FOR PPAT, PART II
ITEMS BY AGE
$n = 219$

Item	Age	Mean	Mean Square Error	F Value	Degrees of Freedom	p Value
Anesthesia	Adult Teen	.55 .36	.243	5.25	1, 229	.004
Breastfeeding	Adult Teen	.59 .44	.246	4.32	1, 229	.039
Cocaine/marijuana	Adult Teen	.0067 .074	.029	8.36	1, 229	.004
Natural Childbirth	Adult Teen	.37 .54	.240	6.83	1, 229	.01
Sex in Pregnancy	Adult Teen	.19 .38	.186	10.16	1, 229	.002
Travel	Adult Teen	.23 .099	.146	5.88	1, 229	.02

According to analysis of Part II by pregnancy group, very little overall interest was expressed in the topic of cocaine/marijuana, $F = 3.10$, (3, 232), $p = .027$; however, the adolescent group displayed greater interest in this topic than subjects in the first, second, or third trimesters (see Table XIII). Teens expressed greater interest than women in the first or second trimester in the topics of when to go to the hospital, $F = 6.89$, (3, 232), $p = .0001$, Cesarean section, $F = 3.13$, (3, 232), $p = .027$, the onset of labor, $F = 6.73$, (3, 232), $p = .0001$, and contraceptives, $F = 5.49$, (3. 232), $p = .001$, but they were less interested in those topics than third trimester subjects.

The adolescent group indicated greater interest than the third trimester group in the topics of exercise, $F = 6.79$, (3, 232), $p = .0001$, fetal growth and development, $F = 3.55$, 3, 232), $p = .015$, infant care, $F = 4.05$, (3, 232), $p = .008$, and medicines used in labor and delivery, $F = 3.59$, (3, 232), $p = .015$, but they were less interested than the first and second trimester groups. Adolescents were more interested in breastfeeding than the first trimester group but less interested than the second and third trimester groups, $F = 3.42$, (3, 232), $p = ..018$. Finally, the adolescent group was more interested in danger signs than the second and third trimester groups but less interested than the first trimester group, $F = 3.06$, (3, 232), $p = .029$. Pregnant adolescents indicated the least interest in anesthesia, $F = (3, 232), 4.70$, $p = .003$.

In summary, data analysis indicates that pregnant adolescents have the greatest interest in natural childbirth, sex during pregnancy, topics related to labor and delivery, and some minor interest in cocaine/marijuana. Additionally, the results present some disturbing yet not surprising information about pregnant adolescents. Teens are more inclined to fear childbirth pain, are worried about the baby during pregnancy, are generally scared and worried, and are less likely to seek out additional information about matters of concern than adult pregnant women.

Furthermore, pregnant adolescents indicate that they are not as happy and cheerful during pregnancy as adults and are more concerned about their appearance. Adolescents tend to worry about their appearance and want to fit in; pregnancy often results in social isolation because the girl looks different and she frequently sees herself as unattractive and "fat" instead of pregnant (Stenberg & Blinn,

1993). Finally, pregnant adolescents are less likely to view the prenatal health care professional as sensitive to her needs (Drake, 1996).

In light of these findings, it is clear that prenatal health care professionals must take a more active role in providing optimal prenatal care for the pregnant adolescent. She has concerns and fears that are frequently unspoken and are therefore not addressed. Therefore, the professional has a responsibility to be aware of these issues and provide a warm, therapeutic, and non-judgmental environment for the pregnant adolescent to facilitate her adaptation to pregnancy and parenthood.

Summary

Summary of Results According to Trimester

Topics concerning labor and birth were of greatest interest to women in their third trimester of pregnancy, followed by pregnant teens. Teen interest seems to indicate that pregnant adolescents, regardless of gestation, are concerned about labor and birth. Predictably, first trimester subjects have the least interest in topics related to labor and delivery followed by second trimester subjects. The second trimester is the time in which the pregnant woman sees the fetus as a separate individual which accounts for the interest in infant care voiced by second trimester subjects.

Data analysis revealed that women in the third trimester of pregnancy feel less attractive because of pregnancy and are less inclined to agree that the pregnancy was hoped for and less inclined to indicate feeling happy and cheerful than first or second trimester subjects. These women indicated that they felt less confident that childbirth classes would reduce anxiety, and saw the prenatal health care professional as less sensitive to their needs than women in the first or second trimester of pregnancy. Third trimester subjects expressed less fear than second trimester subjects.

Women in the second trimester of pregnancy did not see themselves as less attractive as a result of pregnancy but instead were the happiest and most cheerful, hoping for a baby prior to pregnancy. This group additionally expressed the greatest degree of satisfaction with the sensitivity of the prenatal health care professional. These results support the notion that the second trimester of pregnancy is a tranquil time of life. In contrast, analysis revealed that second trimester subjects feared childbirth pain more than

subjects in the first or third trimester of pregnancy. The reason for this finding is unclear without additional research. Other areas of interest were topics associated with labor, birth, and parenting. These interests seem to imply that second trimester subjects are beginning to see the fetus as an individual and are therefore beginning to plan for the birth of the baby.

Women in the first trimester of pregnancy believed that childbirth education reduced anxiety about labor and birth, held the lowest level of fear related to childbirth, and believed that pregnancy did not make them unattractive. They did indicate that they did not feel as happy and cheerful during pregnancy as those women in the second trimester which is most likely attributable to somatic discomforts accompanying the first trimester of pregnancy. First trimester subjects were interested in only a few topics, with the greatest interest being that of danger signs. Exercise and fetal growth and development were of value as well but interest in these two topics was not as high as for women in the second trimester of pregnancy.

These findings may indicate that first trimester subjects do not think of the fetus as a separate entity because during early pregnancy because the baby seems unreal. Furthermore, first trimester subjects were less happy and cheerful during this time, possibly due to discomforts often found during this period of pregnancy. These results in conjunction with a focus on items such as danger signs and exercise, as well as the lack of interest in topics related to labor, birth, and parenting, may indicate that women in the first trimester of pregnancy are more interested in comfort and general health than second and third trimester subjects. The findings of the research support Hypotheses I and supports the work presented by Tanner (1969) and Rubin (1970) that describes developmental tasks of pregnancy according to trimester.

Summary of Provider Satisfaction and Learning Desire Results

The results indicate that as provider satisfaction increases so does the desire to learn about pregnancy, birth, and infant care. Likewise, as provider satisfaction decreases, the desire to attain supplementary knowledge about pregnancy, birth, and infant care declines. Those subjects with low provider satisfaction seemed less inclined to seek greater knowledge about pregnancy, birth, and infant care These findings seem to indicate that pregnant women who are satisfied with the prenatal health care

provider may seek supplementary knowledge and as a result, may be better prepared to cope with labor, birth, and parenting than those women who are not satisfied with the provider. Furthermore, the findings support Hypothesis II and concur with the notion offered by Dewey (1916) that a partnership between teacher and learner enhances learning. Additionally, a basic component of the client education process includes the evolution of a positive and beneficial relationship with the client; if the relationship component of the exchange is insensitive, disrespectful, or the information is inappropriate for the developmental level, client education is not effective (Severson-DeMuth, 1989).

Summary of Demographic Results

Education. The group expressing the most positive views overall were those subjects with a college degree. They were happier during pregnancy, had hoped to have a baby prior to pregnancy, and were the most likely group to seek out additional information about topics of concern. These subjects were the least concerned about childbirth-associated pain and firmly disagreed that pregnancy made them less attractive. Subjects with either advanced or middle school education were more inclined to express satisfaction with the prenatal health care provider and were less inclined to seek additional self-help information than the other groups. As anticipated, middle school subjects were more likely to feel unattractive during pregnancy, to worry about childbirth associated pain, and were less likely to have planned pregnancy than the other educational groups. These results in particular may very likely be confounded by age.

Subjects with a high school diploma were primarily in the middle range on all items that displayed significant results as was the group with some college education. Those subjects with some high school education were the most negative group overall. Although the middle school group was the most likely to fear childbirth pain and the least likely to plan pregnancy, those with some high school education surpassed the middle school group as being more likely to fear the pain of childbirth and less likely to have planned pregnancy than the rest of the education categories. Finally, this group was the least likely to express confidence in the prenatal health care professional, the least likely to recommend

the professional to someone else, least likely to read for additional learning, and the least likely to view the professional as sensitive to their needs.

Income. Subjects with middle and high incomes were found to be happier during pregnancy, more likely to have hoped for a baby prior to pregnancy, and more likely to believe the prenatal health care professional to be sensitive to their needs than low income subjects. Moreover, middle and high income subjects were also more likely to pursue additional knowledge about issues of concern and more likely to believe that pregnancy does not diminish attractiveness than subjects with low income. The one exception to these findings is the fact that both high and low income subjects are more likely to be satisfied with the prenatal health care professional's ability to answer questions than subjects in the middle income range. The low income group was found to have the greatest interest in cocaine/marijuana, social service, and stress. The high and middle income groups were more interested in exercise than the low income group.

Marital Status. Subjects who were single and living with a partner (SLWP) were the most positive group, reporting that they were happy and cheerful during pregnancy, enjoyed learning about pregnancy and the baby, were satisfied and compliant with the prenatal health care professional, and were willing to make any sacrifice needed for the health of the baby, more so than either married or single subjects. In contrast, single subjects were the least likely to agree with the aforementioned items. The SLWP group were more likely to believe that childbirth education would eliminate anxiety about birth, that pregnancy would make them less attractive, and also feared childbirth pain more than the single group while the married group was the most likely to disagree. Conversely, married subjects had hoped for a baby prior to pregnancy and engaged in self help activities more than the SLWP and single subjects respectively. The single group was the most likely to desire help from a mother figure than the SLWP or the married group.

Race. According to the findings, black subjects had a tendency to feel less happy and cheerful during pregnancy and were less likely to have planned pregnancy than the other three groups. They also were more likely to believe that childbirth education eliminates the anxiety that accompanies impending birth than the other groups. Additionally, blacks seemed to prefer help from their mothers following birth

more than the remaining three groups. In contrast, white subjects were the least likely to believe that childbirth education eliminated childbirth anxiety and preferred postpartum assistance from the father of the baby. The other race group was found to be the happiest during pregnancy and was more likely to have planned pregnancy than the other three groups. Additionally, the other race was more inclined to seek postpartum aid from either the father of the baby or a friend. Analysis of Part II by race indicated significant findings on topics related to behaviors associated with higher risk especially during pregnancy.

A prevalent attribute of a developmental task is the existence of teachable moments when an individual has the expanded ability to learn. Despite the presence of confounding variables in the demographic portion of the study, Hypothesis III was supported. Moreover, some developmental tasks are precisely defined by specific cultures in society, certain developmental tasks are universal from one culture to another according to Havighurst (1972). Consequently, the description of developmental tasks will fluctuate among cultures to some extent. Developmental tasks prescribed by American society are predominantly based on middle class values with some attempt at including variations for lower and upper class Americans. Therefore, it is crucial to consider demographic variations when engaging in prenatal education.

Summary of Congruence Between Pregnant and Professional Subjects

A comparison study between pregnant subjects' interest in prenatal education topics and the timing of the prenatal professionals' presentation of those topics indicated some differences between the two groups. Upon closer examination, it was noted that professionals and pregnant subjects agreed with the timing of seven topics which are "anesthesia," "danger signs," "breastfeeding," "when to go to the hospital," "onset of labor," "natural childbirth," and "sex in pregnancy." Moreover, both pregnant and professional subjects agreed with the primary timing of presenting "contraception," "Cesarean section," "infant care," "medicines in labor," and travel." Despite the congruence concerning these topics, Hypothesis IV was not supported. The pregnant and professional subjects disagreed with the secondary timing of these topics with the prenatal health care professionals responding, "I do not discuss this topic"

for all of this group of topics. Finally, pregnant and professional subjects displayed no agreement on the remaining topics of "fetal growth and development," "exercise," and "cocaine/marijuana."

Summary of Pregnant Adolescent Findings

Data analysis indicates that pregnant adolescents have the greatest interest in natural childbirth, sex during pregnancy, topics related to labor and delivery, and some minor interest in cocaine/marijuana. Additionally, the results present some disturbing yet not surprising information about pregnant adolescents. Teens are more inclined to fear childbirth pain, are worried about the baby during pregnancy, and are less likely to seek out additional information about matters of concern than adult pregnant women. Furthermore, pregnant adolescents indicate that they are not as happy and cheerful during pregnancy as adults and are more concerned about their appearance than pregnant adults. Finally, the pregnant adolescent is less likely to view the prenatal health care professional as sensitive to her needs. The results of data analysis indicated significant differences between pregnant adults and adolescents thereby supporting Hypothesis V. These results indicate that pregnant adolescents have many fears and concerns that may often be neglected by prenatal health care professionals unless the girl asks specific questions of the provider. Moreover, the findings suggest that the adolescent may find pregnancy to be a confusing and difficult period filled with anxiety.

Conclusion

In conclusion, the results from these analyses indicate that pregnant women in this particular study, had different needs and interests according to developmental changes that accompany each trimester. Furthermore, differences in these needs and interests exist according to educational level, income, marital status, race, and age. Although prenatal health care professionals provide some childbirth education topics at the appropriate time for their pregnant patients, they do so for approximately one-third to one-half of the time. These findings suggest that prenatal health care professionals must consider discussing prenatal education topics according to both physical and

developmental changes of pregnancy while remaining cognizant of demographic variables that affect interest (Malnory, 1996).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This research was undertaken to determine if interests in various prenatal topics change according to gestation in harmony with the developmental stages of pregnancy described by Tanner (1969; 1967), and Rubin (1970). Moreover, the study was designed to ascertain whether or not prenatal health care professionals were supplying appropriate prenatal education at the most opportune time of gestation. A final goal was to examine the relationship between the pregnant woman's motivation to learn additional information and her satisfaction with her prenatal health care professional. This chapter includes a summary and discussion of the research, conclusions concerning the results, and recommendations for additional research.

Summary and Discussion

Objectives

The objectives of this study were to: (1) identify which pregnancy-related topics are of greatest perceived value by pregnant women in all three trimesters of pregnancy; (2) discover which pregnancy-related topics prenatal professionals discuss with pregnant women during each trimester of pregnancy; (3) ascertain if prenatal education interests change from one trimester to the next, according to the developmental tasks of pregnancy; and (4) determine if prenatal health care professionals are supplying pertinent information at the optimal time of relevance.

Research Design

This study used comparative and correlational designs to investigate differences among the major

variables of prenatal education, prenatal health care professionals, and pregnant women. Prenatal health care professional variables included physicians and nurses from both public and private sectors. Finally, gestational variables incorporated subjects from the public and private sectors that included both adolescents and adults at various weeks of gestation. The research variables were complex and were not easily regulated by experimental control. Comparative and correlational research favored concomitant measurement of the relationship of several variables.

Population and Sample

The population for this study was comprised of pregnant women and adolescents and prenatal health care professionals in Tulsa, Payne, and Washington Counties in the state of Oklahoma. A convenience sample of 239 pregnant women, 81 of whom were adolescents, and 54 prenatal health care professionals which included physicians, registered nurses, and licensed practical nurses.

Instruments

Two questionnaires were used for this study; one instrument was administered to pregnant subjects and a different instrument was administered to prenatal health care professionals (see Appendix B). In order to establish validity, both questionnaires were then reviewed by a panel of experts and then pilot tested. Suggestions for improvement were incorporated into the instruments. Cronbach's alpha was calculated on both questionnaires. The instrument for prenatal health care professionals had a coefficient that indicated an acceptable level of reliability. In contrast, the questionnaire for pregnant subjects had a coefficient that was below the acceptable level for reliability. After eliminating those items that diminished reliability, Cronbach's alpha was again calculated resulting this time in a satisfactory coefficient to establish reliability.

The questionnaire for pregnant subjects was entitled the Pinkosky Prenatal Assessment Tool (PPAT) and was color-coded in pink for ease of identification and consisted of three parts (see Appendix B). The PPAT began by requesting information about demographic information such as age, education, race, income, and marital status. Additionally, the demographic portion inquired about the pregnancy due

date, history of previous pregnancies, and health history. Part I was adapted from the Schaefer and Mannheim (1960) Pregnancy Research Questionnaire and Tanner's (1967) original masters thesis interview format. In Part I of the instrument, respondents were asked to rate their level of agreement with statements about pregnancy using a Likert scale. These items were designed to assess developmental stages of pregnancy. Part II was adapted from the Pregnancy Interest Tool (PIT) created by Freda and her associates (1993). A list of common prenatal education topics were listed in random order. Subjects were asked to circle only those items of interest to them at that particular moment.

The questionnaire designed for prenatal health care professionals was color-coded in yellow for ease of identification and was organized into two sections. The first section requested demographic information which included gender, age, race, specialty, occupation, and practice setting. The second section presented the same list of prenatal education topics as found on Part II of the PPAT for pregnant subjects. For the prenatal professionals however, the PIT was organized in a different fashion. The topics were listed and professionals were asked to indicate which trimester of pregnancy each topic was presented (see Appendix B).

Data Collection

The PPAT was administered by the primary researcher and her assistants (see Appendix C for instructions to research assistants) to pregnant women and adolescents. Primigravidas between the ages of 12 and 40 who were in good health were asked to participate in the study. A convenience sample of 239 pregnant subjects were obtained from private practices, public clinics, and the Margaret Hudson Program for Pregnant and Parenting Teens.

The questionnaires designed for professionals was administered to a convenience sample of 54 prenatal health care provider subjects by the primary researcher. Subjects were physicians, registered nurses, and licensed practical nurses in private or public practice as well as from the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN). Additional physicians were contacted but declined to participate.

Analysis of Data

The analysis of data involved several phases. The first phase involved an examination of the demographic data which included measures of central tendency and frequencies. Second, analyses of variance (ANOVA) was conducted to determine any differences that existed between groups for race, income, marital status, and educational level. Additionally, ANOVA was used to detect differences between first trimester, second trimester, third trimester, and pregnant teen groups followed by Duncan's multi range post hoc test for significant results. Correlational studies were utilized to detect a relationship between learning desire of the pregnant subject and her satisfaction with the prenatal health care professional. The SPSS for Windows 7.5 computer program was used to analyze the data. The statistical tests selected for analyses of the hypotheses and the conclusions are presented in Table XXVI.

Discussion of the Results

Discussion of Results According to Pregnancy Groups

Pregnancy is a time of psychological turbulence and upheaval for a woman as she prepares the foundation for motherhood. In order to gain equilibrium, she must master certain developmental tasks that correspond to psychological and somatic changes corresponding with each trimester. According to developmental theory, distinct tasks of pregnancy must be completed in order to achieve ensuing tasks without difficulty (Tanner, 1969). However, Clark (1976) warns that the timing of developmental tasks is not precise. Five main developmental tasks of pregnancy have been identified: (1) acceptance of the pregnancy; (2) adjustment of the body image; (3) recognition of the fetus as a separate entity; (4) preparation for labor, delivery and anatomical separation from the fetus; and (5) preparation for the maternal role (Rubin, 1970; Tanner, 1967; Bibring, Dwyer, Huntington, Valenstein, 1961).

Third Trimester Subjects. Topics related to labor and birth were of greatest interest to women in their third trimester of pregnancy, followed by pregnant adolescents. Predictably, first trimester subjects have the least interest in topics related to labor and delivery followed by second trimester subjects. The

second trimester is the time in which the pregnant woman sees the fetus as a separate individual which accounts for the interest in infant care voiced by second trimester subjects.

TABLE XXVI

SUMMARY OF ANALYSES

Hypothesis	Method of Analysis	Conclusion
Hypothesis I. Pregnant women will differ in their perceptions of the value of prenatal education topics by pregnancy groups.	ANOVA Duncan's Multiple Range	Hypothesis I is supported by the data.
Hypothesis II. Pregnant women who perceive the prenatal healthcare professional as supportive, will score higher on their desire to learn than those who do not.	Pearson's r	Hypothesis II is supported by the data.
Hypothesis III. Pregnant women will differ in their perceptions of the value of prenatal education topics according to selected demographic variables.	ANOVA Duncan's Multiple Range	Hypothesis III is supported by the data.
Hypothesis IV. Prenatal healthcare professionals will supply pertinent prenatal education information at the optimal time of relevance.	Frequency Comparisons	Hypothesis IV is not supported by the data.
Hypothesis V. Pregnant adolescents will differ from pregnant adults in their perceptions of the value of prenatal education topics across stages of pregnancy .	ANOVA Duncan's Multiple Range	Hypothesis V is supported by the data.

Women in the third trimester of pregnancy have two basic tasks: (1) preparation for labor, delivery, and physical separation from the fetus; and (2) preparation for the maternal role (Tanner, 1969; Bibring et al., 1961; Caplan, 1961). Data analysis revealed that women in the third trimester of pregnancy felt somewhat less attractive than during the first two trimesters. Correspondingly, Tanner

(1969) reported that pregnant women in the third trimester were more negative about their bodily changes and described themselves as awkward and unattractive.

The current research discovered that third trimester subjects were less inclined to agree that the pregnancy was planned and were less happy and cheerful than first or second trimester subjects. These women indicated that they felt less confident that childbirth classes would reduce anxiety, and saw the prenatal health care professional as less sensitive to their needs than women in the first or second trimester of pregnancy. These findings support Tanner's (1969) findings that women in the third trimester tended to view their circumstances more negatively. Surprisingly, third trimester subjects expressed less fear than second trimester subjects. This may be because the woman pursues information about labor and birth to gain control over the birth experience (Clark, 1976); furthermore, she is commonly more self-confident about birth than the second trimester woman (Tanner, 1969).

Second Trimester Subjects. The second trimester of pregnancy is distinguished by the task of identifying the fetus as a separate entity (Rubin, 1970; Tanner, 1969). Quickening, or the fetus' first movement recognized by the woman, is acknowledged as being the catalyst for the attainment of this task (Rubin, 1970; Tanner 1967; Bibring et al., 1961). The second trimester is identified by an obvious physical metamorphosis in the form of bodily changes (Fawcett, 1978).

Second trimester subjects participating in the current study did not see themselves as less attractive as a result of pregnancy but instead were the happiest and most cheerful, hoping for a baby prior to pregnancy. This group additionally expressed the highest level of satisfaction with the sensitivity of the prenatal health care professional. These results support the notion that the second trimester of pregnancy is a tranquil time of life. In contrast, analysis revealed that second trimester subjects feared childbirth pain more than subjects in the first or third trimester of pregnancy. The reason for this finding is unclear without additional research. Other areas of interest were topics associated with labor, birth, and parenting. These interests seem to imply that second trimester subjects are beginning to see the fetus as an individual and are therefore beginning to plan for the birth of the baby. Recognition of the fetus as a distinct individual prepares the pregnant woman for the task of birth, the process of anatomical separation, and provides the woman with a readiness to institute the parenting role (Tanner, 1969;

Bibring et al., 1961). The results of this study correspond with findings reported by previous authors such as Tanner (1969; 1967) and Rubin (1970).

First Trimester Subjects. Shuzman (1982) asserts that becoming pregnant creates a psychological change. Pregnancy creates disequilibrium for the woman and impels her to incorporate the fetus as a component of her body (Tanner, 1969). Caplan (1957) observed that even when women were happy with the idea of pregnancy, the majority expressed disappointment and anxiety upon learning of the pregnancy. In her adjustment to the concept of being pregnant, the woman exhibits distinct behaviors to validate the pregnancy (Clark, 1976; Colman & Colman, 1971; Rubin, 1970; Tanner, 1969). Consequently, she notes all physical changes, no matter how trivial (Rubin, 1970).

During the first trimester of pregnancy, labor, birth, and parenting are in the far distant future and as such, do not seem to warrant concern. Therefore, it is not surprising that first trimester subjects participating in the current study, believed that childbirth education reduced anxiety about labor and birth. Additionally, these women held the lowest level of fear related to childbirth, and believed that pregnancy did not make them unattractive. They did indicate that they did not feel as happy and cheerful during pregnancy as those women in the second trimester which is most likely attributable to somatic discomforts and ambivalence accompanying the first trimester of pregnancy. Rubin (1970) proposed that although the woman may be pleased with the notion of pregnancy, she feels that the timing of the pregnancy is not right. Likewise, Tanner (1969) concluded that the timing of pregnancy was a source of ambivalence. The somatic and uncomfortable complaints that often occur during the first trimester tend to exaggerate the woman's ambivalence toward pregnancy (Colman & Colman, 1971).

First trimester subjects were interested in only a few topics, with the greatest interest being that of danger signs. Exercise and fetal growth and development were of value as well but interest in these two topics was not as high as for women in the second trimester of pregnancy. These findings seem to indicate that first trimester subjects do not think of the fetus as separate, thereby supporting the assertions of Rubin (1970) and Tanner (1969; 1967). Furthermore, first trimester subjects were less happy and cheerful during this time, possibly due to discomforts and ambivalence often found during this period of pregnancy. These results in conjunction with a focus on items such as danger signs and exercise, as well

as the lack of interest in topics related to labor, birth, and parenting, may indicate that women in the first trimester of pregnancy are more interested in their own comfort and general health than second and third trimester subjects. This concept is supported by the literature which posits that a woman in the first trimester considers what is specifically happening to her (Colman & Colman, 1971) and becomes increasingly introverted, passive, reflective, and even narcissistic (Clark, 1976; Bibring et al., 1961; Caplan, 1961). These processes serve to integrate the fetus as an extension of the pregnant woman's body by the end of the first trimester (Bibring et al., 1961).

Discussion of Provider Satisfaction and Learning Desire Results

Data analysis affirms that as patient-professional satisfaction increases so does the desire to learn desire about pregnancy, birth, and parenting. Likewise, as patient-professional satisfaction decreases, the desire to attain supplementary knowledge about pregnancy, birth, and infant care decreases. These results appear to indicate that pregnant women who perceive a satisfactory relationship with the prenatal health care provider are more likely to seek additional information and as a result, may be better prepared to cope with labor, birth, and parenting than those women who are not satisfied with the relationship. Furthermore, the findings support with the conception held by Dewey (1916) that a alliance between teacher and learner intensifies motivation to learn. A fundamental element of the client instruction procedure embodies the evolution of a positive and favorable association with the client; if the relationship constituents of the exchange is insensitive, impertinent, or the information is irrelevant for the developmental level, client education is not competent (Severson-DeMuth, 1989).

Discussion of Demographic Results

Education. Subjects possessing a college degree expressed the most positive attitude overall. They were happier during pregnancy, more likely to have planned their pregnancies, and were the most likely to pursue additional knowledge about issues of concern. Additionally, they were the least concerned about pain associated with childbirth and resolutely rejected the notion that pregnancy made them less attractive. Both advanced and middle school education subjects expressed greater satisfaction with the

prenatal health care provider but were also less inclined to seek additional education than the other groups. As anticipated, middle school subjects were more likely to feel unattractive during pregnancy, to worry about childbirth associated pain, and were less likely to have planned pregnancy than the other educational groups. This is in keeping with previous findings reporting that pregnant adolescents hold negative body images and perceive themselves as "fat" and "ugly". Many pregnant adolescents express concern about attractiveness while expressing doubt and apprehension about birth and becoming a mother (Stenberg & Blinn, 1993). These results may likely be confounded by age.

Subjects with some high school education comprised the most negative group altogether. Women who completed some high school were second only to the middle school group concerning fear of childbirth pain and having an unplanned pregnancy. This group additionally expressed less confidence in the prenatal health care professional, were not likely to recommend the professional to someone else, were not likely to read for additional information, and did not perceive the professional as sensitive to their needs.

Income. Subjects with middle and high income were found to be happier during pregnancy, were more likely to have planned the pregnancy, and more likely to believe the prenatal health care professional to be sensitive to their needs than low income subjects. One possible explanation for this finding is that women with middle and high incomes tend to have more financial options available to them and can therefore, choose a prenatal professional who is sensitive to their needs. In contrast, many low income women have no choice but to attend a public prenatal clinic which may or may not have professionals with a warm and caring attitude. Additionally, because of greater financial stability, these women may be more likely to plan a pregnancy than women with low income.

Middle and high income subjects were also more likely to pursue additional knowledge about issues of concern and more likely to believe that pregnancy does not diminish attractiveness than subjects with low income. Since generally speaking, women with higher income have a greater tendency to have a higher level of education, it could be that these women have greater desire to enhance learning. One exception to these findings is the fact that both high and low income subjects were more likely to be satisfied with the prenatal health care professional's ability to answer questions than subjects in the

middle income range. The low income group was found to have the greatest interest in cocaine/marijuana, social service, and stress. Due to inadequate resources, low income women are logically more likely to feel greater stress and seek additional support services. The high and middle income groups were more interested in exercise than the low income group.

Marital Status. Subjects who were single and living with a partner (SLWP) were found to be the most positive group. They were happy and cheerful during pregnancy, enjoyed learning about pregnancy and the baby, were satisfied and compliant with the prenatal health care professional, and were willing to make any sacrifice needed for the health of the baby, more so than either married or single subjects. In comparison, single subjects were the least likely to agree with these items. The SLWP group believed that childbirth education would eradicate anxiety about birth, yet they also believed that pregnancy would make them less attractive, and feared childbirth pain more than the single group. The married group did not perceive themselves as unattractive nor did they fear childbirth pain as much as the other two groups. One explanation could be related to the involvement of a stable partner who is willing to lend support during the labor and birth. Conversely, married subjects were more likely to have planned the pregnancy and engaged in self help activities more than the SLWP and single subjects respectively. The single group was more likely to desire help from a mother figure than the SLWP or the married group. A reasonable conclusion for this finding is that both married women and the SLWP may be able to rely on their mates to provide emotional, psychological, and physical support.

Race. According to the findings, black subjects had a tendency to feel less happy and cheerful during pregnancy and were less likely to have planned the pregnancy than the other three groups. They were also more likely to believe that childbirth education eliminates the anxiety that accompanies impending birth than the other groups. Additionally, blacks seemed to prefer help from their mothers following birth more than the remaining three groups, a fact that is not surprising since black families are frequently matriarchal. In contrast, white subjects were the group least likely to believe that childbirth education eliminated childbirth anxiety and preferred postpartum assistance from the father of the baby. The other race group was found to be the happiest during pregnancy and was more likely to have planned

pregnancy than the other three groups. Additionally, the other race was more inclined to seek postpartum aid from either the father of the baby or a friend. Analysis by race indicated significant findings on topics related to behaviors commonly associated with higher risk especially during pregnancy.

The selected demographic variables were related to each other; nevertheless, a prevalent attribute of a developmental task is the existence of teachable moments when an individual has the expanded ability to learn. While some developmental tasks are precisely defined by specific cultures in society, certain developmental tasks are universal from one culture to another (Havighurst, 1972). Consequently, the description of developmental tasks will fluctuate among cultures to some extent. Developmental tasks prescribed by American society are predominantly based on middle class values with some attempt at including variations for lower and upper class Americans. Therefore, it is crucial to consider demographic variations when engaging in prenatal education.

Discussion of Congruence Between Pregnant and Professional Subjects

Professionals and pregnant subjects agreed with the timing of seven topics which included labor-related subjects as well as danger signs, breastfeeding, and sex in pregnancy. Moreover, both pregnant and professional subjects agreed with the primary timing of presenting contraception, Cesarean section, infant care, medicines in labor, and travel. However, disagreement was noted regarding the secondary timing of these topics evidenced by the fact that prenatal health care professionals did not discuss those specific subjects at any time. Finally, pregnant and professional subjects displayed no agreement on the remaining topics of fetal growth and development, exercise, and cocaine/marijuana. Freda et al., (1993) discovered similar findings in that health care professionals were not in agreement with the clients they served.

Discussion of Findings Related to Pregnant Adolescents

The primary inclination in mainstream America is for women is to delay pregnancy until a career and a secure marriage have been achieved. Based on this societal norm, adolescent pregnancy is especially inappropriate. Pregnancy is a formidable task to any female; however, for the adolescent, the

challenge frequently becomes a crisis because it affixes intricacy to what is already an arduous period of physical, psychological, and emotional changes (Turner, Grindstaff, & Phillips, 1990). Stenberg and Blinn (1993) report that during early adolescence, the girl undergoes an immense physical metamorphosis. Physical and mental changes influence the adolescent's perception of her own body. Mood swings and fluctuations in self-esteem are prevalent. In spite of expanding autonomy, the adolescent may be unable to leave the present and project the long-term consequences of her conduct (Stenberg & Blinn, 1993). While adult women lean toward postponing pregnancy until later in adulthood, adolescents have a greater predisposition to become pregnant at an earlier age than previously (Hamburg, 1986). This premature timing often produces detrimental circumstances for the teen mother, her baby, her family, and society. Because the girl lacks life experience or social support, she opts to resolve her new developmental tasks in a way that may result in deleterious consequences. Some fortunate girls meet the challenge with the attainment of crucial expansion in maturity and ability.

The pregnant adolescent is less likely to view the prenatal health care professional as sensitive to her needs, a fact that is similar to the findings reported in a review of the literature. According to Bergman's (1988) study, pregnant adolescents reported that they would seldom consider seeking guidance from the prenatal health care professional. Additionally, the study found that private physicians rarely referred pregnant adolescents to other sources for prenatal education. Bergman (1993) concluded that pregnant girls and their families perceive private physicians as the sole provider for all prenatal needs. Drake (1996) asserted that the pregnant adolescent may be reluctant to ask questions of prenatal health care professionals about issues of concern due to a lack of assertive communication skills. Additionally, she may not trust adults or prenatal health care professionals which may block effective communication.

This current finding is further supported by Drake (1996) who posits that effective exchange with pregnant adolescents requires an understanding of their cognitive and psychosocial development. Every girl advances through the developmental tasks of adolescence and pregnancy at her own rate making it essential for prenatal health care professionals to regard each girl's own maturity level as well as her developmental stage in order to facilitate effectual and therapeutic communication.

Data analysis for the current study indicates that pregnant adolescents are interested in subjects related to labor and delivery, especially the topic of natural childbirth. Additional interests were sex during pregnancy and some minor interest in cocaine/marijuana. Analysis of teen interest data appears to affirm that pregnant adolescents, despite gestation, are concerned about labor and birth. Additionally, the results present some disturbing yet not surprising information about pregnant adolescents. Teens are more inclined to fear childbirth pain, are worried about the baby during pregnancy, and are less likely to seek out additional information about matters of concern than adult pregnant women.

Pregnant adolescents were not as happy and cheerful during pregnancy as adults and were more concerned about their appearance. These findings are supported by previous research. Rosenbaum (1979) reported that adolescent girls compared their changing bodies in accordance to the established cultural code of lean and beautiful women. Likewise, Davies and Furnham (1986) found that as adolescent girls grew older, they were less inclined to regard weight increase with satisfaction. Through a pilot study, Stenberg and Blinn (1993) reported that pregnant adolescents held negative body images and described themselves as "fat" and "ugly". Furthermore, the study found that pregnant girls were concerned about attractiveness while expressing concern and anxiety about birth and the mothering role (Stenberg & Blinn).

Conclusion and Implications

Based on the results of this research, the following conclusions and implications concerning the questionnaire and the findings were derived.

1. The Pinkosky Prenatal Assessment Tool (PPAT), Part I, seemed to be an satisfactory instrument with which to measure the developmental tasks of pregnancy as evidenced by its ability to duplicate the findings reported by Tanner in 1967 and Rubin in 1970. Approximately 12 items were dropped from the PPAT to increase reliability to an acceptable level; therefore, the instrument should be used again on a similar population and refined accordingly.

2. The PPAT, Part II, was an excellent measurement of interest in prenatal

education topics for pregnant subjects. However, difficulty was encountered using the modified PIT for prenatal health care professionals because many professional subjects circled multiple answers, indicating that a topic was discussed multiple times during pregnancy. Consequently, the PIT should be revised and clarified. Revisions can be made to allow for multiple responses for prenatal health care professionals provided that the same options be available on the PPAT, Part II for pregnant women to favor a comparison study between pregnant women and prenatal health care professionals.

3. The sample size of pregnant subjects seems adequate on the surface; however, when subjects are divided according to pregnancy groups such as by trimesters or teens, the sample size is small especially for the first trimester group. Nevertheless, since all groups consisted of more than 30, the sample size was adequate to produce valid results. Sample size of the prenatal health care professionals was small indeed, especially the physician group. Physicians were somehow less willing to participate than nurses. Eleven doctors participated in the study, far below the 30 typically used for a valid sample; therefore, physicians and nurses were combined for a sample size of 54. A larger sample size that allowed analysis of the responses given by both physicians and nurses individually and would thereby give a more accurate perspective of the actual presentation of prenatal education topics. Nevertheless, results from this study are valid and indicate that prenatal health care professionals are only meeting the prenatal education needs of their clients about half the time.

4. Data collection was difficult since most prenatal clinics and offices see many clients who are gynecology patients as opposed to pregnant patients. Additionally, many pregnant patients are not primigravidas. A greater number of second and third trimester subjects were located probably due to the fact that many women do not realize they are pregnant during the first trimester. Secondly, women in the last month of pregnancy typically visit the prenatal health care professional every week as opposed to once a month for the first eight months of pregnancy. As mentioned previously, physicians were most reluctant to participate in the research despite a variety of methods used in an attempt to secure cooperation. Collaborating with an obstetrician could possibly enhance the physician response particularly if the obstetrician made the contacts with his or her colleagues.

5. Women with an unsatisfactory patient-professional relationship were not likely to

seek supplementary information. In contrast, women who reported greater satisfaction with the patient-professional relationship correspondingly sought out additional information regarding issues of concern. As a result of seeking supplementary knowledge, these women may be better prepared to cope with labor, birth, and parenting than those women who are not satisfied with the relationship. Not only does a rewarding partnership between teacher and learner enhance understanding, it apparently augments learning.

6. Results from these analyses indicate that pregnant women have different needs and interests according to developmental changes that accompany each trimester. First trimester subjects were found to have greater interest in topics that concern their own well-being; moreover, they were primarily focused on acceptance of the pregnancy itself. Second trimester subjects were interested in fetal growth and development as well as topics related to labor and delivery. Analysis of items assessing developmental tasks of pregnancy reflected the second trimester woman's efforts to individuate the fetus while third trimester subjects were preparing for anatomical separation and acceptance of the maternal role. Third trimester subjects expressed interest in labor, birth, and parenting issues. Furthermore, differences in these needs and interests exist according to educational level, income, marital status, race, and age. Although prenatal health care professionals provide some childbirth education topics at the appropriate time for their pregnant patients, they do so for approximately one-third to one-half of the time. These findings suggest that prenatal health care professionals must consider discussing prenatal education topics according to developmental changes in pregnancy while remaining cognizant of demographic variables that affect interest.

7. Although adolescents face the same developmental tasks of pregnancy as adult women, these tasks are incongruous with the developmental tasks of adolescence which occur simultaneously. Previous and current research indicates that pregnant adolescents hold negative opinions about their own body image and are overly weight-conscious despite the crucial weight gain needed to facilitate fetal growth. In the current study, the pregnant adolescent was generally unhappy about her pregnancy which was almost always unplanned. She was concerned about labor and delivery, the safety of the baby, sex during pregnancy, and she displayed more fear of childbirth pain than adult women. A pregnant adolescent is

not likely to seek additional information about pregnancy, the baby, or parenting and sees the prenatal health care professional as insensitive to her needs.

These findings are of grave importance to the prenatal health care professional. Adolescents have concerns and fears that are greater than adults yet they are reticent to approach the professional or find information on their own. Therefore, prenatal health care professionals must take the initiative to approach these fears and concerns rather than making the assumption that because the adolescent voices no questions, she has no concerns. Anticipatory guidance coupled with a therapeutic and caring environment may enhance the patient-professional relationship and thereby promote a successful transition into the maternal role.

Recommendations for Future Research

The purpose of this research was to determine if prenatal interests change according to gestation in accordance with the developmental stages of pregnancy. Furthermore, the study sought to determine if prenatal health care professionals supplied suitable prenatal education at the most appropriate time of gestation. Finally, the relationship between the pregnant woman's motivation to learn additional information and her satisfaction with her prenatal health care professional was examined. Recommendations for future research are provided based on the results of this study.

1. This study was limited to a cross-sectional design. Additional similar studies utilizing a longitudinal design would provide valuable information regarding the changes in topical interest with advancing pregnancy.

2. Revisions to the PPAT were completed to improve reliability following the study, however the revision has not been tested. Therefore the revised PPAT edition should be tested and evaluated with a similar sample group.

3. Further study is needed to determine developmental changes according to trimester specifically for pregnant adolescents.

4. This research detected differences among the demographic variables in regard to the topical interests and the developmental stages of pregnancy but did not determine the reason for these differences.

Therefore, additional study is needed to examine the relationships between demographic variables and both topical interests and developmental stages of pregnancy.

5. Because society expects pregnant women to hold positive attitudes toward the fetus, women may be hesitant to respond to the questionnaire with negative answers. Therefore, the PPAT should be evaluated in terms of social desirability.

6. The study determined that women who perceive the patient-professional relationship as satisfactory are more likely to seek supplemental prenatal education. Additional research is needed to determine which professional behaviors motivate learning.

7. Because nurses and doctors have different roles and responsibilities as prenatal health care professionals, further study is needed that includes a greater number of physicians. Consequently, a comparison between doctors and nurses would make it possible to contrast the approach to prenatal education used by doctors and nurses. The results of such a study could focus on the strengths and weakness of both physicians and nurses so that the two could more effectively collaborate as a team to provide appropriate education at the optimal time of gestation.

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APPENDICES

APPENDIX A

SAMPLE CORRESPONDANCE

Sample Correspondence to Prospective

Professional Provider Subjects

December 10, 1996

Name
Address
City, State

Dear Colleague:

I am a nursing educator for Langston University--UCT and have worked in maternal-newborn nursing for most of my career. I am currently a doctoral candidate working on my dissertation which compares the interests of pregnant women in each trimester with the information provided by prenatal health care professionals (both physicians and nurses).

Dr. Dan Baxter, Stillwater, is a member of my dissertation committee at Oklahoma State University. As my advisor, he suggested that I contact private obstetricians and their colleagues (physicians and nurses) to ask if they would complete a brief questionnaire (enclosed) as part of my research data. My colleague, Radonna Tims, suggested that you may be willing to participate in my research. The questionnaire takes five minutes to complete; all information is strictly confidential and will be reported as aggregate data.

I will call you next week and if you are agreeable, we can arrange a time for me to visit your office in order to administer this brief questionnaire to you and your colleagues.

I appreciate your consideration in this matter.

Sincerely,

Gayle Pinkosky, MS, BSN
Doctoral Candidate, OSU
Assistant Professor, Langston University

APPENDIX B

INSTRUMENTATION

Dear Mother-To-Be:

My name is Gayle Pinkosky and I am a nurse working on a doctoral degree at OSU. I am doing a research study about pregnancy to gain greater understanding about the emotional and physical changes in pregnancy. To do this, I have chosen a group of patients from this office who are pregnant for the first time; if this is NOT your first pregnancy, please return this packet to the receptionist. If this IS your first pregnancy, I would like for you to participate in my study. It will take about 10 minutes of your time and you will be asked to complete a questionnaire about some of your ideas and feelings about your pregnancy.

This is an opportunity for you to share your ideas that may help doctors and nurses in the provision of prenatal care. Please read and sign the consent form before completing the questionnaire. When you have signed the consent and finished the questionnaire, return it to the receptionist. The information you provide is confidential, however, you ***MUST SIGN THE CONSENT*** or I am unable to use your study questionnaire. If you have any questions, you may contact my advisor, **Dr. Beulah Hirschlein** at Oklahoma State University at **1-405-744-8347.** You may also contact **Jamie Moore**, Oklahoma State University, University Research Services at **1-405-744-5700.**

Thank you for your participation and cooperation.

Sincerely,

Gayle Pinkosky, MS, RN

The Pinkosky Prenatal Assessment Tool (PPAT)

The following information will be used for the purpose of describing the subjects as a group. The information that you provide will be strictly confidential. Please complete the following page. DO NOT SIGN YOUR NAME

Today's Date:

Your Age:

Education (circle the grade or level you have finished):

Elementary School Through High School	College	Advanced College
1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4	1 2 3 4

Marital Status:	Family Income	Race:
____Single, living with parent/guardian(1)	____Under $20,000(1)	____American Indian(1)
____Single, living alone or head of household(2)	____$20,000--39,999(2)	____African American(2)
____Married(3)	____$40,000--59,999(3)	____Asian American(3)
____Divorced(4)	____$60,000 or above(4)	____Hispanic(4)
____Widowed(5)		____White(5)
____Living with partner but not married(6)		____Other (specify)

How many times have you been pregnant (including this pregnancy)?

How many of the following have you experienced?

____Stillbirths(1) ____Miscarriages(2) ____Death of infant or child(3)

When is your baby due?

How has your health been during this pregnancy ? (Circle 1)

Excellent(1) Good(2) Fair(3) Poor(4) Very poor(5)

Has a doctor ever told you that you have any of the following? (check all that apply)

____Heart trouble(1)	____Migraine headaches(7)
____Cancer(2)	____Heart murmur(8)
____Diabetes(3)	____Kidney trouble(9)
____Asthma(4)	____High blood pressure(10)
____Seizures(5)	____Depression(11)
____Ulcers(6)	____Other (specify)_____

Pinkosky Prenatal Assessment Tool: Part I

I would like to know about some of your feelings about pregnancy and labor. 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; I am interested in your experience with pregnancy.
DO NOT include your name on this questionnaire.

1. How did you first feel about being pregnant?
   ____Very happy(1)
   ____Somewhat happy(2)
   ____Not sure(3)
   ____Unhappy(4)
   ____Very unhappy(5)

2. How do you feel about the changes in your body since you got pregnant?
   ____I'm interested or excited(1)
   ____It's part of being pregnant(2)
   ____I dislike the changes(3)

3. Many women find that they act or feel differently when they are pregnant. Have you noticed any of the following differences since you've been pregnant? (check all that apply)
   ____Depression(1)
   ____Irritability(5)
   ____Joy (2)
   ____Crying spells(3)
   ____No changes(4)
   ____Other_____

4. Do you think of the baby as a boy or a girl?
   ____I have a strong desire for a boy(1)
   ____I have a strong desire for a girl(2)
   ____I have a mild preference for a boy(3)
   ____I have a mild preference for a girl(4)
   ____No preference(5)

5. Do you ever worry that the baby will be born with a defect or abnormality?
   ____I worry about death or abnormality(1)
   ____I occasionally think about it but feel little concern(2)
   ____I do not think about it(3)

6. How do you plan to feed the baby?
   ____Breastfeed(1)
   ____Bottle-fed(2)
   ____I don't know(3)

7. Who will you have to help you with the baby? (Choose only one)
   ____Mother or relative(1)
   ____The baby's father(2)
   ____A Friend(3)
   ____Don't Know(4)
   ____No one(5)

8. How do you think the baby will act when you pick it up, hold it, or play with it?
   ____The baby will be happy and content to be held(1)
   ____The baby will have little reaction until it is older(2)
   ____I don't know(3)

9. What first comes to your mind when you think of labor? (check only 1 response)

____pain or suffering(1) ____time or waiting(5)
____excitement(9)
____nearness of the baby(2) ____getting to the hospital on time(6)
____hard work(3) ____loss of control(7)
____fear(10)
____don't know(4) ____other (specify)(8)

10. Do you feel like you have an understanding of the labor process?

____My knowledge is adequate(1)
____I need more information(2)
____I don't want to know(3)

11. Do you have any concerns for yourself during labor?

____No concerns(1)
____I'm concerned about exposure of my body and embarrassment(2)
____I'm concerned about the quality of nursing/medical care(3)
____I'm concerned about complications(4)
____Other (specify)_____

For the following statements, PLEASE CIRCLE the answer that BEST describes your feelings. There are no right or wrong answers.

STRONGLY AGREE	MILDLY AGREE	MILDLY DISAGREE	STRONGLY DISAGREE
1	2	3	4

12. I'm easily upset since I got pregnant.	1	2	3	4
13. I always do everything that my prenatal health care professional recommends.	1	2	3	4
14. If she would only admit it every pregnant woman is scared and worried.	1	2	3	4
15. I have been happy and cheerful during pregnancy.	1	2	3	4
16. Everything I learn about my pregnancy is important.	1	2	3	4
17. I would like my mother or another woman to help me take care of the baby.	1	2	3	4
18. My prenatal care professional is sensitive to my needs.	1	2	3	4
19. I always enjoy learning about pregnancy and my baby.	1	2	3	4
20. I often think about what my baby will look like.	1	2	3	4
21. I worry about having a great deal of pain during childbirth.	1	2	3	4
22. Prenatal education is the most important thing I can do for my baby's health.	1	2	3	4
23. My prenatal care professional always answers my questions to my satisfaction.	1	2	3	4
24. I did not want to have a baby at this time.	1	2	3	4

(continued)

For the following statements, PLEASE CIRCLE the answer that BEST describes your feelings. There are no right or wrong answers.

STRONGLY AGREE	MILDLY AGREE	MILDLY DISAGREE	STRONGLY DISAGREE
1	2	3	4

25. I would answer some of these questions differently if my responses were shared with my prenatal health care professional.	1	2	3	4
26. Any pregnant woman is concerned whether her baby will be normal.	1	2	3	4
27. I have confidence in my prenatal care professional.	1	2	3	4
28. Prenatal education makes all women feel confident about giving birth.	1	2	3	4
29. Before I became pregnant I was hoping to have a baby.	1	2	3	4
30. I worry that I may lose my baby.	1	2	3	4
31. My prenatal health care professional meets all of my educational needs about pregnancy.	1	2	3	4
32. A pregnant woman needs lots of consideration from her family.	1	2	3	4
33. My prenatal care professional often seems too busy to answer my questions.	1	2	3	4
34. Prenatal education gets rid of all anxiety about labor and birth.	1	2	3	4
35. I tried to keep from getting pregnant.	1	2	3	4
36. I would recommend my prenatal health care professional to someone else.	1	2	3	4
37. I worry that having a baby will make me less attractive.	1	2	3	4
38. I would make any sacrifice necessary for the sake of my baby's health.	1	2	3	4
39. A woman should be very careful about what she does during pregnancy for fear the baby may be hurt.	1	2	3	4
40. I have been reading and/or going to classes to find answers that concern me.	1	2	3	4

Please Continue

Pinkosky Prenatal Assessment Tool: Part II

Please circle ***ONLY*** those topics that interest you ***AT THIS PARTICULAR TIME IN YOUR PREGNANCY.***

Natural childbirth	Exercise in pregnancy	Family violence
Anesthesia during labor	Effects of cocaine and marijuana on the baby	Travel during pregnancy
Social services for pregnant women	Testing and counseling for the AIDS virus	Breastfeeding
Parenting--how to cope with being a mother	Rest and activities	Bottle-feeding
Sexually transmitted diseases	Effect of smoking on the baby	Birth control
Emotional changes in pregnancy	Effect of drinking alcohol on the baby	Danger signs in pregnancy
When to go to the hospital	Medicines in pregnancy--what you can & can't take during pregnancy	Sex in pregnancy
Cesarean section--why is it done?	Working in pregnancy	Birth defects
AIDS virus and its effect on the baby	How to know when labor is starting	Infant care
The effects of stress during pregnancy	Development of the baby inside of you	Vitamins
Prevention of premature birth	Bleeding in pregnancy	Nutrition
Medical tests in pregnancy	Physical discomforts in pregnancy	Forceps
Medicines in labor--what is used?	Personal hygiene (are baths safe?)	

Do you have any additional interests that are not included in this list? Please name them.

TABLE XXVII

PPAT ITEMS DELETED TO
ENHANCE RELIABILITY

Deleted Multiple Choice Items
1. How do you feel about being pregnant? Very happy Somewhat happy Not sure Unhappy Very unhappy
2. How do you feel about the changes in your body since you got pregnant? I'm interested or excited It's part of being pregnant I dislike the changes
3. Many women find that they act or feel differently when they are pregnant. Have you noticed any of the following differences since you've been pregnant? Depression Joy Crying spells Irritability No changes Other
4. Do you think of the baby as a boy or a girl? I have a strong desire for a boy I have a strong desire for a girl I have a mild preference for a boy I have a mild preference for a girl No preference
5. Do you ever worry that the baby will be born with a defect or abnormality? I worry about death or abnormality I occasionally think about it but feel little concern I don't think about it

(table continues)

TABLE XXVII(continued)

PPAT ITEMS DELETED TO
ENHANCE RELIABILITY

Deleted Multiple Choice Items

6. How do you plan to feed the baby?
   Breastfeed
   Bottle-feed
   I don't know

9. What first comes to your mind when you think of labor (check only 1 response)

Pain or suffering	Loss of control
Nearness of the baby	Excitement
Hard work	Fear
Time or waiting	Don't know
Getting to the hospital on time	Other

11. Do you feel like you have an understanding of the labor process?
    My knowledge is adequate
    I need more information
    I don't want to know

Deleted Likert Scale Items:

12. I'm easily upset since I got pregnant.

24. I did not want to have a baby at this time.

25. I would answer some of these questions differently if my responses were shared with my prenatal health care professional.

33. My prenatal care professional often seems too busy to answer my questions.

35. I tried to keep from getting pregnant.

The Pinkosky Prenatal Assessment Tool
Revision

The following information will be used for the purpose of describing the subjects as a group. The information that you provide will be strictly confidential. Please complete the following page. DO NOT SIGN YOUR NAME

Today's Date:

Your Age:

Education (circle the grade or level you have finished):

Elementary School Through High School	College	Advanced College
1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4	1 2 3 4

Marital Status	Family Income	Race
____Single, living with parent/guardian (1)	____Under $20,00 (1)	____American Indian (1)
____Single, living alone (2)	____$20,000-39,999 (2)	____African American (2)
____Married (3)	____$40,000-59,999 (3)	____Asian American (3)
____Divorce (4)	____$60,000 and above (4)	____Hispanic (4)
____Widowed (5)		____White (5)
____Living with partner but unmarried (6)		____Other (specify)

How many times have you been pregnant (including this pregnancy)?

How many of the following have you experienced?

____Stillbirths(1) ____Miscarriages(2) ____Death of infant or child(3)

When is your baby due?

How has your health been during this pregnancy ? (Circle 1)

Excellent(1) Good(2) Fair(3) Poor(4) Very poor(5)

Has a doctor ever told you that you have any of the following? (check all that apply)

____Heart trouble (1)
____Cancer (2)
____Diabetes (3)
____Asthma (4)
____Seizures (5)
____Ulcers (6)
____Migraine headaches (7)
____Heart murmur (8)
____Kidney trouble (9)
____High blood pressure (10)
____Depression (11)
____Other (specify_____

Pinkosky Prenatal Assessment Tool: Part I

I would like to know about some of your feelings about pregnancy and labor. 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; I am interested in your experience with pregnancy. DO NOT include your name on this questionnaire.

1. Who will you have to help you with the baby? (Choose only one)
   ____Mother or relative(1)
   ____The baby's father(2)
   ____A Friend(3)
   ____Don't Know(4)
   ____No one(5)

2. How do you think the baby will act when you pick it up, hold it, or play with it?
   ____The baby will be happy and content to be held(1)
   ____The baby will have little reaction until it is older(2)
   ____I don't know(3)

3. Do you feel like you have an understanding of the labor process?
   ____My knowledge is adequate(1)
   ____I need more information(2)
   ____I don't want to know(3)

For the following statements, PLEASE CIRCLE the answer that BEST describes your feelings. There are no right or wrong answers.

STRONGLY AGREE	MILDLY AGREE	MILDLY DISAGREE	STRONGLY DISAGREE
1	2	3	4

4. I always do everything that my prenatal health care professional recommends.	1	2	3	4
5. If she would only admit it every pregnant woman is scared and worried.	1	2	3	4
6. I have been happy and cheerful during pregnancy.	1	2	3	4
7. Everything I learn about my pregnancy is important.	1	2	3	4
8. I would like my mother or another woman to help me take care of the baby.	1	2	3	4
9. My prenatal care professional is sensitive to my needs.	1	2	3	4
10. I always enjoy learning about pregnancy and my baby.	1	2	3	4
11. I often think about what my baby will look like.	1	2	3	4
12. I worry about having a great deal of pain during childbirth.	1	2	3	4
13. Prenatal education is the most important thing I can do for my baby's health.	1	2	3	4
14. My prenatal care professional always answers my questions to my satisfaction.	1	2	3	4
15. Any pregnant woman is concerned whether her baby will be normal.	1	2	3	4
16. I have confidence in my prenatal care professional.	1	2	3	4

17. Prenatal education makes all women feel confident about giving birth.	1	2	3	4
18. Before I became pregnant I was hoping to have a baby.	1	2	3	4
19. I worry that I may lose my baby.	1	2	3	4
20. My prenatal health care professional meets all of my educational needs about pregnancy.	1	2	3	4
21. A pregnant woman needs lots of consideration from her family.	1	2	3	4
22. Prenatal education gets rid of all anxiety about labor and birth.	1	2	3	4
23. I would recommend my prenatal health care professional to someone else.	1	2	3	4
24. I worry that having a baby will make me less attractive.	1	2	3	4
25. I would make any sacrifice necessary for the sake of my baby's health.	1	2	3	4
26. A woman should be very careful about what she does during pregnancy for fear the baby may be hurt.	1	2	3	4
27. I have been reading and/or going to classes to find answers that concern me.	1	2	3	4

Pinkosky Prenatal Assessment Tool: Part II

Please circle ***ONLY*** those topics that interest you ***AT THIS PARTICULAR TIME IN YOUR PREGNANCY.***

Natural childbirth	Exercise in pregnancy	Family violence
Anesthesia during labor	Effects of cocaine and marijuana on the baby	Travel during pregnancy
Social services for pregnant women	Testing and counseling for the AIDS virus	Breastfeeding
Parenting--how to cope with being a mother	Rest and activities	Bottle-feeding
Sexually transmitted diseases	Effect of smoking on the baby	Birth control
Emotional changes in pregnancy	Effect of drinking alcohol on the baby	Danger signs in pregnancy
When to go to the hospital	Medicines in pregnancy--what you can & can't take during pregnancy	Sex in pregnancy
Cesarean section--why is it done?	Working in pregnancy	Birth defects
AIDS virus and its effect on the baby	How to know when labor is starting	Infant care
The effects of stress during pregnancy	Development of the baby inside of you	Vitamins
Prevention of premature birth	Bleeding in pregnancy	Nutrition
Medical tests in pregnancy	Physical discomforts in pregnancy	Forceps
Medicines in labor--what is used?	Personal hygiene (are baths safe?)	

Dear Prenatal Health Care Professional:

My name is Gayle Pinkosky and I am a nurse working on a doctoral degree at OSU. I am requesting your participation in a research project that involves only 5 to 10 minutes of your time in order to sign the consent form and complete a brief questionnaire. The primary purpose of the study is to determine which pregnancy-related topics prenatal health care professionals discuss with their patients. The long range benefit may be a greater awareness of the pregnant woman's educational needs that are appropriate to the developmental stages of pregnancy. This is a unique opportunity to express your own ideas and feelings about prenatal education.

This will only take a few minutes of your time and your responses are confidential. Please read and sign the consent form and complete the questionnaire; ***if you do not sign the consent form, I cannot use your responses.*** If you have any questions, you may contact my advisor, **Dr. Beulah Hirschlein** at Oklahoma State University at **1-405-744-8347.** You may also contact **Jamie Moore**, Oklahoma State University, University Research Services at **1-405-744-5700.**

I appreciate your time and cooperation in my research.

Sincerely,

Gayle Pinkosky, M.S., RN

PRENATAL INTERESTS TOOL QUESTIONNAIRE
FOR PRENATAL CARE PROFESSIONALS

Demographic Information

The following information will be used as a demographic profile and will be strictly confidential. Please complete the following form. DO NOT SIGN YOUR NAME.

Today's Date:_____

Your Age:_____

Gender: ____Male(1) ____Female(2)

Race:
____American Indian(1)
____African American(2)
____Asian American(3)
____Hispanic(4)
____White(5)
____Other (Specify)_____

Area of Specialty:
____Obstetrics/Gynecology(1)
____Neonatology(2)
____Maternal-Child(3)
____Family Practice(4)
____Other (specify)_____

Primary Work Setting:
____Hospital(1)
____Clinic(2)
____Private Practice(3)
____Community Health(4)
____Education/Faculty(5)
____Other (specify)_____

Occupation:
____M.D.(1)
____D.O.(2)
____L.P.N.(3)
____A.D.N.(4)
____B.S.N.(5)
____B.S.N. with graduate degree(6)
____M.S in Nursing (7)
____Certified Nurse Midwife(8)
____Nurse Practitioner (state specialty)(9)_____

PLEASE INDICATE WHEN YOU PROVIDE INFORMATION ABOUT EACH OF THE FOLLOWING TOPICS WITH YOUR PREGNANT CLIENTS BY CIRCLING ONE OF 4 RESPONSES.

First Trimester 1	Second Trimester 2	Third Trimester 3	I Don't Usually Discuss This Topic 4

	TOPICS	**TRIMESTER**				mark "X" if this information is in written form only
1.	Exercise in pregnancy	1	2	3	4	
2.	Nutrition	1	2	3	4	
3.	Vitamins	1	2	3	4	
4.	Rest and activities	1	2	3	4	
5.	Effect of smoking on the baby	1	2	3	4	
6.	Effect of drinking alcohol on the baby	1	2	3	4	
7.	Drugs in pregnancy--what you can & can't take during pregnancy	1	2	3	4	
8.	Work and pregnancy	1	2	3	4	
9.	Birth defects	1	2	3	4	
10.	Fetal growth and development	1	2	3	4	
11.	Bleeding in pregnancy	1	2	3	4	
12.	Physical discomforts in pregnancy	1	2	3	4	
13.	Personal hygiene	1	2	3	4	
14.	Natural childbirth	1	2	3	4	
15.	Emotional changes in pregnancy	1	2	3	4	
16.	Sex in pregnancy	1	2	3	4	
17.	Infant care	1	2	3	4	
18.	AIDS virus and its effect on the baby	1	2	3	4	
19.	The effects of stress during pregnancy	1	2	3	4	
20.	Family violence	1	2	3	4	
21.	Travel during pregnancy	1	2	3	4	
22.	Breastfeeding	1	2	3	4	
23.	Bottle-feeding	1	2	3	4	
24.	Contraception following delivery	1	2	3	4	
25.	Danger signs in pregnancy	1	2	3	4	
26.	When to go to the hospital	1	2	3	4	
27.	How to know when labor is starting	1	2	3	4	
28.	Cesarean section--why is it done?	1	2	3	4	
29.	Testing and counseling for the AIDS virus	1	2	3	4	
30.	Effects of cocaine and marijuana on the baby	1	2	3	4	
31.	Drugs used in labor	1	2	3	4	
32.	Forceps	1	2	3	4	
33.	Anesthesia during labor	1	2	3	4	
34.	Prevention of premature birth	1	2	3	4	
35.	Medical tests in pregnancy	1	2	3	4	
36.	Parenting skills--how to cope with being a mother	1	2	3	4	
37.	Sexually transmitted diseases	1	2	3	4	
38.	Social services for pregnant women	1	2	3	4	

APPENDIX C

INSTRUCTIONS FOR RESEARCH ASSISTANTS

Research Assistant Instructions

Qualified students must meet the following criteria to participate as a research assistant:

- Students earning a B or higher indicates a good understanding of research methodology
- Willingness to participate
- Interest in maternal-newborn nursing and research methodology

INSTRUCTIONS

The purpose of this study is to determine which pregnancy-related topics are of greatest value to pregnant women and which topics prenatal healthcare professionals discuss with pregnant women during each trimester of pregnancy. You have been given ten questionnaires to obtain from pregnant women who meet the following criteria:

- Primagravida (pregnant for the first time)
- Low risk (no complications of pregnancy)
- Any trimester of pregnancy
- Willingness to participate

You may obtain subjects from a doctor's office, clinic, health department, your family, friends, acquaintances, or women you encounter in a mall as long as they meet the criteria. When you approach a potential subject, please say the following.

"My name is _____ from the Langston University School of Nursing. I am a nursing student conducting research on the prenatal education interests of pregnant women. Would you be willing to participate in this research?" If the answer is "no", thank her for her time; if the answer is "yes", you may continue. "Good. I need to ask a few questions first. How many times have you been pregnant? Have you had any problems with this pregnancy?" If she meets the criteria, administer the questionnaire.

Questionnaire Administration

Instruct the subject to sit in a comfortable environment. Then tell her the purpose of the research as stated below and inform her that her responses are strictly confidential. Tear off the

top page of the questionnaire and give it to the participant; explain that this page describes the study and provides phone numbers in the event that she has questions. Read through the consent form, ask if she has any questions; if not, ask her to sign the consent. Once this procedure has been completed, ask the woman if she prefers for you to read the questionnaire to her or complete it herself.

Purpose of the Study

The research assistant will explain the study using this introduction:

> "The purpose of this study is to learn what prenatal education topics are of interest to pregnant women. Your answers will be strictly confidential. I want you to choose the answer that ***best*** describes you and your pregnancy." Then, turn to the last page of the questionnaire. "Here is a list of typical prenatal education topics. Please circle ***only*** those topics of interest to you ***at this particular time*** in your pregnancy".

Additional Instructions

If the subject asks questions about the questionnaire, keep your voice neutral without emphasis on any particular word or phrase. As much as possible, instruct the subject to just choose the answer the is closest to her natural response. If an item asks her to choose one answer and she believes that more one choice applies, instruct her to choose only one, again instructing her to choose the best answer for her. Should the questionnaire cause the subject to have questions about her pregnancy, refer her to her prenatal healthcare professional. When the subject has completed the questionnaire, briefly review it to ensure that it has been thoroughly completed, but especially the due date and current date. Thank her for her participation. Keep all questionnaires intact with consent forms attached in a secure place until they are returned to me. For any problems or questions, please notify me at once.

Thank you for your help.

Gayle Pinkosky, MS, BSN
Assistant Professor

APPENDIX D

INSTITUTIONAL REVIEW BOARD APPROVAL

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 10-18-95 **IRB#:** HE-96-016

Proposal Title: PERCEIVED VALUE OF PRENATAL EDUCATION TOPICS BASED ON DEVELOPMENTAL STAGES OF PREGNANCY: A COMPARISON BETWEEN PREGNANT WOMEN AND PRENATAL HEALTH CARE OFFICIALS

Principal Investigator(s): Beulah Hirschlein, Gayle Pinkosky

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.
ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature: John H. Wyckoff Date: December 1, 1995

Chair of Institutional Review Board

2

VITA

Gayle Ingle Pinkosky

Candidate for the Degree of

Doctor of Philosophy

Thesis: THE VALUE OF SELECTED TOPICS IN PRENATAL EDUCATION DURING DIFFERENT DEVELOPMENTAL STAGES OF PREGNANCY: A COMPARISON OF THE PERCEPTIONS OF PREGNANT WOMEN AND PRENATAL HEALTH CARE PROFESSIONALS

Major Field: Human Environmental Science

Biographical:

Personal Data: Born in Tulsa, Oklahoma, the daughter of Ruth Tucker and Charles Ingle.

Education: Graduated from Will Rogers High School in Tulsa, Oklahoma; received a bachelor of science degree in nursing from the University of Tulsa in 1975; received a master of science degree in maternal child community nursing from the University of Oklahoma in 1982; completed requirements for the Doctor of Philosophy degree in family relations and child development from Oklahoma State University in December, 1997.

Professional Experience: Registered nurse for Doctors Hospital, Tulsa, Oklahoma from 1975 to 1978; maternal child public health nurse for Tulsa City-County Health Department from 1978 to 1981; registered nurse for newborn nursery, St. Francis Hospital, Tulsa, Oklahoma, 1982 to 1985; certified childbirth educator, St. Francis Hospital, Tulsa, Oklahoma, 1985 to 1990; nursing instructor, Langston University, University Center at Tulsa, 1990 to 1994; assistant professor of nursing, Langston University, Rogers University, Tulsa, Oklahoma, 1994 to present.