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DISCRIMINATING CHARACTERISTICS BETWEEN ATTENDERS AND NONATTENDERS AT A PRENATAL CLASS FOR PREGNANT ADOLESCENTS

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DISCRIMINATING CHARACTERISTICS BETWEEN ATTENDERS AND NONATTENDERS AT A PRENATAL CLASS FOR PREGNANT ADOLESCENTS

By

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ABSTRACT

DISCRIMINATING CHARACTERISTICS BETWEEN ATTENDERS AND NONATTENDERS AT A PRENATAL CLASS FOR PREGNANT ADOLESCENTS

By

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Characteristics of pregnant adolescents that contribute to their attendance at a prenatal class was the focus of this descriptive study. The characteristics examined include socio-demographic factors, developmental level as measured by the Ego Identity Scale, and health beliefs. The convenience sample consisted of 42 unmarried, primipara adolescents aged 15 to 19 who planned to keep their baby after delivery, and had been referred to a prenatal class. The data was collected by means of a questionnaire which was administered to the teen while she was attending a prenatal clinic. Using Pearson Product Moment Correlation, it was found that perceived susceptibility had a negative significant correlation at the .03 level with class attendance. Using discriminant function analysis, perceived impact was able to discriminate between attenders and non-attenders with 69% accuracy. The nursing intervention was based on self-care concepts as described by Orem.

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CHAPTER I

THE PROBLEM

Introduction

In the late 1960s and early 1970s, the increasing number of pregnancies in women during adolescence became recognized as a serious national, medical, and social problem (Baldwin, 1976). Despite an overall decline in fertility rates in the United States, this decline has not fallen as rapidly among teenagers as among older women and for females under age 17, fertility rates are rising (Moore, Hofferth, Caldwell, & Waite, 1978). In 1950, females under age 20 bore 12% of all children and 20% of all first children. In 1975, they bore 19% of all children and 35% of all first children (Moore et al., 1978). In addition, 52% of all out-of-wedlock births occurred to teenagers in 1975, and 39% of teenage births occurred outside of marriage (Moore et al., 1978).

The human side of statistics is represented by multiple physical, psychological, and social needs for the pregnant adolescent. A review of the literature reveals that pregnant adolescents are more likely to terminate or postpone their education (Nye, 1976; Russ-eft, Sprenger, & Berver, 1979)

putting them at an economic disadvantage, are more likely to have medical complications during their pregnancy (Chanis, O'Donohue, & Stanford, 1979; Zlatnik & Burmeister, 1977), and are more likely to find themselves in an unstable family situation (Menken, 1972).

In addition to the problems imposed by the pregnancy itself, the pregnant adolescent is also dealing with the developmental tasks of adolescence. Writers distinguish different characteristics of early and late adolescence and define tasks that the adolescent strives to accomplish during each stage (Chilman, 1979). Early adolescence starts at the onset of puberty and lasts until age 15 or 16. This stage is characterized by the push for independence from parents and attempts to resolve conflicts between the need for childish dependence on parents and the desire for a separate identity. The second stage of adolescence covers the period from age 15 or 16 through 18 or 19, is marked by a search for individual identity, a personal set of values and a future mate. Dependencies on parents are more nearly resolved (Chilman, 1979).

When the adolescent is faced with accomplishing the difficult tasks of adolescence, in addition to coping with a pregnancy, she is asked to make life decisions she may be ill-prepared to make. The accomplishment of the tasks of adolescence may be delayed due to the increased physical and emotional energy needed to deal with the pregnancy (Johnson, 1979).

The pregnant adolescent then, is faced with multiple physical, psychological and social needs, as well as dealing with the tasks of adolescence. Many communities have established programs designed to help meet the needs of the pregnant adolescent. One such program is prenatal classes designed specifically for teens. These classes are often associated with health departments, prenatal clinics, visiting nurses associations or other health facilities. No literature could be found that cites statistics regarding attendance rates at these classes, but it is the experience of this investigator that these classes are poorly or erratically attended by the pregnant adolescents who are referred to the class. Therefore, it would appear that there is a large segment of the adolescent population with multiple needs, there is a service available that has the potential to meet these needs, but the service is not fully utilized. The intent of this study is to examine the characteristics of female adolescents that do attend prenatal classes and compare these results with the characteristics of adolescents that do not attend classes. The results of this study could provide information about pregnant adolescents' health care utilization behavior. Recommendations for improved quality of care to pregnant teens could then be made.

Purpose

The purpose of this investigation is to identify characteristics of pregnant adolescents that contribute to

their attendance at a prenatal class. These characteristics are divided into two categories, identified as individual characteristics and health beliefs.

By identifying these characteristics and relating each characteristic, or combination of characteristics, to the extent of attendance at a prenatal class, the investigator is able to identify what factors contribute to attendance of prenatal classes by pregnant adolescents. The goal is that by identifying these characteristics, programs such as prenatal classes, could be planned with the specific needs of the pregnant adolescent as the basis for the program.

Problem Statement

What differences are there in selected characteristics between pregnant adolescents who attend a prenatal group learning situation and pregnant adolescents who do not.

Definition of Concepts

The first set of characteristics to be studied is individual characteristics. These are divided into:

A. Personal descriptive characteristics

B. Social characteristics

C. Developmental level

A. Personal descriptive characteristics are indicators that reflect an individual's life style and socioeconomic status. This variable describes the pregnant adolescent's present living situation, such as who she lives with, her

source of income, marital plans, and educational status. This variable includes present as well as future plans.

B. Social characteristics are those variables which describe an individual's contact with other human beings and with society at large. These questions pertain to the pregnant adolescent's contacts with and relationship to people outside of her immediate family, such as the health care system, educational system, and interpersonal relationships, both in the present and her plans for the future.

C. The third individual characteristic, developmental level, refers to the extent of completion of the developmental task of identity formation, which is one of the primary tasks of adolescence (Joint Commission, 1973; Marcia, 1980; Otto & Otto, 1972). Marcia (1980) defines identity as "a self-structure-an internal, self-constructed, dynamic organization of drives, abilities, beliefs and individual history" (p. 159). Adolescents will vary in their progress along the continuum of identity formation as this is a slow, emerging process. The progress along this continuum would also differentiate early from late asolescence, as described earlier. Adolescence has various meanings in different sectors of our society making any definition of identity development a relative one (Join Commission, 1973). However, for the purpose of this study, identity development is viewed as a central task of asolescence, and will be defined according to the above definition by Marcia.

The pregnant adolescent's health beliefs are the second major category of characteristics to be studied. The Health Belief Model, as developed by Becker and Rosenstock is the model used to describe this variable (Becker, 1974). To the extent that an individual's health beliefs can be measured, it can be predicted what preventive health actions that individual will take. Becker (1974) recognized that behavior that relates to the prevention of a disease when symptoms do not exist may be different from behavior that results from the presence of symptoms. Therefore, he has modified the original Health Belief Model to help explain illness behavior. However, because this study is examining behavior that contributes to the prevention of problems that may result from the pregnancy, the original Health Belief Model is utilized as the basis for the study (see Health Belief Model, p. 20). There are three major components to the Health Belief Model. The first component states that the individual must believe he is susceptible to a disease or problem before he will take preventive health action (perceived susceptibility). The second component states that the individual must believe that the disease will have at least a moderate impact on his life (perceived impact). The third component states that the individual must believe that taking a particular action would be beneficial by reducing his susceptibility to the condition or if the disease occurred, by reducing its severity (perceived benefits).

The concepts of perceived susceptibility, perceived impact and perceived benefits are restated in the following ways for the purpose of this study: The pregnant adolescent would need to believe that first, because of her age and life situation, she is susceptible to complications during her pregnancy. These complications could be physical or emotional, and occur to either her or her baby. Second, the pregnant adolescent would need to believe that these complications and/or the pregnancy itself, will have at least a moderate impact on her life. She would need to believe that her life style would be different post-delivery, that any complications she or the baby had during her pregnancy may affect her post delivery status and that her feelings about herself may be changed. Third, the pregnant adolescent would need to believe that taking the prenatal class would be beneficial by reducing the possibility of developing complications and increase her ability to handle the impact of the pregnancy on her life. The pregnant adolescent would need to believe that her actions could have some control over the outcome of the pregnancy. She would need to believe that such action as attending a class, seeing the doctor regularly and eating the proper foods would be beneficial to her and her baby.

A prenatal group learning situation is a structured, planned class meeting at regular intervals for the purpose of increasing the participant's knowledge of pregnancy, labor and delivery, the post-partum period and any related issues.

The goal of this eduational process is to increase the participant's awareness of potential problems to the point that a behavior change would occur in the direction of preventive behavior (Jenny, 1978). Class content generally includes information on nutrition, labor and delivery, feelings during pregnancy, infant care, family planning, and other issues related to pregnancy. These class sessions were planned specifically for the pregnant adolescent.

The attendance at the prenatal class is another major concept. Usually the class sessions are planned for a specific period of time, such as four to eight weeks. The frequency of attendance at the class refers to the percentage of classes the pregnant adolescent attends from 100% to 0%. The adolescent is considered to be an attender if she attends 50% or more of the class sessions and a non-attender if she attends less than 50% of the class sessions. The attendance at the class reflects the pregnant adolescent's interest in learning the material, the value she places on obtaining health information, and her accessibility to the class.

Population

Because of the differentiation made earlier between early and late adolescence in terms of the developmental tasks the adolescent is working on, only one period is included. The degree of identity formation may influence the adolescent's perception of her pregnancy. In addition

to developmental differences, there is cause to differentiate between early and late adolescence because of physical differences, particularly in terms of their ability to carry a pregnancy successfully to term. Although the literature is vague and often contradictory as to what factors do play a role in the medical risks for pregnant adolescents (McKenry, Walters, & Johnson, 1979), enough evidence seems to exist to support the differentiation between early and late adolescence for the purpose of this study. Therefore, because there is a larger number of 15-19 year olds than a younger age group, 15-19 year olds are the target population.

In addition to age, other criteria is used to delineate the population. Marital status may contribute to a pregnant adolescent's willingness to seek care (Dott & Fort, 1975). Therefore, only unmarried adolescents are included.

Only first-time pregnant adolescents are included in order to eliminate the bias that might occur in teens who have been pregnant before. The adolescent must be in her twentieth week of pregnancy or later in order to eliminate differences in responses that might occur due to the stage of gestation. Only teens electing to keep their babies following delivery are included as teens electing to adopt may have different dynamics occurring in their attitude toward preventive health care. Teens who have been diagnosed as having a chronic illness prior to pregnancy are also excluded as these teens may have a different perception of

the importance of preventive health care due to increased contact with the health care system.

The last criteria for inclusion in the study involves referral to a prenatal class. Because two of the sites used for data collection also include a prenatal class, if the teen attends the clinic she is automatically referred to the class.

In summary, the study population includes unwed, primipara adolescents between and including the ages of 15-19 who have elected to keep their baby, have no known chronic disease and have been referred to a prenatal class.

Hypotheses

There is a relationship between the attendance of pregnant adolescents at a prenatal class and personal descriptive data.

There is a relationship between the attendance of pregnant adolescents at a prenatal class and social characteristics.

There is a relationship between the attendance of pregnant adolescents at a prenatal class and the degree of identity formation.

There is a relationship between the attendence of pregnant adolescents at a prenatal class and perceived susceptibility.

There is a relationship between the attendence of pregnant adolescents at a prenatal class and perceived impact.

There is a relationship between the attendence of pregnant adolescents at a prenatal class and perceived prescription utility.

There is a relationship between the attendence of pregnant adolescents at a prenatal class and total health belief score.

Given the degree of identity formation, the health beliefs of perceived susceptibility, perceived impact, perceived prescription utility, and total health belief score, it is possible to discriminate between attenders and non-attenders.

Limitations of the Study

The limitations of the study are:

1. Those adolescents who agree to participate in the study may have different characteristics than those who refuse. Therefore, it is possible that the research findings are not representative of all pregnant adolescents.
2. Because the instrument is close-ended, it limits the respondent's answers to those issues the investigator believes are important and may not reflect the pregnant adolescent's true feelings about her pregnancy.
3. Each adolescent may interpret the questions differently or have a different perception of the meaning of the answer choices.

4. There may be other factors affecting the adolescent's pregnancy and class attendance that are not measured.
5. The sample size is small and covers only one geographic area and may not be representative of all pregnant adolescents.
6. The instrument may not be sensitive enough to distinguish differences between subjects, especially adolescents.
7. The adolescents' health beliefs will only be measured at one point in time and this measurement may be affected by stressors occurring in the adolescent's life that were not measured or were deleted on the instrument.

Assumptions

The investigator is making the following assumptions in this study:

1. It is assumed that pregnant adolescents are able and willing to honestly identify their beliefs about their pregnancy and its impact on their life.
2. It is assumed that the data will be collected on pregnant adolescents who have a wide range of individual characteristics and health beliefs about their pregnancies.
3. It is assumed that the instrument is sensitive enough to measure differences in subjects and to

detect their individual characteristics and their health beliefs.

4. It is assumed that attendance at the prenatal class indicates that pregnant adolescents are engaging in preventive health behavior related to their pregnancy.

Conclusion

An overview of the study and description of the purpose of the investigation is presented in this chapter. This chapter contains descriptions and definitions of the major concepts under investigation and the relationship between these concepts.

Chapter II, the conceptual framework upon which this investigation is based will be presented, incorporating the concepts of the Health Belief Model (Becker, 1974) and the Engagement Model (Jenny, 1978). The relationship to Orem's (1980) conceptual framework of nursing care will also be included. In Chapter III a review of the literature pertinent to the study is presented. A description of the methodology used to carry out the study is presented in Chapter IV. In Chapter V the findings of the data analysis will be presented. In Chapter VI will contain the summary, interpretation, conclusions and nursing implications of the study.

CHAPTER II

CONCEPTUAL FRAMEWORK

Introduction

In this chapter, the conceptual framework upon which this investigation is based is presented. A description of the pregnant adolescent's dual role of completing developmental tasks as well as taking on the responsibility of nurturing a new life is discussed. The circumstances under which the pregnant adolescent will engage in preventive health behavior is described by combining concepts from the Health Belief Model (Becker, 1974) and the Engagement Model (Jenny, 1977) into an Integrated Model. The projected nursing intervention is based on self-care concepts as described by Orem (1980).

The Pregnant Adolescent

The literature contains many definitions of adolescence, each stressing a different aspect of this period. These definitions describe adolescence as a period of physical development, an age span, a discrete developmental stage, a sociocultural phenomenon and a way of life or state of mind (Howe, 1980). Rogers (1977) defines adolescence as "a process

rather than a period, a process of achieving the attitudes and beliefs needed for effective participation in adult society" (p. 3). Viewing adolescence as a process allows for a dynamic perspective of adolescence, one that continually changes and fluctuates as the adolescent attempts to bridge the gap between childhood and adulthood. In Chapter I, identity formation was also viewed as a process, therefore these definitions view adolescence from similar perspectives. Rogers' definition of adolescence will be used for the purpose of this study, as it seems to encompass many current beliefs held about adolescence.

The adolescent has to achieve many developmental tasks in order to be accepted into adult society. Clark (1976) identifies these tasks as the need: (1) to integrate growth in physical, social and psychological spheres, (2) to accept, develop, refine and master a new identity, (3) to lay the groundwork for long-term mutual interpersonal relationships, and (4) to develop patterns of work behavior that are consistent and reasonable for adult occupations and careers. By working on and accomplishing these tasks, the adolescent will be engaging in the process of adolescence, as described by Rogers. The importance of a particular task to an adolescent is reflected in how the adolescent chooses to spend her time and set priorities. The dynamic process of adolescence allows for emphasis on any combination of tasks at one time and for progress and regression on the same task. Some tasks may never be completed by the time the adolescent

is expected to assume adult reponsibilities, and this may hamper the adolescent's development during later adult stages.

An adolescent in the American culture therefore, has many tasks to complete in order to make a successful transition to adulthood. These tasks are the "work" of adolescents and consume much of the time and energy the adolescent has available. When an adolescent becomes pregnant, many physical, psychological, and social needs arise, which may compromise the time and energy the adolescent has for working on these tasks (Petrella, 1978). Pregnancy is viewed as a normal maturational crisis when it occurs during an adult woman's childbearing years, but may be more of a situational crisis if it occurs during adolescence. During pregnancy, it is necessary for any woman to change her self-image to include that of mother in addition to roles of wife, daughter, career-person, or homemaker. The woman is expected to sublimate her own personal needs and goals in order to nurture a new dependent life. When an adolescent becomes pregnant and decides to continue the pregnancy, she not only is dealing with the tasks of adolescence, but must also accept the responsiblity for the growth and development of a new life, possibly before she is ready to do so. The task of identity formation is made more difficult as the pregnant adolescent is often forced to become more dependent, both physically and emotionally on her family at a time when she is striving for independence. Schroeder (1975) points out that the

pregnant adolescent's rapidly changing body contributes to the conflict the adolescent already feels regarding her new body image.

The pregnant adolescent is faced with the dual and seemingly incompatible goals of developing an independent identity while accepting the added responsibility of nurturing a new life. The four tasks previously cited by Clark (1976) will be examined in light of the pregnant adolescent's situation. First, the pregnant adolescent's growth in the physical, social and psychologic spheres are limited due to the physical changes of the pregnancy, her limited social contacts due to the demands of a baby and the emotional impact of having a baby. Second, the pregnant adolescent's ability to develop a self-identity is impaired due to the necessity of placing her needs second to the needs of the pregnancy and later to the needs of her baby. Third, the pregnant adolescent may be limited in her ability to develop interpersonal relationships as she copes with the demands of her baby, or she may choose to commit herself to a relationship with the father of her baby before she is ready emotionally to make this commitment. Fourth, the pregnant adolescent may be limited in her opportunity to finish school, thereby decreasing the possibility for an adult career outside of the home. Her ability to compete successfully in the job market later in her life may be minimal. In terms of Rogers' definition, the process of adolescence is cut short as the pregnant adolescent is forced to take

on adult responsibilities before this adolescent process is completed. If little or any progress has been made on completing the process of adolescence, forced transition to adult roles and responsibilities may create stress for the adolescent.

The pregnant adolescent is dealing with accomplishing the tasks of adolescence as well as accepting and integrating a pregnancy and baby into her life. Because of her pregnancy, she will be in a position of making decisions she may have never had to make before, such as when and where to seek medical care, whether to continue her education and whether to participate in preventive health behavior. Many of the decisions she makes in regard to these areas may be influenced by how the pregnant adolescent perceives her pregnancy and what impact she feels the pregnancy may have on her life. One way of conceptualizing how the pregnant adolescent will act is to apply the dimensions of the Health Belief Model (Becker, 1974) to the pregnant adolescent's situation.

The Health Belief Model

This model, as described in Chapter I, attempts to explain why people engage in preventive health behavior. A person would take action to avoid a disease if: (1) she believed she was personally susceptible to it, (2) that the occurrence of the disease would have at least a moderate impact on some component of her life, and (3) that taking a particular action would be beneficial in that it would

prevent the disease or decrease its severity and the individual would not have to overcome important psychological barriers such as cost, convenience, pain or embarrassment to participate in the activity (Becker, 1974). Also contributing to the willingness to engage in preventive health behavior are such modifying factors as demographic variables, socio-psychological variables, structural variables and cues to action. Figure 1 illustrates the interrelationship of these variables with the major beliefs. Each dimension will be discussed.

Perceived susceptibility refers to the "subjective risk of contracting a condition" (Becker, p. 4). An individual could fall anywhere on a continuum of believing that there was no possibility of contracting a disease to believing she was in real danger of contracting the condition. The perceived susceptibility may vary, depending on the disease.

Perceived seriousness, or impact, has two components. First, a person may see a disease or health problem in terms of its medical or health consequences. She would then be concerned with whether a particular disease would lead to death, reduction of physical or mental functioning for a prolonged period of time, or permanent disability. The second component is the perceived impact of a disease or health problem on an individual's social or psychological functioning in family life and social relations. A person may believe that a disease does not have serious health

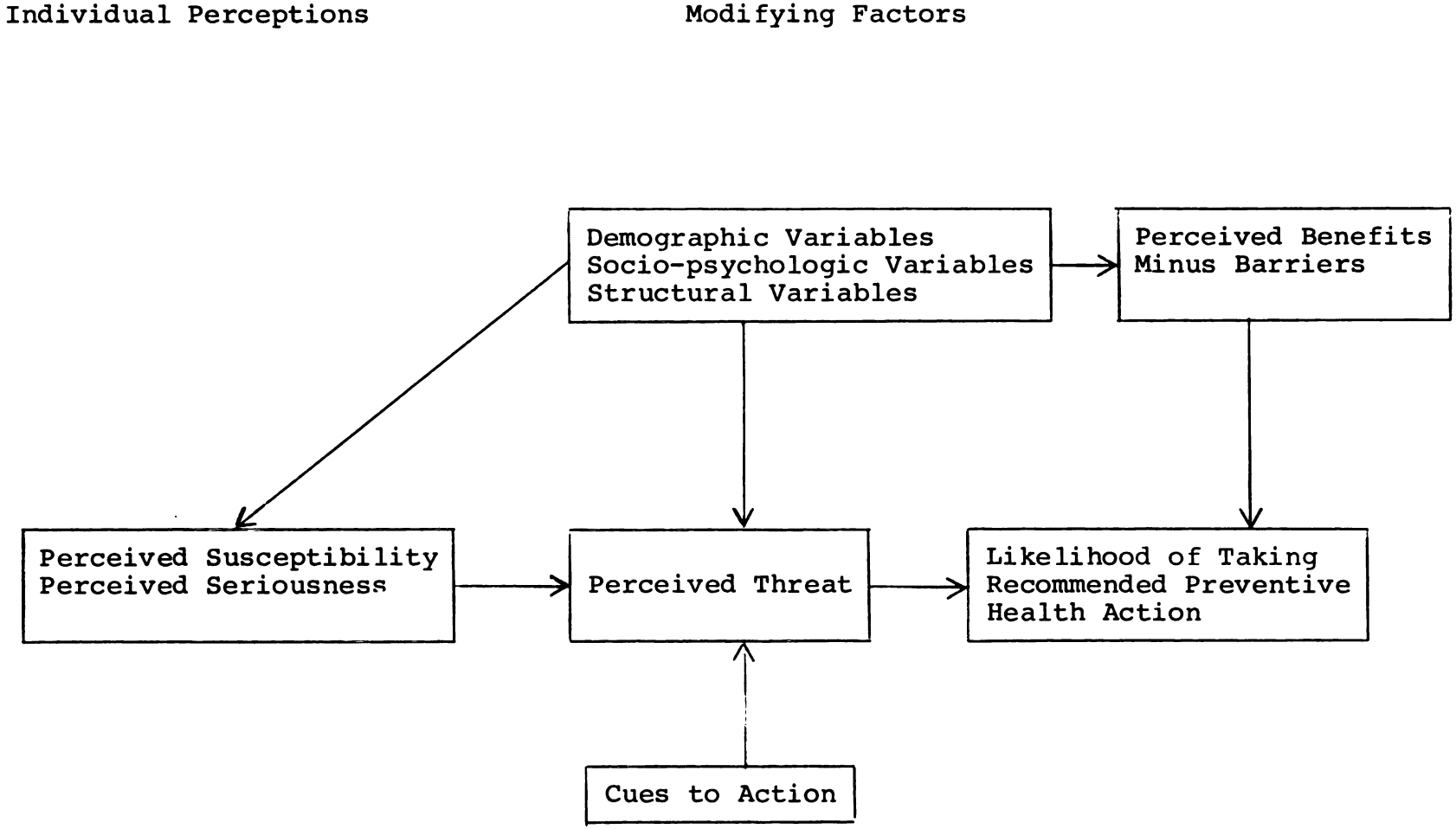


Figure 1. Health Belief Model as predictor of preventive health behavior.

consequences, but that it does have serious psychological ramifications.

A person may believe that she is susceptible to a disease and that the disease would be serious, but her willingness to take action would depend upon whether she believes the action would be beneficial in reducing the disease threat to which the individual feels subjected. Becker stresses that "the person's beliefs about the availability and effectiveness of various courses of action, and not the objective facts about the effectiveness of action, determine what course he will take" (p. 4). Beliefs in this area are influenced by the norms and pressures of the individual's peer group, which is particularly true for the adolescent.

An individual may believe that a particular course of action would be beneficial, but at the same time, see that the action would be inconvenient, expensive, unpleasant, painful, or upsetting. Becker states that "these negative aspects of health action serve as barriers to action and arouse conflicting motives of avoidance" (p. 4). According to Becker, the relative strength of the belief between benefits versus barriers determines whether the action is taken.

Cues to action are those events that trigger a person to take the appropriate action. These cues could be internal such as perception of bodily states or external such as interpersonal interactions or effect of mass media. The required intensity of the cue to trigger behavior varies

with the level of belief in susceptibility, severity, and benefits minus barriers. If an individual is high in these beliefs, a mild cue to action is all that is needed. Inclusion of the variables of demographic, socio-psychological, and structural factors is based on the view that they serve to condition both individual perception and the perceived benefits of preventive actions.

The Health Belief Model has been utilized in the study of the prevention of acute diseases such as TB, streptococcal infections, and dental caries (Becker, 1974). More recently, the model has been used to look at compliance to medical and therapeutic regimens. The model has not been used to study the preventive health behavior of pregnant women. However, the model does provide a framework to examine the preventive health behavior of this group. For example, if a pregnant adolescent believes she is susceptible to complications during her pregnancy, she would be more willing to engage in preventive health behavior. If she believes these complications would be serious for her and/or her baby and if she believes the pregnancy should have at least a moderate impact on her life she should be more likely to engage in preventive health behavior. If she believes in the effectiveness of preventive health behavior in reducing these complications and the barriers to taking these actions is not viewed as too costly, inconvenient, painful, or embarrassing, she would be more likely to engage in preventive health behavior. The demographic, socio-psychological and structural

variables may also impact on the eventual completion of the behavior. Because developmental level is considered to be an aspect of socio-psychological variables, the completion of the tasks of adolescence may affect the adolescent's preventive health behavior.

This framework provides a means of assessing how a pregnant adolescent views her pregnancy. How this assessment can be utilized by the nurse during her intervention with the pregnant teen is addressed by the Engagement Model (Jenny, 1977).

Engagement Model

Jenny (1977) developed the Engagement Model as a framework for a teaching strategy as she states that "effective patient teaching bridges the gap between health information and health practices and results in altering the patient's behavior in the desired direction" (p. 341). This model includes many of the components of the Health Belief Model but in addition incorporates nursing intervention (see Figure 2).

Jenny delineates four variables that are important for successful patient teaching. First, if the patient is to change her behavior, she will have to substitute one set of values for another. "The values most closely associated with the patient's decision to adopt or reject the prescription will be those which contribute positively to his self-concept" (p. 346). Jenny defines self-concept in terms of

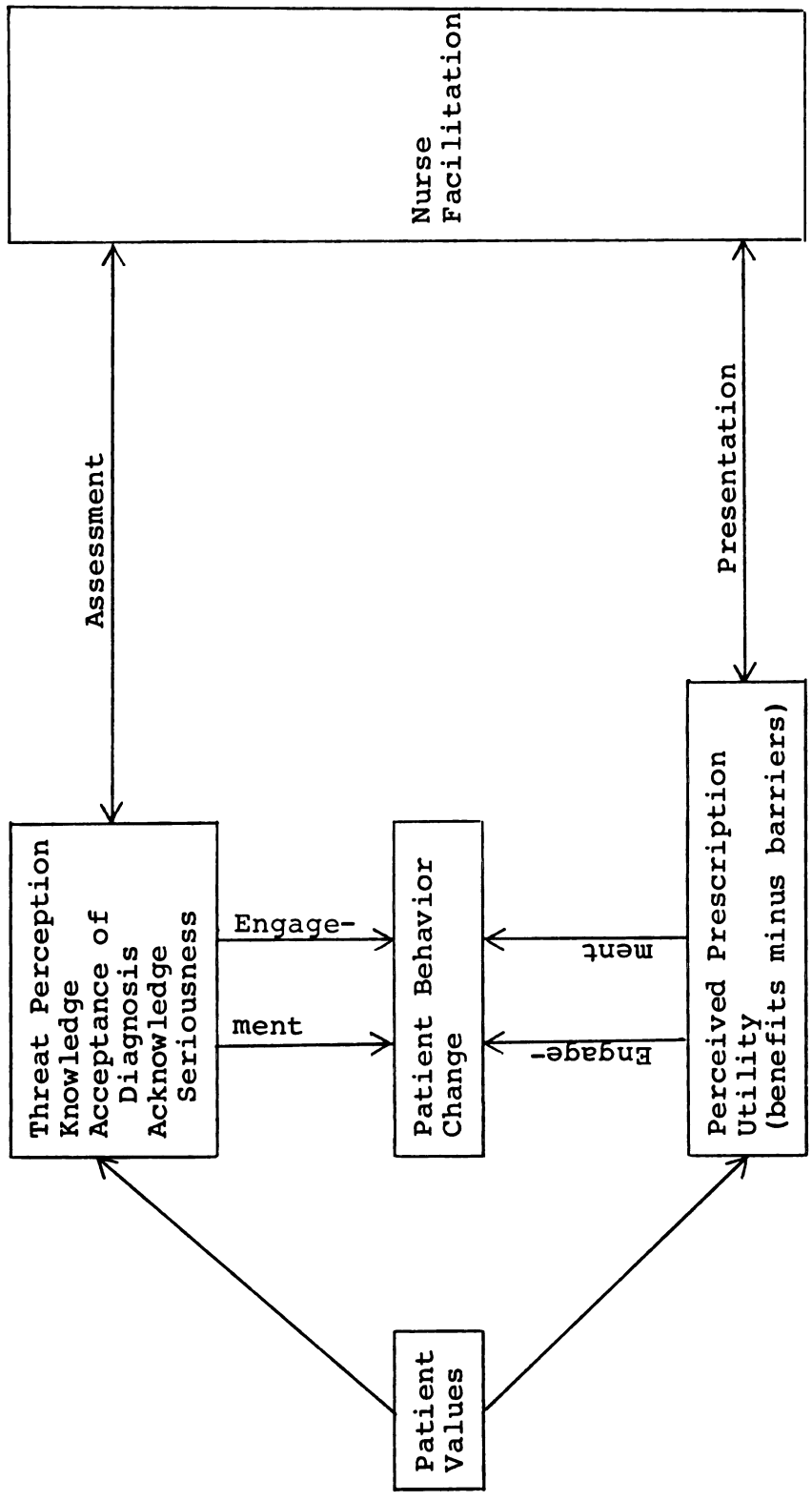


Figure 2. Engagement Model.

a person's beliefs, attitudes, and roles in life, and incorporates the concept of the individual's developmental level in these roles. The value of "health" may not be high on the patient's list of values. Nursing intervention in this area would be to help the patient honestly examine her values for validity and relevance.

The second area Jenny identifies as impacting on the patient's behavior change is the threat perception by the patient. In this area she includes knowledge of the disease, acceptance of the diagnosis, and acknowledged seriousness. This would relate to the perceived susceptibility and perceived seriousness of the Health Belief Model. The nurse would be concerned with the patient's understanding of her condition and its implications for the future. Does she believe the diagnosis is the cause of her situation, is she prepared to change her life in some way, has she considered the implications for the future? The answers to these questions will help the nurse to determine the possible success of the teaching process and to establish teaching goals related to the threat perception.

The third variable is the perceived prescription utility or benefits minus barriers. This concept is essentially the same as the concept outlined in the Health Belief Model. Does the patient perceive that the benefits of the prescribed action outweigh the barriers of cost, time involved, inconvenience, fear of discomfort and alteration of body image or

role function. If the perceived barriers can be overcome, a behavior change will more likely occur (Jenny, 1977).

The fourth variable to successful patient teaching is nurse facilitation. The critical factor in the patient's acceptance of the help offered will be her perception of the nurse's credibility as an authentic, authoritative source. Characteristics of the nurse which enhance this acceptance are expertness, trustworthiness, social status, positive self-concept, comfortableness in the role of nurse-teacher and her initiative in establishing rapport with the client (Jenny, 1977). The role of the nurse is to assess the patient's threat perception of the disease, to present information on the disease including how to minimize the perceived barriers and to present herself in such a way as to facilitate the teaching process. Successful strategies will result in the patient engaging in the behavior change.

The behavior change under question in this study is the pregnant adolescent's participation in preventive health behavior related to her pregnancy. The behavior that will be assessed is the adolescent's attendance at a prenatal class, where teaching is one of the strategies used by the nurse-teacher. Therefore, assessment of the areas of the pregnant adolescent's values, her perception of the threat of the pregnancy to her physically and emotionally and her perception of the benefit of attending the class minus the barriers (perceived prescription utility) will impact the possibility of her attendance at the class. The model

portrays what variables the nurse can evaluate in attempting to influence the outcome of the teaching process.

For the purpose of this study, the components of the Health Belief Model and the Engagement Model were combined to provide for an overall model of preventive health behavior (see Figure 3). Each of the components of this model will be discussed in relation to this study.

Integrated Model

The Integrated Model combines the concepts from the Health Belief Model and the Engagement Model (Figure 3), and attempts to present those factors that may influence the pregnant adolescent's willingness to attend a prenatal class. The model is divided into three parts, the beliefs of the pregnant adolescent, the modifying factors, and nursing intervention.

Individual Beliefs

The beliefs a person holds about pregnancy will affect their willingness to participate in preventive health behavior, such as attend a prenatal class. The threat perception the pregnant adolescent has regarding her pregnancy relates to her knowledge about pregnancy, whether she believes she is susceptible to complications during her pregnancy, and whether she believes the pregnancy will have an impact on her life. Beliefs may be based on knowledge, but may also be based on the individual's perception about a situation. Therefore, the pregnant adolescent may have

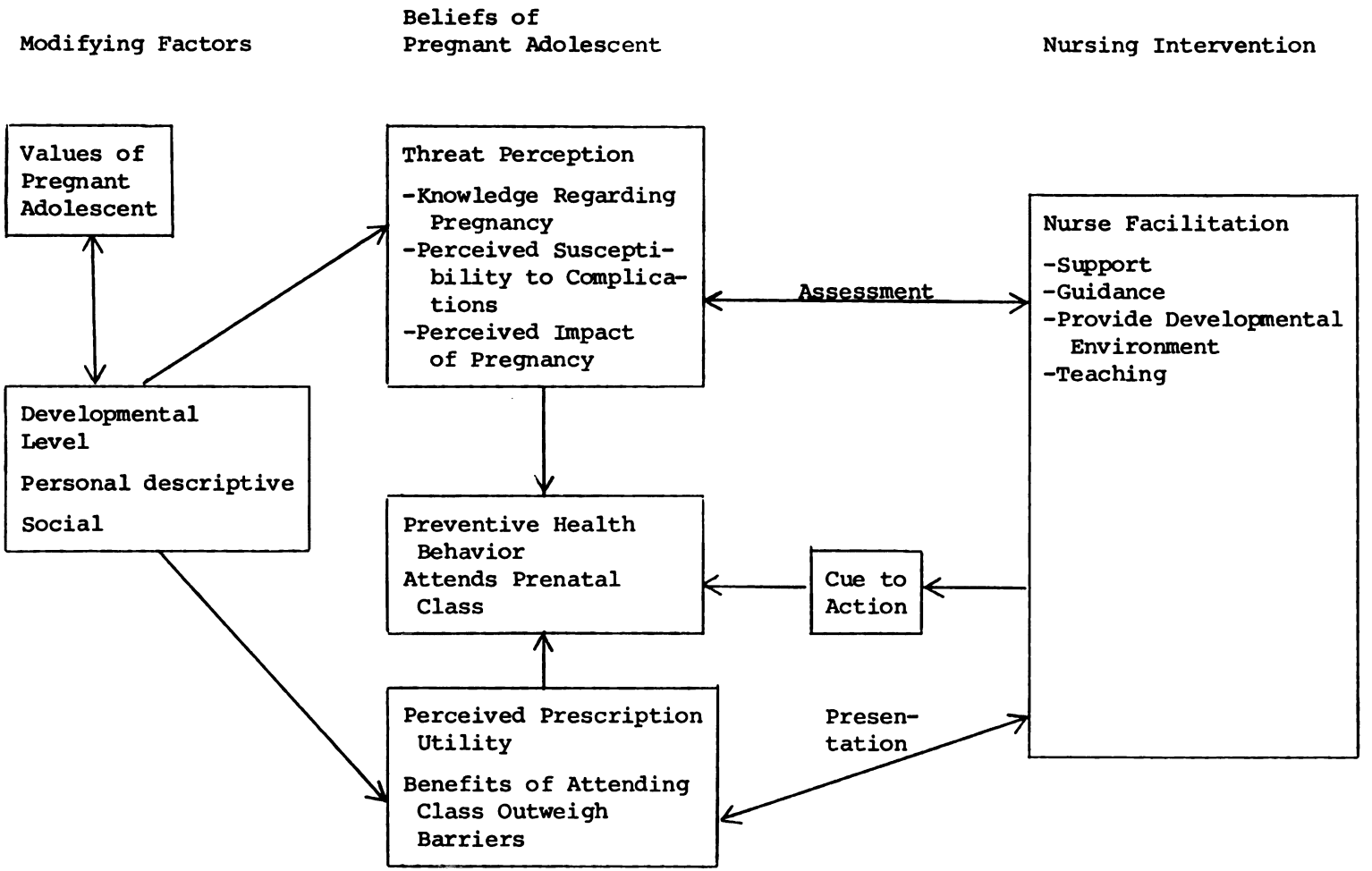


Figure 3. Integration of Health Belief Model and Engagement Model.

the knowledge base to know that she is at an increased risk of developing complications during her pregnancy, but if she does not believe that she is personally susceptible, she may not be willing to engage in preventive health behavior by attending the prenatal class. This belief is measured as the perceived susceptibility of the pregnant adolescent. The pregnant adolescent must also believe that these complications and/or the pregnancy itself would have at least a moderate impact on her life before she would be willing to engage in preventive health behavior. She must recognize that nurturing a baby would affect her life both physically and emotionally. This belief is measured as the perceived impact of the pregnancy. And, as the third belief perceived benefits (perceived prescription utility), the pregnant adolescent would have to believe that attending the prenatal class would be beneficial in terms of reducing the possibility of her developing complications and helping her to cope with the impact of the pregnancy on her life. Also the pregnant adolescent would need to believe that these benefits will outweigh the barriers to attending the class such as time involved, lack of transportation, inconvenience and possibly embarrassment. The benefits would need to outweigh the barriers before attendance at the class would occur.

In summary then, the beliefs of the individual are perceived susceptibility to complications during pregnancy, perceived impact of these complications and/or the pregnancy itself on the pregnant adolescent's life and perceived

prescriptive utility, i.e., the class would be beneficial to the adolescent and the barriers do not outweigh the benefits.

Modifying Factors

Individual differences between clients will influence each adolescent's willingness to attend the prenatal class. Although adolescents may be the same age chronologically, they may vary greatly on their completion of the developmental tasks of adolescence. For example, a 16 year old may have developed a self-identity compatible with her goals and may have developed some independence from her family of origin in contrast to a 17 year old who is still very dependent on her family. These variations in developmental level may account for some differences in willingness to participate in preventive health behavior. As outlined in Figure 3, the developmental level of the adolescent would affect her perception of her pregnancy and its seriousness, impact and benefit of intervention.

The social and personal descriptive variables included such things as socioeconomic level, educational level, age, amount of prenatal care received, previous health care, and marital status. The terms social and personal descriptive were changed from the Health Belief Model (Figure 1, p. 20) because structural and socio-psychologic variables had specific meanings in that model that were not used in this study.

The cue to action that triggers each adolescent to attend the class varies with each individual. Becker (1974)

defines cue to action as an instigating event, either internal (such as perception of bodily state) or external (interpersonal inteactions, mass media) that provides the force to act. The intensity of the cues needed to result in overt action depends on the degree of beliefs regarding susceptibility, impact and benefits that the individual holds. If a pregnant teen has low beliefs regarding her susceptibility to complications and the impact of the pregnancy on her life, an intense cue to action to attend the class may be needed. As Figure 3 illustrates, nursing intervention may be one external cue to action the pregnant teen receives from her environment.

The values that the pregnant girl holds were not measured directly, but these values also affect the adolescent's decision to attend the class. If health is a priority to the adolescent, she will be more likely to perceive her susceptibility to complications, the impact of the pregnancy on her life, and believe that the prenatal class will be beneficial. The adolescent's values are influenced by her developmental level, and social and personal descriptive variables, and likewise, her values will influence her status on these variables.

Nursing Intervention

The nurse can intervene in this process by assessing the adolescent's perceptions of her pregnancy, and through the teaching process, present herself in such a way that she

enhances the pregnant adolescent's participation in preventive health behavior. The important characteristics which the nurse should possess were discussed.

Jenny (1977) stresses that the nurse must possess "commitment to enhance the patient's right to self-care and knowledgeable participation in those decisions which affect his well being" (p. 347). With the pregnant adolescent, the nurse can enhance the adolescent's right to self-care by providing the adolescent with the knowledge she may need to make decisions, confronting the adolescent with her beliefs if they are not based on reality, and supporting her through the process regardless of the decisions the adolescent may make. A nursing theory that elaborates the nurse's role of enhancing a client's self-care abilities is Orem's concept of self-care (1980).

Orem's Nursing Theory of Self-Care

Orem defines self-care as "the practice of activities that individual's personally initiate and perform on their own behalf in maintaining life, health and well being" (1980, p. 35). Self-care activities are learned activities based on the beliefs, habits, and practices that characterize the cultural way of life of the group to which the individual belongs. The age of the individual and his general health status determine the extent of self-care activities an individual can perform. Orem states that a person's values and goals will affect the selection and performance

of self-care activities and a person will perform those activities compatible with her goals.

An adolescent then, will choose self-care activities based on what she learned from her family as a child, what her goals and values are as an adolescent, and what her peers are choosing as self-care goals and activities. As the adolescent is developing independence and self-identity, she will more likely choose activities compatible with her peer group, as this is an important reference group.

The self-care dimension of nursing "has as its special concern the individual's need for self-care action and the provision and management of it on a continuous basis in order to sustain life and health, recover from disease or injury, and cope with their effects" (Orem, 1980, p. 6). Nurses accomplish, or contribute to the accomplishment of, the patient's usual and therapeutic self-care.

The nurse carries out her activities within the framework of three systems. The first system is the wholly compensatory system in which the patient has no active role in the performance of care, such as when he is unconscious. The second system is the supportive-educative system. In this system, the patient's requirements for assistance relate to decision making, behavior control, and acquiring knowledge and skills. The patient is able to perform self-care activities but cannot carry out therapeutic activities without assistance. The third system is the partly compensatory

system where both the nurse and the patient perform self-care activities, depending on the limitations of the patient.

Teaching an adolescent about self-care activities during pregnancy would fall under the supportive-educative system. Assisting techniques which the nurse would use are: (1) support, allowing the pregnant adolescent freedom to express her feelings, positive and negative, allowing and encouraging her to make her own decisions and being available to the adolescent when she requests help, (2) guidance, facilitating the adolescent's ability to make decisions regarding her health and future, (3) provision of a developmental environment, supporting the adolescent's striving for independence and self-identity, and (4) teaching, providing the adolescent with knowledge about pregnancy so she has the potential to base her decisions on facts. The goal of nursing care under the supportive-educative system would be to assist the pregnant adolescent to overcome limitations to self-care, so the adolescent could function at a higher level of health and well-being during her pregnancy and following delivery (see Figure 3, Nurse Facilitation).

Summary

In assisting pregnant adolescents to engage in therapeutic self-care activities, the nurse would initially assess the beliefs the adolescent has about her pregnancy. The nature of these beliefs would affect her willingness to participate in preventive health behavior such as attending

a prenatal class. Her participation in the class would also depend on the adolescent's developmental level and personal descriptive and social variables. Different nursing interventions would be indicated for different belief systems. The Health Belief Model and the Engagement Model can be combined to conceptualize the relationship between these variables. This study addresses the beliefs and modifying factors that influences the pregnant adolescent's health behavior. Literature pertinent to the pregnant adolescent and her preventive health behavior will be reviewed in Chapter III.

CHAPTER III

REVIEW OF THE LITERATURE

Introduction

In this chapter, the relevant literature pertaining to the pregnant adolescent's participation in preventive health behavior will be reviewed. The chapter will be divided into the following categories: Prevalence of adolescent pregnancy; developmental tasks of adolescence and pregnant adolescents; overview of adolescent pregnancy including etiology, maternal and infant risks and consequences; preventive health behavior of adolescents; preventive health behavior of pregnant adolescents and application of the Health Belief Model to pregnant adolescents. In the chapter, a summary of the literature and the implications of the need for the current study will be included.

Prevalence of Adolescent Pregnancy

As stated in Chapter I (p. 1), adolescent pregnancy has become recognized as a serious national, medical, and social problem (Baldwin, 1976). Despite an overall decline in fertility rates in the United States, this decline has not fallen as rapidly among teenagers as among older women, and

for females under age 17, fertility rates are rising (Moore, Hofferth, Caldwell, & Waite, 1978). In 1950, females under age 20 bore 12% of all children and 20% of all first children. In 1975, they bore 19% of all children and 35% of all first children (Moore et al., 1978). In addition, 52% of all out-of-wedlock births occurred to teenage births outside of marriage (Moore et al., 1978).

Pregnant adolescents are therefore becoming a more prevalent phenomena in American society. It is estimated that one million adolescents become pregnant each year and 60% go on to deliver a child (Chanis, O'Donohue, & Stanford, 1979). Because pregnancy in adolescence has become of such a concern, it is dealt with extensively in the literature from different perspectives, such as the psychological, sociological, educational, and medical perspectives. Initially, the literature reviewing the developmental tasks of adolescents in general will be discussed.

Tasks of Adolescence

In the literature, adolescence is described as the period in time between childhood and adulthood when the simplistic view of life held by the child is replaced by a more integrated, complex view of life by the end of adolescence. In order to reach this more complex view of life, the adolescent must accomplish certain tasks during her adolescent years.

One task identified by writers is the adolescent's need to clarify and develop her own identity (Cole & Nelson, 1970; Daniel, 1979; Erikson, 1963; Joint Commission, 1973; Otto & Otto, 1972). This task encompasses all of the tasks the adolescent must accomplish. Erikson (1963), in describing one of eight stages encompassing an entire life time, describes the primary conflict of adolescence as ego identity versus identity diffusion. Erikson (1963) states:

> The growing and developing youth, faced with this physiological revolution within them and with tangible adult tasks ahead of them are now primarily concerned with what they appear to be in the eyes of others as compared with what they feel they are, and with the question of how to connect the roles and skills cultivated earlier with the occupational prototypes of the day.

Identity diffusion is the maladaptive outcome, and implies doubts about one's physical and sexual self, the inability to make decisions and commitments and the lack of a sense of continuity of the self over time.

The process of identity development involves redefining and reintegrating the adolescent's view of herself into a more autonomous, unique individual than she viewed herself during childhood (Joint Commission, 1973). Daniel (1979), stresses that full ego identity is not achieved until late adolescence when adolescents are more comfortable with their bodies, have set goals for themselves and planned how to reach these goals, and feel confident they are able to do so.

One subtask of reaching full identity development is for the adolescent to increase her independence from her

family of origin. This independence involves both emotional independence from the parents as well as partial attainment of economic independence (Beller, 1969). The peer group becomes the primary reference group rather than the family and family values may be rejected as the group's influence increases (Daniel, 1979). This process from dependency to independence is rarely a smooth process. The adolescent is generally ambivalent about moving away from the security of the family resulting in tension and conflict between the adolescent and her family (Joint Commission, 1973). Toward late adolescence, this normal ambivalence will decrease and the adolescent will be able to integrate the values from her childhood which still have meaning for her with new values she has acquired from her peer group as well as society as a whole. The "successful" progress of adolescence can be recognized by a gradual decreased preoccupation with issues of independence coupled with increased concern regarding the future, such as issues of education, occupation, and adult roles (Joint Commission).

Another major task, which has been alluded to, is the gradual acceptance of a rapidly changing body. Because these changes are most acute during early adolescence, teens in this stage spend a great deal of time thinking about their changing body and how it compares to their friends and older teens (Daniel, 1979). This concept of one's body is called body image and because of her rapidly changing body, the teen is forced to change her body image (Dempsey, 1972), The

adolescent's peer group may play a large part in how well the teen accepts her new appearance. An adolescent whose appearance is far from the standard may have a hard time being accepted. Conversely, a teen whose appearance fits what society has deemed as important may be valued and held in high esteem. Therefore, many times it is the meaning of the changes, rather than the changes themselves, that affect how a teen feels about her new appearance.

Along with these external changes, the teen is experiencing new internal feelings and sensations. The teen becomes aware of sexual feelings and sensations she has never experienced before (Dempsey, 1972). Therefore an important task of adolescence is to learn how to control and yet be able to express her desire for sexual gratification and intimacy in a way that is consistent with her own values as well as her family's and society's values (Joint Commission, 1973). Because the teen may yet be developing her own values, and the messages from society are confusing at best, this may be a very difficult task.

To summarize, the teen is faced with multiple interrelating tasks while moving from childhood to adulthood. The authors reviewed seem to agree that the major tasks of adolescence are for the teen to develop her own separate identity, to emancipate herself from her family of origin and to develop a sense of self that is consistent with her own values and morals. A strong identification with a peer group is usually the vehicle a teen uses to decrease her

dependence on her family. The teen must set some goals for the future and make realistic plans to meet these goals. A rapidly changing body forces the teen to perceive her body in a new way and to deal with new sexual sensations. Emerging from adolescence, the young adult may still have many doubts about herself and her beliefs, but she will be a much more complex, rational human being than she was during childhood. What happens to the adolescent, in relation to developmental tasks, when she becomes pregnant?

Developmental Tasks for the Pregnant Adolescent

Although the statement is frequently made in the literature that pregnant adolescents have a difficult time achieving the tasks of adolescence because they are also forced to deal with the crisis of an ill-timed pregnancy (Cartoff, 1979; Chanis et al., 1979; Klein, 1978; Nakashima, 1977; Perkins, Nakashima, Mullin, Dubansky, & Chin, 1978; Petrella, 1978; Shouse, 1975) very little research literature could be found to support this assumption.

Schaffer and Pine (1972) examined the developmental tasks of 24 pregnant adolescents between the ages of 12 and 19 who were seeking an abortion. They approached the teens from a psychoanalytical perspective and found the major conflict to be between being mothered and mothering, to remaining dependent or to becoming a more independent, self-reliant person. The girls that identified more with "being mothered," tended to allow their mothers to make the arrangements for

the abortion, whereas those teens that identified more with "mothering" demonstrated more self-care abilities. This study seemed to support the general statements that (1) pregnant adolescents must deal with the dependency-independence conflicts, and (2) for some teens, the crisis of the pregnancy forced them to deal with this conflict directly. The fact that all teens in the study elected to have an abortion prevents generalization to teens that elect to keep their baby.

Despite the generally accepted assertion that pregnant adolescents have a difficult time achieving the tasks of adolescence, only one research article (Schaffer & Pine, 1972) could be found that examined the basis for this assertion. Further research is needed in this area in order to determine if pregnancy delays achievement of the tasks of adolescence, or if, in some instances, the pregnancy may be used as a growth-enhancing experience.

General Overview

Etiology of Adolescent Pregnancy

Early researchers, looking into the etiology of adolescent pregnancy, tended to attribute it to one single cause. In the 1920s, it was thought adolescent pregnancies were the result of bad morals and mental retardation. In the 1930s, environmental factors were to blame and in the 1940s, psychological and psychiatric factors were the cause. The sick

society with focus on delinquent behavior were examined as causative factors during the 1950s (Middleton, 1974).

Multiple factors that may contribute to a teenager becoming pregnant are emphasized in more recent literature. The pregnant teen may be of any ethnic or religious background, of high or low socio-economic status, may live with one or both parents and may or may not have a relationship with the baby's father (Klein, 1978; Petrella, 1978). Despite the cross-section of our society affected by this phenomena, the research literature has attempted to describe who may be a high risk teen and why. Antecedent factors can be divided into five general categories, physiological, psychological, social, cognitive ability, and availability of contraception and abortion (McKenry, Walter, & Johnson, 1979).

Teenagers are reaching sexual maturity at an earlier age. The menarchal age of girls has dropped from just over 14 years in 1900 to 12.5 years in 1967. Since ovulation occurs 12-24 months after menarche, most girls are able to conceive by age 14 (Nakashima, 1977).

Our industrial society prolongs education and delays marriage, therefore leaving a relatively long period of time between the girl's ability to conceive and sexual activity legitimized by marriage (Klein, 1978; Nakashima, 1977). Teens are increasingly experienced in intercourse out of wedlock. By age 16, one-fifth of U.S. women have experienced sexual intercourse, and by age 19, nearly two-thirds have had

intercourse most of them prior to marriage (Zelnik, Kim, & Kantner, 1979). This factor, combined with earlier sexual maturity, and delayed age of marriage, contributes to the frequency of teenage pregnancies.

The importance of psychological or emotional factors in contributing to teenage pregnancies is viewed differently by different disciplines. A psychoanalytic framework stresses ego and superego deficiencies and unstable family situations (Babikian & Goldman, 1971). In a study of 1,000 30 year olds, involved in Project TALENT at age 15, antecedent factors to adolescent parenting were examined (Russ-eft, Springer, & Bewer, 1979). Ten percent of the men and 31% of the women had a child before age 20. From case studies of 67 of the female adolescent parents, 36% reported some stressful family situations such as alcoholism, separation or divorce of the parents, abandonment, death or chronic ailments.

Other family influences may contribute to adolescent parenthood. Disciplining to extreme, such as overpermissiveness or overpunitive methods, may contribute to early sexual activity (Nakashima, 1979). The teen may be playing out a parent's spoken or unspoken wish for a child (Klein, 1978; Nakashima, 1979). A pregnancy may be a way to get attention in a family situation and may be a form of rebellion (Klein, 1978).

The teenage girl may also be motivated by other factors less related to her family situation. Early sexual intercourse may be motivated by a desire for peer approval and to

be accepted by "the group" (Klein, 1978; Nakashima, 1979). The teen may see a pregnancy as a reason to drop out of school and to establish some means of independence from the family of origin (Klein, 1978). A neglected or lonely teen may use sex as a means of gaining physical and emotional closeness and see the baby as an object of love and someone to love her back (Klein, 1978; Nakashima, 1979).

Social factors may also contribute to a teen experiencing a pregnancy. Project TALENT did find an association between higher incidence of teenage pregnancies and a lower socio-economic background (Russ-eft et al., 1979). Eleven percent of the men and 45% of the women in the lowest socio-economic level were adolescent parents compared with 4% of the men and 17% of the women in the highest socio-economic level. McKenry et al. (1979) states that it is necessary to examine what factors are associated with poverty that contribute to adolescent pregnancies rather than accepting that poverty itself is the contributing factor. Such associated factors may be increased likelihood of family dysfunction, decreased availability of abortion and contraceptive services, and decreased life expectations for themselves educationally and occupationally. Furstenburg (1976), found a pattern of lower sexual activity among women who came from highly educated families and who tended to be more educationally ambitious themselves. This would seem to indicate that the teens themselves, or possibly their families impose standards

on their behavior that are less likely to lead to intercourse and therefore pregnancy.

Lack of knowledge regarding reproduction and contraception has been cited as a reason for the increased incidence of adolescent pregnancy. Several studies have shown that pregnant girls believe that conception occurs near menses and that mid-cycle is the safest time to engage in intercourse (Babikian & Goldman, 1971; Kantner & Zelnik, 1972). The adolescent parents of Project TALENT were more likely to fall in the lower categories for their score on the Reading Comprehensive Test (Russ-eft et al., 1979). However, Furstenberg (1976) found that most teens had some knowledge of birth control. Only 6% were unable to identify any method of birth control and most were able to identify two or three techniques.

However, as Furstenburg's study of pregnant teens indicates, knowledge of contraception does not necessarily lead to its use. Using contraceptives on a regular basis would imply that the teen had been able to complete a series of abstract reasoning including (1) acknowledging the fact that she was sexually active, both to herself and to some member of society and/or the health care system, (2) believing that she could get pregnant, (3) accepting the fact that she is responsible for her actions, and (4) negotiating the system to obtain some form of contraceptive. This type of reasoning requires a fairly high level of sophistication, of which many teens might not be capable (Polsby, 1974).

In addition to knowledge about contraception and reproduction and the ability to associate action with consequences, other factors contribute to the use of contraception and therefore the prevention of pregnancy. Furstenberg (1976) found that the attitude of the teen's mother may play a part in the teen's use of contraception. He found that in homes where the teen's mother discussed using birth control with the teen and thereby indirectly acknowledged the teen's sexuality, the teen was more likely to use birth control than in homes where birth control was not discussed. It would seem that the teen was more likely to acknowledge her sexual activity and use birth control if the atmosphere in the home acknowledged her potential for sexual activity. Further literature pertaining to the use of contraceptives by adolescents will be discussed in a later section (see Contraceptive Behavior, p. 64). Suffice it to say at this point that the use or non-use of contraceptives contributes to the incidence of adolescent pregnancy.

In summary, the findings in the literature support the idea that multiple, interrelated factors contribute to the incidence of adolescent pregnancy. Early sexual maturity, psychological or emotional problems, particularly within the home, sociological factors associated with poverty, lack of knowledge, immature cognitive reasoning and lack of use of contraceptives are the primary reasons cited.

The literature cited provides an adequate description of those teens that have become pregnant. What appears to

be missing are comparative prospective studies before teens become sexually active that examine factors that discriminate characteristics between those that eventually become pregnant and those that do not. Baizerman, Sheehan, Ellisin, and Schlisinger (1974) point out that studies of this type could focus on similarities as well as differences between pregnant teens and their non-pregnant counterpart. The Project TALENT study comes closest to this as much of the data was collected when the subjects were 15 years old and interviews were later conducted when the subjects were 30. Also, the review of the literature seems to suggest a lack of theoretical models of pregnancy etiology that tie all these factors together (Baizerman et al., 1974).

Adolescent Pregnancy--Risk to Mother and Infant

A primary reason for society's concern about pregnancy during adolescence is based on the assumption that this pregnancy poses greater medical risk for both the adolescent and her baby, than if the pregnancy occurred during her 20s (McKenry et al., 1979). However, this assumption is based on research reports that are often contradictory and confusing. One of the reasons cited for these contradictory results is the lack of consensus on the concepts and variables used for the studies such as age, marital status, and prenatal care (Baizerman et al., 1974). As a result, the findings tend not to be cumulative. Despite this handicap, an attempt will be made to compare some of these findings.

The discussion will be separated into medical risks for the mother and medical risks for the infant.

Toxemia is frequently cited as a major medical risk in adolescent pregnancy (Chanis et al., 1979; Ryan & Schneider, 1978; Sherline & Davidson, 1978). An attempt was made to further define age in relation to the development of toxemia by looking at gynecological age (GA, defined as chronologic age minus age at menarche). No relationship was found between gynecological age and the development of toxemia (Zlatnik & Burmiester, 1977). Several authors have concluded that toxemia is more closely related to insufficient prenatal care than age (Dwyer, 1974; Ryan & Schneider, 1978). At least one study concluded that there was no relationship between age and the development of toxemia (Perkins et al., 1978).

The studies examining the relationship of cephalopelvic disproportion and age are also contradictory. Some authors have reported a positive relationship (Chanis, 1979), whereas others have reported no relationship (Dwyer, 1974; Perkins et al., 1978). Chanis (1979) however, did find a positive relationship between age and uterine dysfunction, anemia, and partial separation of the placenta.

One reason for the contradictory results may be that factors other than age itself may be influencing the results. Psychosocial factors, particularly those related to poverty may contribute to the increased incidence of complications (Dott & Fort, 1976; Dwyer, 1974; Perkins et al., 1978;

Ryan & Schneider, 1978); When adolescents are given intensive prenatal care, with special emphasis placed on the teens' psychosocial needs, there may be no difference between teens and pregnant women of a more ideal childbearing age (Dwyer, 1974; Perkins et al., 1978).

The literature examining the medical risks to the infants of adolescent mothers is also contradictory. Most investigators seem to agree that adolescents have low birth weight infants (Dott & Fort, 1976; Dwyer, 1974; Marinoff & Schonholz, 1972; Menken, 1972; Perkins et al., 1978). Increased incidence of low birth weight infants occurred with adolescents of gynecological age of 2 years or less (Zlatnik & Burmeister, 1977). Chanis (1979) found no relationship between age and incidence of low birth weight infants.

Perinatal, neonatal and infant mortality have been found to be higher for children of young mothers (Dott & Fort, 1976; Ryan & Schneider, 1978; Menken, 1972). Again, factors, other than age have also been implicated. Dott and Fort (1975) have delineated multiple factors related to infant deaths including illegitimacy, decreased level of education, increased parity, decreased birth weight, nonwhite race as well as younger and older mothers. Many of these factors may coexist in the pregnant adolescent making it difficult to state that age alone is the contributing condition. Inadequate prenatal care, which could also coexist with the above named factors, has also been cited as the reason for the increased incidence of perinatal deaths

(Ryan & Schneider, 1978). Perkins et al. (1978) found no relationship between perinatal deaths and age and Chanis et al. (1979) found a lower incidence among teens.

In summary, the literature pertaining to the medical risks for pregnant adolescents and their offspring is confusing and contradictory, partially due to a lack of consistency in defining variables and concepts. Most authors agree that there is an increased incidence of toxemia in the teen population and that teens are more likely to have low birth weight infants. Multiple factors, other than age alone, may account for these findings. Pregnant teens are more likely to come from a lower socioeconomic background with all the inherent problems, including inadequate prenatal care, poor nutritional status, lower educational level, and poor housing. Thus, the statement should not be made that age is the sole contributer to the medical risks for the pregnant teen.

Consequences of Teenage Childbearing

When a pregnancy occurs during the adolescent years, educational, economic and marital problems occur with increased frequency. The impact of an early birth is not always direct, but may trigger a chain of events that combine to undermine the adolescent's later well-being.

One immediate, direct effect of an adolescent pregnancy is interruption of schooling. A pregnancy during adolescence frequently results in the teen permanently withdrawing from

school and/or not achieving her educational goals (Card & Wise, 1978; Freedman & Thornton, 1979; Furstenberg, 1976; Moore, Hofferth, Caldwell, & Waite, 1978; Trussell, 1976). Whether or not a teen drops out of school as a result of the pregnancy is influenced by her marital status. If she gets married in addition to being pregnant, she is more likely to quit school than teens who are pregnant, but not planning to marry (Furstenberg, 1976; Moore et al, 1978). Research indicates that adolescent childbearers are not likely to make up for this decreased level of education over time (Friedman & Thornton, 1979; Moore et al., 1978). There is a complicated relationship between early childbearing and decreased educational level. Numerous social and psychological factors that contribute to early childbearing could also contribute to dropping out of school, independent of the pregnancy. Card and Wise (1978) were able to compare teenage parents with classmates who were not teenage parents for academic aptitude and achievement, socioeconomic status, and race and educational expectations at age 15, before any had had a child. The negative impact of early childbearing held true when these factors were controlled. They concluded that early childbearing was directly related to decreased educational achievement.

As a result of the lower educational level, teenage mothers have less prestigious jobs, lower incomes, and are less satisfied with their jobs when they do enter the job market (Card & Wise, 1978; Furstenberg, 1976). Women with

less schooling obtain jobs of lower socioeconomic status, make lower hourly wages and earn less annually (Moore, 1979). Another consequence may be that the woman who became a mother during her teens elects not to enter the job market at all, but relies on public assistance for her income. Women whose first child was born outside of marriage and have never married, are more likely to receive welfare (Moore et al., 1978). Also, women who were married teenage mothers and whose marriage subsequently broke up, have a high probability of receiving public assistance.

In addition to a low educational level, family size also contributes to a bleaker economic outlook for the teenage mother. Girls who have a first birth at an early age, tend to bear their subsequent children in rapid succession (Menken, 1972). These additional children pose further problems for the mothers in obtaining their education and in improving their economic standard. Card and Wise (1978) found that adolescent mothers had a greater number of children than their classmates at both five and 11 years after high school. However, when number of years into their reproductive career was controlled, these differences disappeared. The adolescent parents had 2.1 children after about six years and the parents who delayed childbearing until ages 20-24 had 2.2 children after about the same number of years. Of course the adolescent parents had more years of potential childbearing than the older parents. In comparison, Moore (1979) found that among women aged 35 to 52, women who were

15 years or younger at their first birth had an average of three more children than women who were at least 24 when they became mothers, even when the effects of numerous social and demographic factors were statistically controlled. All the women had completed their reproductive careers at the time of the study.

In addition to increased family size, other consequences occur in the family life of teenage mothers. If the pregnant adolescent decides to marry, there is increased likelihood that the marriage will be dissolved (Card & Wise, 1978; Menken, 1972; Moore et al., 1978). However, the instability of teen marriages is true regardless of whether the couple has a child. Moore et al. (1979) found that the youthfulness of the couple, as measured by the wife's age, seems to be the determinant of divorce or separation, regardless of the age of the mother at first childbirth.

In summary, four general categories of events occur when a teenager becomes pregnant. First, her schooling is interrupted and she is less likely to make up for this later. Second, as a result of a lower education level, the woman who became a mother as a teen has a lower economic level and is more likely to be on welfare if she does not marry. Third, the teen parent may have an increased family size, partly due to increased number of childbearing years. And fourth, if the pregnant teen decides to marry either before or after the birth of the baby, the marriage is more likely to dissolve.

An overview of the literature pertaining to the etiology of adolescent pregnancy, the medical risks to mother and infant and the consequences of adolescent childbearing was presented in the previous section. The research on adolescent pregnancy was summarized by Baizerman et al. (1974). Their general conclusions were: (1) lack of concensus on the concepts and variables for study, (2) lack of explicit theoretical and research models, (3) lack of prospective longitudinal studies of girls before they become sexually active, (4) poor research methodology, (5) failure to control for "prenatal care" on outcome of pregnancy, (6) few studies that examine social stress factors in adolescent pregnancy, and (7) lack of research on personality, mental status and pregnancy behavior. So, although etiology, risks, and consequences are well-documented in the literature, the results are difficult to compare and to integrate into a comprehensive picture of the pregnant adolescent.

The pregnant adolescent may experience many negative events as a result of her pregnancy. The question to be explored is what if any, activities will decrease the likelihood of those events occurring and will the adolescent engage in these activities? To explore this question, several steps will be taken. First, the preventive health behavior of adolescents in general will be explored, and second, the preventive health behavior of pregnant adolescents. Do pregnant adolescents engage in activities that will help to assure a positive outcome for themselves and their babies?

Adolescent Preventive Health Behavior

This review of the preventive health behavior of teens will be divided into the following sections: how adolescents view their own health, their behavior on some accepted indices of preventive health action, their perceived need for medical care, their compliance with therapeutic regimens, and the female adolescents' contraceptive behavior. The purpose for reviewing the literature pertaining to preventive health behavior of all adolescents is to help clarify why the pregnant adolescent may act the way she does in relationship to her pregnancy.

In general, adolescents rate their health as good to excellent (Brunswick, 1969, 1971; Canlon, 1975). Statistics from the National Health Survey (Vogt, 1975) showed that a larger percentage of adolescents from the highest income level (37.2%) rated their health as excellent compared to 15.4% of the lowest income group. White adolescents were more likely (27.9%) to rate their health as excellent compared to black adolescents (18.0%). Boys were more likely than girls to report excellent health (24.5% to 20.6%) and younger girls perceived themselves as in excellent health more often than older girls (28.5% to 24.4%). Overall, 10.3% of adolescents from the same study reported having a health problem.

The primary cause of death for adolescents was motor vehicle accidents which accounted for 36% of all adolescent deaths in 1976 (Kovar, 1979). Accidents and violence together

accounted for 70% of all adolescent deaths (Kovar, 1979). As these deaths can in some way be related to the behavior of the adolescent, it would seem that adolescents do engage in behavior that increases the probability of either immediate adverse health consequences or of later disease or disability.

Smoking is one behavior in which adolescents engage that has known health consequences. From data that was collected from 1966 to 1970, the National Health Survey reported that 14.3% of all adolescents from the ages of 12 to 17 were regular cigarette smokers, 31.3% did not smoke currently, but had in the past, and 54.3% had never smoked (Scanlon, 1975). Data from 1977 indicate that 52.6% had ever smoked and 46.5% had never smoked (Kovar, 1979). This data would indicate a slight rise in cigarette use.

According to Kovar (1979), is is not a lack of information per se which leads adolescents to smoke. Ninety percent of the adolescents studied believed that the information about smoking is true and that cigarette smoking was harmful (Kovar, 1979). She concluded that adolescents that continue to smoke despite the knowledge that it can be harmful, lack the ability to apply this knowledge and put it into practice. Factors other than knowledge of risks, such as peer pressure, may also contribute to this behavior (Kovar, 1979).

Dental care is another area of adolescent preventive health behavior reported in the literature. The National Health Survey (Scanlon, 1975) listed seven dental conditions

or symptoms and asked the youths ages 12 to 17 whether they would want to see a dentist if they had any of them. Sixty-five percent of the youths indicated they would definitely want to see a dentist if they had a hole or cavity in a tooth, even if it did not hurt. Girls were more likely than boys to definitely want to see a dentist for each of the seven conditions. As for the frequency of actual visits to the dentist, 56.3% had seen a dentist within the past year for a check-up, 13% had seen a dentist for a check-up within the year or two before that and 11.6% had never seen a dentist for a check-up (Vogt, 1975). Broken down by race, 60.7% of white youths had had a dental check-up within the past year compared to 27.4% of black youths (Vogt, 1975). In this survey, no comparisons were made to other age groups, so no conclusions could be drawn as to whether these rates were indicative of good preventive health behavior. Also missing were data pertaining to daily preventive dental behavior such as teeth brushing and flossing. However, it was concluded that a majority of youths between the ages of 12 and 17 had seen a dentist for a check-up.

Use of drugs and alcohol are aspects of behavior that affect the health of adolescents. Johnston, Bachman, and O'Malley (1977) reported that more than 90% of the class of 1977 had tried alcohol at least once. However, use does not indicate abuse and the figures that look at current use are lower. Seventy-one percent had used alcohol within the last month and 6% reported daily use of alcohol.

The figures for drugs also indicate that trying a drug does not mean the drug will be used in a way that may affect the teen's health. Sixty-two percent of the class of 1977 had tried one or more illicit drugs, 35% reported using marijuana within the last month and 9% reported daily use of marijuana (Johnston et al., 1977). In 1977, current use of alcohol, cigarettes and marijuana was higher among older adolescents, males, white adolescents and those living in large metropolitan areas, than among their counterparts. Again, no comparisons to an older age group were made, so it is difficult to determine if these youths are more, or less aware of preventive health behavior. Also not considered were the many other facets that go into deciding whether to use these substances, other than an awareness of the health risks.

For overall use of medical services, the National Center for Health Statistics reported that illness rates, use of medical services and death rates are all low for adolescents (Kovar, 1979). Adolescents had, on the average, 2.4 acute conditions per year, missed 4.8 days from school, and made 1.6 visits to office based physicians. For females, 77.3% of these visits were for illness or injury, 21.1% were for examination and observation, and 6.3% were for prenatal care. Therefore, only about one-fourth of all visits to a physician were for preventive health care (Kovar, 1979).

The National Health Survey (Vogt, 1975) reported somewhat higher statistics. Forty-eight percent of the youths

reported that they had seen a physician in the last 12 months for a check-up and 43.5% reported they had seen a doctor for treatment of a medical condition in the last 12 months. Many of these visits may have been for both reasons which could account for the high statistics for check-ups. Teens were most likely to have had a check-up within the last year if they were white, came from a higher income family, lived in the northeast and their parents were educated beyond high school. Brunswick (1971) found that the likelihood of a visit to a physician increased with age. Forty-three percent of 12 to 15 year old girls versus 55% of those 16 to 17 years old reported a visit to the doctor within the prior six months. (This statistic only included nonpregnant/nonmother teens.) All of the pregnant/mother group had seen a physician within the prior six months.

Other investigators have questioned adolescents regarding their utilization of medical services, but no differentiation was made between visits for a check-up versus illness/accident visits (Parcel, Nader, & Meyer, 1977; Sternlieb & Munan, 1972). Sternlieb and Munan (1972) found that 54% of youths aged 15 to 21 claim to see their doctor less than once a year or not at all with 46% seeing their physician at least once a year. No statistics were reported for utilization by sex. Parcel et al. (1977) reported that of the adolescents aged 15 to 18, 27.3% had not seen a doctor in the last year and about 72% had seen a doctor at least once. Sex did not influence the number of visits.

Another indication of preventive health behavior among adolescents is their willingness to follow medical advice once they have seen a physician for a particular health problem. This could also be considered illness behavior, rather then preventive health behavior, but will be discussed because of the relevant findings to female adolescents.

Gordis, Markowitz, and Lilienfeld (1969) studied compliance with physicians' instructions in children and adolescents on oral penicillin prophylaxis against rehumatic fever. They attempted to explore the relationship of a number of demographic, medical and sociological factors to compliance and noncompliance. Studying 128 subjects all of whom were black, had a past history of rheumatic fever and were attending a cardiac clinic, the authors found that noncompliance occurred most frequently in female adolescents. Forty-three percent of the adolescent group were noncompliers compared to 19% of patients, age 5 to 9. Noncompliance did not relate to whether the mother gave her child his daily penicillin or left him on his own to take it. Other factors that affected noncompliance were large sibship, no hospitalization for acute attack, no restriction of activity and the child was unaccompanied by a parent at clinic visits. This study will be discussed later in this chapter in relationship to the health beliefs of these patients and parents.

Litt and Cuskey (1980) pointed out that most of the research on compliance has been done on adults either as patients themselves, or as being responsible for their

child's compliance behavior. Although some findings may be relevant to adolescents, the unique characteristics of this age group warrants study of the determinants of compliance that are specific to adolescents. Litt and Cuskey (1980) explored the role of the adolescent's self-image, family conflict, level of achieved autonomy and stage of physical maturation as factors of potential importance in determining medication compliance, but at the time of writing these studies were as yet unpublished. In contrast to the study by Gordis et al. (1969), Litt and Cuskey (1980) found that adolescent compliance with contraceptives improved if the adolescent was autonomous in relationship to the medical visit, such as making their own appointment, paying their own bills and coming to the physician specifically for the purpose of obtaining contraceptives. It was found that having a consistent physician and scoring high on a standardized adolescent patient satisfaction questionnaire were associated with good compliance measured by appointment keeping (Litt & Cuskey, 1980).

In another study that examined compliance behavior after a disease has been diagnosed, Korsch, Fine, and Negrete (1978) found that of 152 children that had renal transplants, 14 patients had interrupted immunosuppressive treatment. Of these 14, 13 were adolescents (greater than 12 years of age) and 12 of the 14 were girls. There were 36 compliant adolescents. The noncompliant patients tended to show deviant scores on personality tests. Also, among the

adolescent girls, resentment of the cosmetic side effects of the steroid medication was a common reason given for stopping the medication.

The methodology of the studies done as part of the National Health Survey (Scanlon, 1975; Vogt, 1975) lend support to the accuracy of the findings. Large samples were used from different parts of the country, different socio-economic status and different races. The findings would seem to be generalizable to the adolescent population as a whole. However, the study was intended to describe behavior and no attempt was made to try to define why the behavior occurred. Also, as stated previously, daily health behavior such as teeth brushing, exercise and diet were not explored. Another weakness of all studies cited was the lack of comparison to other age groups. Therefore it is difficult to state if adolescents are engaging in preventive health behavior more or less than other age groups. Overall, the literature described the behavior of the adolescent, but did not seem to explore the knowledge, attitudes, values and beliefs that may contribute to that behavior. The concepts that Litt and Cuskey (1980) are using to study compliance behavior (self-image, family conflict, level of achieved autonomy, stage of physical maturation) should also be examined in relationship to preventive health behavior.

The contraceptive behavior of adolescents has been well documented in the literature and examines a situation where

the teen is attempting to prevent a "condition" that does not yet exist. This literature is examined in the following section.

Contraceptive Behavior of Adolescents

One area of adolescent health behavior that is well documented in the literature is the subject of contraceptive behavior. By age 16, one-fifth of U.S. women have had sexual intercourse, by age 19, nearly two-thirds have had intercourse--more than nine in ten of them prior to marriage (Zelnik, Kim, & Kantner, 1979). Evidence also indicates that the level of sexual activity has been increasing. Zelnik and Kantner (1977), in two similar but independent studies in 1971 and 1976, sampled 4,392 and 2,193 households respectively, examined prevalence of intercourse, knowledge and use of contraception, and resolution of pregnancies among U.S. teenagers. They found that 35% of the unmarried teenagers interviewed in 1976 had experienced sexual intercourse as compared to 27% of a comparable group in 1971, an increase in prevalance of 30%. The likelihood of intercourse also increased with age--from 18% at age 15 to 55% at age 19 (Zelnik & Kanter, 1977).

Rogel et al. (1980) found a higher rate--83.9% of the female adolescent population is sexually active. The literature varies as to what percentage of sexually active teenagers use contraception. Some of the differences may be due to the various ways contraception use can be defined,

i.e., ever used, currently using, and used at last intercourse. Kantner and Zelnik (1977, 1973) conducted a two-part study which examined all of these definitions. In 1971, interviews with 1,342 sexually active 15-19 year old teens revealed that 15.7% reported never using contraception; 62.9% reported sometimes using contraception and 17.0% always used contraception. Forty-seven percent reported using contraception at last time of intercourse (Kantner & Zelnik, 1973). (It should be pointed out that in this study, contraception use can range from the unreliable methods of withdrawal and rhythm to the more reliable methods of IUD and birth control pills.) When similar interviews were repeated in 1976, a dramatic increase in the use of contraception was observed (Zelnik & Kantner, 1977), especially at time of last intercourse which increased from 47% to 63.5%, and those always using contraception from 19% to 30%. Moderating this picture was the finding that more teens reported never using contraception--up from 15.7% in 1971 to 25.6% in 1976.

Other studies seem to have similar findings. Rogel et al. (1980) found that 33% (n=40) of the teens never used birth control, 39.4% (n=47) said they always used it, and 27.6% (n=33) reported all the variations in between. Goldsmith (1972) studied three groups of sexually active teens and found the contraceptive use to be 87% (n=183) among the contraceptors, 76% (n=76) among the group planning an abortion, and 62% (n=42) among the maternity group. Pressor (1974)

examined contraceptive usage among teens prior to their first birth and found that 55% (n=71) of women aged 15-19 had never used any contraceptive method. This contrasted with 32% (n=49) for those aged 20-23 and 13% (n=16) for those aged 24-25.

These figures indicate that a majority of sexually active adolescent females use contraception at least some of the time. The reasons teens give for not using contraception has been examined in several studies. Goldsmith et al. (1972), in a study of 368 adolescents, found that 34% felt that they could not get pregnant and the same amount (34%) did not seek birth control because it was a "hassle." Other reasons cited were: should not have intercourse (17%), "deep down" want the pregnancy (20%), not natural (16%), messy (11%), embarrassed to ask boy (10%), and boy would not use method (9%). Rogel et al. (1980), in a study of 120 adolescents, reported the most frequent responses on a forced choice questionnaire to be "just took a chance" (68%), "fear of safety or side effects" (61%), and "didn't expect to have intercourse" (48%). Shah et al. (1975) found that "time of month" was the most frequent response when teens were asked why they did not use contraception (n=976). Almost 40% (n=390) gave this reason. Other reasons were "low risk" (31%), nonavailability (30.5%), hedonistic objection (23.7%), want pregnancy (15.8%), and moral/medical objections (12.5%).

The fact that all three of these questions offered forced choice answers may explain some of the lack of comparability

between the answers. Rogel (1980) also asked an open-ended question regarding reasons why contraception was not used and the responses fell into these categories: the teen took responsibility for non-use ("don't want to," "didn't think I could get pregnant"), put responsibility on others (my mother doesn't want me to"), and abdicated responsibility ("no reason," "forgot"). The largest number (40%; n=48) fell into this last category.

Despite the dissimilarity in answers of the three forced choice questions, a common thread seems to run through the most frequently given response to each question. Most of the teens felt that they just would not or could not get pregnant. This belief could be due to a lack of knowledge as to when the most fertile time of the cycle occurs or to a general belief that pregnancy just could not happen to them.

The fact that lack of knowledge may contribute to the belief that a teen will not become pregnant was demonstrated by Zelnik and Kantner (1977). In both 1971 and 1976, they asked unmarried women between the ages of 15 and 19 when, during the menstrual cycle they were at the greatest risk of pregnancy. In 1971, 16% of the blacks and 40% of the whites were able to identify this period correctly. For whites, the older and more sexually experienced they were, the more likely they were to have the correct response. For blacks, neither age or sexual experience contributed to this knowledge. For all teens in 1971, 37.6% were able to identify the

correct time of the menstrual cycle when pregnancy was most likely to occur.

In 1976, this figure rose 3 percentage points to 40.6%. Again, whites fared better than blacks. Of white females, 43.9% compared to 23.5% of black females were correct in their response. Although these figures do show an increase in knowledge, they are not large, especially for whites.

Lack of knowledge, therefore, may contribute to a teen's belief that she is not susceptible to becoming pregnant. But, what factors do contribute to a teen being more likely to use contraception on a regular basis? Goldsmith et al. (1972) found the contraceptive group was significantly more oriented toward higher education and the postponement of marital plans resulting in the conclusion by the authors that these girls are more achievement oriented and more apt to plan their lives. Shah et al. (1975) found very similar results. They found that the percentage of teenagers who reported always having used contraception increases with the respondents' educational aspirations and with the level of education of the woman who raised her. Marital plans were only preditive of usage for blacks with no plans to marry or plans at least a year away "contributing to contraceptive use."

Furstenberg (1976) found that in homes where both the mother and daughter reported discussing birth control, more than half of the adolescents (52%) had had some experience with birth control compared to less than one-fourth (23%) from families in which no guidance was given. This led

Furstenberg to conclude that when contraception was discussed openly, the daughter was thus allowed to acknowledge her own sexuality and to see sex as a planned, controllable act, rather than spontaneous and uncontrollable. It should be noted, however, that Furstenberg's sample consisted of pregnant teenagers.

Roger (1980) looked at contraceptive usage from a cost/benefit perspective. As a high percentage of his sample of largely urban black adolescents identified safety and side effects as their reasons for non-use, and the costs of a pregnancy are perceived as low, as pregnancy out-of-wedlock is well accepted in their culture, the benefit of non-use (delaying pregnangy) did not outweigh the costs as perceived by them (possibility of side effects). Also the need and desire for physical intimacy was seen as a benefit of sexual activity.

In summary, a majority of teens are willing to engage in the preventive health behavior of contraceptive use at least some of the time. However, this use seems to be sporadic and may be based on multiple factors affecting each teen. Some of the factors that seem to contribute to high usage are educational aspiration of the teens, education and occupational level of parents who raised the teen, postponement of marital plans, and acceptance of sexuality. Also, the benefits of using contraceptives have to outweigh the potential costs. These factors seem to indicate that the teen who realizes that an unwanted pregnancy may

interfere with life plans or goals will be more likely to use a contraceptive than a teen who may have very little to lose by an unplanned pregnancy. In other words, the impact of the pregnancy influences the teen toward preventive health behaviors.

Summary

Adolescents are a relatively healthy population. The chronic diseases of adulthood have not yet begun. Because adolescent morbidity and mortality rates are low, there are few conditions to which the adolescent is susceptible in the immediate future. The developmental tasks of developing an identity and independence from the family may lead the adolescent to engage in behavior that has serious health consequences. The adolescent may have knowledge that this is harmful to her health, but having other needs met takes precedence over health concerns. Most deaths in adolescents occur as a result of some behavior on the adolescent's part. While the use of substances, such as nicotine, alcohol and drugs, may be high in adolescents as a result of their need for experimentation, the abuse of these substances is substantially lower, but still exists.

Despite the adolescent years being relatively healthy compared to other periods, the literature showed a majority have seen the doctor and dentist for preventive care and/or treatment. This was more likely to occur when the adolescent came from a white, upper class family. When the

adolescent was found to have a health problem, females have been shown to be the least likely to comply with the therapeutic regimen. The various factors that contribute to compliance are complex and interrelated and are not well documented in the literature.

Specifically, in regards to contraceptive behavior, the use of effective contraception by teens is low, but has been increasing, and teens are most likely to use a contraceptive if a pregnancy would interfere with future goals and plans.

To relate the literature on preventive health behavior of all adolescents to pregnant adolescents, it would seem that the pregnant adolescent would have had some experience with preventive health behavior, especially if she came from a white, higher socio-economic family. A majority of adolescents have seen a doctor and/or dentist, especially for illness/accident visits. Adolescents do engage in behavior that may have adverse health consequences, which may help explain why adolescents do become pregnant. What the literature does point out is that the pregnant adolescent comes from a population that is relatively healthy, so she may not be accustomed to thinking in terms of being susceptible to health problems. A teen will be more likely to use contraception if a pregnancy would have adverse consequences for her, so the population of pregnant adolescents may represent a majority of teens for which a pregnancy would not negatively effect their life plans and goals.

Ways that the pregnant adolescent does engage in preventive health behavior will be presented in the next section.

Preventive Health Behavior of Pregnant Adolescents

Before her pregnancy, the adolescent comes from an age group that has low morbidity and mortality rates compared to other age groups. But now she is a member of a high-risk group that may have increased medical and social risks compared to older pregnant women. Therefore, she needs to change her frame of reference from low-risk to high-risk in terms of health needs.

One aspect of preventive health care that was discussed in the literature was the utilization of prenatal care. This aspect of care was discussed in relation to when prenatal care was started and total number of prenatal visits. Earlier registration for prenatal care could be viewed as an indication that the teen is aware of the importance of prenatal care during pregnancy. Several studies were found that compared the prenatal care of adolescents with older pregnant women. Hendry and Shea (1980) found that the pregnant adolescents in the sample (age 18 and younger) sought less prenatal care than the adult mothers (age 19 and up). The adolescent mothers made an average of 9.0 prenatal visits, generally starting their care between the eighth and twentieth week of gestation. The adult mothers made an average of 12.1 visits starting their care between the sixth and tenth week of gestation. Although this study had an extremely small sample

(22), these findings are supported by Dott and Fort (1976) who studied 414 births to women under 15 years of age. Twenty-three percent of the teens under 15 had more than nine prenatal visits compared to 62.5% of all women. The median number of visits for women over 15 years of age was 12.9, for women under 15 years, 3.3 (Dott & Fort, 1975). Perkins, Nakashima, Mullin, Dubansky, and Chin (1978) compared three groups that obtained prenatal care at different clinic sites. Of the two groups that were pregnant teens, (A&B), 3.7% and 11% had received their first prenatal visit by the twelfth week. Of the group that had older pregnant women, (Group C) 13% were registered by this time. Sixty-eight percent and 52% respectively of Group A & B had 7 to 19 visits, while 73% of Group C had this number.

According to these findings, pregnant adolescents do tend to register for care later than older pregnant women and they receive fewer prenatal visits. Comparisons between studies are difficult due to different age cohorts, and different clinic procedures that may account for some of the differences. In addition, all the studies cited were for teens who obtained their prenatal care through clinic services. No studies have been reported that utilize patients from private care settings and thus explore the behavior of teens from a different socioeconomic class. The quantity of prenatal care received may be influenced by factors other than age, so it would be difficult to conclude that these statistics represent a decreased level of prenatal care

based on age alone. Other socioeconomic factors that may play a part are race and marital status. Dott and Fort (1975) reported that white women had more visits than non-white (12.1 to 7.7) and married women had more visits than unmarried (11.1 to 6.7). Therefore, this area needs further study in a way that will account for these other variables.

Attendance at prenatal classes is another aspect of preventive prenatal health behavior. Prenatal classes are an accepted way in the American culture of learning about pregnancy and different behaviors that may contribute to a healthy pregnancy and outcome. In general, these classes are geared toward a selected population of society. Watson (1977) found that the classes are attended by couples who are well educated, 26 years or older, are referred to classes by word of mouth, or by their physicians and are employed in professional, technical, or managerial occupations. Needless to say, these classes are not well attended by pregnant adolescents who may or may not be accompanied by the baby's father. The teens that do attend a clinic for prenatal care will possibly have an opportunity to attend classes there as part of the clinic services (Bonovich, 1981; Chanis et al., 1979; McAnarney et al., 1978; Youngs et al., 1977). Only one study reported attendance rates at these classes. McAnarney et al. found that 66% (n=77) of the study population attended prenatal classes and of the 66%, 73% (n=12) attended "regularly." No attempt was made by these authors to define differences between those adolescents attending

the classes and those that did not attend, as this was not the purpose for the study.

Despite the fact that prenatal classes are a standard part of many prenatal clinics, few articles seem to explore the rationale for and the effectiveness of these classes. Copeland (1979) recognized that traditionally, prenatal classes are usually implemented in a highly structured format with little input from the adolescent herself as to what she would like offered. In order to develop classes that would meet the adolescent's needs, Copeland asked 15 primigravidas 15 to 19 years of age to identify subject matter that needed to be included in a prenatal class. The findings revealed that these adolescents tended to select topics that were self-oriented, with the most important topic identified as the labor and delivery process. Other than this, the other traditional prenatal class topics were not the major concerns. Sixty percent of the teens identified group discussion as the type of class they prefer, in which the girls can discuss anything that is bothering them. Eighty percent felt that prenatal classes are very important or important.

The small sample size prevents generalization to the general population of pregnant teens. However, the study does seem to be an initial step in analyzing what the teen wants to learn and if she feels the classes are important.

McAnarney et al. (1975) asked the teens enrolled in a prenatal clinic to evaluate the care they had received. Seventy percent chose the prenatal classes as the part of

the program they liked the best. However, in contrast to Copeland's findings, the adolescents did not like the group sessions. The authors postulated that because these sessions took place during the first trimester, the teens were unable to discuss something they had not yet accepted.

Peoples (1979) and Barrett and Peoples (1979) also explore the structure and effectiveness of group sessions held during clinic time. After recognizing that the attendance at the group sessions was not consistent, they changed from mandatory attendance at every session to voluntary attendance. However, a verbal contract was set up with the teen that she would attend at least three group sessions. Barrett and People's report does not include data as to the attendance rates before or after this change, nor is there an examination of personal characteristics of the attenders and nonattenders. Personal correspondence with the authors was not helpful as these statistics were not kept. Without statistical data, no conclusions can be made, but the authors did attempt to change the format of the class based on what they perceived the needs of the teens to be. Barrett and Peoples (1979) also found that, consistent with McAnarney et al. (1975) and in contrast to Copeland (1979), the teens preferred classes containing didactic information and the emotional aspects of the pregnancy were discussed on an individual basis.

This data does suggest that, given the opportunity, adolescent teens do attend prenatal classes, but there is

conflicting data as to the type of class that is most effective and what the content of that class should be. As with prenatal visits, all of the reports are based on data from clinic sites, so there is no information on class attendance, or if there are classes available, for teens that receive their prenatal care from the private sector. It might be hypothesized that the teens receiving care from private physicians might be more likely to be attending school and would therefore receive prenatal education in this setting. No data could be found to support or refute this.

Another aspect of preventive health behavior to be considered is the area of diet and nutrition. Morse, Clarke, Keeper, Merrow, and Bee (1975) compared the dietary, biochemical and anthropometric measurements of pregnant adolescents with pregnant adults. They found that overall, the adolescents had better levels than anticipated, but there were several areas that indicated the adolescents did need increased support. The adjusted mean hemoglobin of the 12-17 year olds was significantly lower than those of the three other groups. Also, the plasma ascorbic acid levels, although still within normal limits, were lowest for the 18-19 year olds and the 12-17 year olds had the next lowest level in the antepartum period. Similar hemoglobin findings were obtained by Hendry and Shea (1980) who reported that the mean maternal hemoglobin one week postpartum was 9.8 for the adolescent mothers and 12.6 for the adult mothers. Youngs, Niebyl, Blake, Shipp, Stanley, and King (1976) found

that 90% of the adolescents enrolled in a prenatal clinic had hematocrits of 32 or greater. This study did not have a comparison group.

Ancri, Morse, and Clarke (1977) compared the nutritional status of pregnant adolescents with pregnant adults on the basis of maternal protein, calorie intake, and weight gain. They found that the youngest age group (12 to 17 years), had a significantly higher weight gain and the oldest group (25 to 32 years) had the lowest weight gain. The amount of weight gained was a function of the length of gestation, but was not influenced by calorie intake of the mother. Also, there was no significant correlation between the infant's birth weight and the mother's mean protein or calorie intake during pregnancy. The authors explained this by reasoning that the subjects were in reasonably good nutritional status before entering pregnancy and that quality of nutrition since childhood has a greater influence on birth weight than does calorie intake. Infant birth weight did correlate with both the mother's age and the length of pregnancy.

According to the studies cited, pregnant adolescents do tend to gain more weight during pregnancy and have lower hemoglobin levels than older pregnant women. These factors may or may not have a detrimental effect on themselves or their babies. Factors that occurred prior to pregnancy such as nutritional status may also be influential.

The use of alcohol, nicotine and other drugs during pregnancy was reported in one study. Youngs et al. (1976)

found that half of the patients smoked cigarettes at the time of entering into prenatal care and about 25% drank some form of alcoholic beverage. Marijuana was being used by about 10%. These figures are roughly comparable to the statistics cited for adolescents in general.

In summary, the literature suggests that pregnant adolescents do not engage in preventive health behavior as much as older pregnant women. They tend to register for prenatal care later, have fewer number of prenatal visits, and have a poorer nutritional status. Although these are some indicators of preventive health behavior, there are many other facets to this problem. How aware are pregnant teens of their good health behavior in their day-to-day choices, and do they change their behavior as a result of the pregnancy? Do they cut down on drug use and smoking as a result of their pregnancy? Do they increase their intake of nutritious foods? The literature cited does not provide definitive answers as to the extent of preventive health behavior among pregnant adolescents.

Health Beliefs of Pregnant Adolescents

No studies could be located that measured the health beliefs of adolescents in general, pregnant adolescents, or pregnant women of any age. In several studies that measured the health beliefs of mothers of pediatric patients, adolescents were included in the patient sample (Becker, Nathanson, et al., 1977; Becker, Radius, et al., 1978; Kirscht, Becker,

et al., 1978). or adolescents were part of the parent sample (Becker, Drachman, et al., 1972) or adolescents were included in both the parent and patient sample (Kirscht, Becker, et al., 1976).

Gordis, Markowitz, and Lilienfield (1969) although not measuring health beliefs directly, did measure two concepts that are part of the health belief model in looking at compliance behavior. In a group that consisted of 136 children who had a history of rheumatic fever and were on oral penicillin, noncompliers were more likely to be female than male and noncompliance increased with age. Forty-three percent of the adolescent group were noncompliers, compared with 19% of patients age 5 to 9 years. The investigators examined differences in the perception of the severity of rheumatic fever between the compliers and the noncompliers. In the adolescent age group, 37% of the noncompliers agreed with the statement--"If a person is going to get another attack of rheumatic fever, he'll get it no matter what he does," compared with 11% of the compliers. This would indicate the mothers of the adolescent patients did not believe the treatment (oral penicillin) would be effective in preventing an attack of rheumatic fever. An advantage of this study is that the adolescent age group was given special consideration in looking at compliance behavior. However, a major drawback is that the beliefs expressed above were the beliefs of the adolescents' mothers so the adolescents were still viewed in a dependent position in relation to their own

health care. Another interesting finding of this study is that compliance was more frequent when the adolescents were accompanied by their mother, leading the authors to question the validity of encouraging adolescents to be independent in maintaining their own health needs.

Of more direct relationship to the present investigation, adolescents' knowledge of the impact of pregnancy in adolescence was examined in one study. This study did not measure beliefs but the results do seem to pertain to this concept enough to warrant reporting. Walters, McKenry, and Walters (1979) assessed the knowledge of 1,200 high school youth with reference to factors related to adolescent marriage and pregnancy and maternal and newborn health. The authors concluded that these adolescents were aware of the impact which an early marriage and pregnancy would have on their lives, but were relatively unaware of the immediate consequence of an early pregnancy in terms of the welfare of the mother and child. For example, only 25% knew that maternal age is related to the birth weight of infants, 32% knew that a relationship exists between the quantity of medical care during pregnancy and the birth weight of the infant and only 40% knew that teenage mothers have more premature babies than mothers over 20. In other words, these adolescents did not seem to be aware of the immediate impact of an adolescent pregnancy.

The knowledge of adolescents who had been or were pregnant with adolescents who had not experienced a pregnancy

were also compared in the Walters et al. study (1979). On those items that did show at least a 10% difference in correct responses, the never pregnant group responded correctly more often than the pregnant group. However, mean differences were slight, and the authors concluded that neither group fully understood the impact of an adolescent pregnancy.

Ryan and Sweeny (1980) also demonstrated that pregnant adolescents are not aware of the impact of that pregnancy on their lives. Although 83% (n=72) were not working during their pregnancy, 66% (n=57) planned to work after the baby was born. Eighty-six percent (n=75) planned to finish high school, although 77% (n=67) were only in the tenth grade or less. Fifty-five percent (n=48) continued to plan a career. Forty-six percent (n=40) planned to support themselves and their babies on welfare.

In summary, the health beliefs of pregnant adolescents are not reported in the literature. Adolescents have generally not been viewed as a separate group, but are studied either as part of the pediatric population or the maternal population. Adolescents in general seem to be unaware of the impact of an adolescent pregnancy. Pregnant adolescents themselves are unaware and unrealistic about the impact of pregnancy on their lives.

Indications for Current Study

As pointed out by Litt and Cuskey (1980), the adolescent age group warrants further study to explore determinants of compliance behavior. This would seem to be true for other health behavior other than compliance behavior. The current study examined the health behavior of adolescents in relation to attendance at a prenatal class and in addition attempted to define some of the factors that may contribute to class attendance. Therefore, it goes beyond many of the studies cited that describe behavior by attempting to define the health beliefs that contribute to this behavior.

One of the weaknesses of the literature on pregnant adolescents described by Baizerman et al. (1974) was addressed by the current investigation. These authors state that the literature lacks research on the personality, mental status, and pregnancy behavior of pregnant adolescents. The preventive health behavior in relation to the pregnancy was examined by this study. Also, the study attempted to explain this behavior in terms of the Health Belief (Becker, 1974), and Engagement Models (Jenny, 1978).

Conclusion

The current literature pertaining to the pregnant adolescent, the preventive health behavior of adolescents and pregnant adolescents, and the health beliefs of pregnant adolescents was discussed in this chapter. The current study is important due to the lack of literature on the health

beliefs of pregnant adolescents. The methodology used to conduct the study will be presented in Chapter IV.

CHAPTER IV

METHODOLOGY AND PROCEDURE

Overview

This descriptive study was designed to identify what differences there are between pregnant adolescent's who attend a prenatal group learning situation and those that do not. Specifically, the characteristics being examined are: (1) personal descriptive data, (2) social characteristics, (3) degree of identity formation, (4) perceived susceptibility to complications, (5) perceived impact of the pregnancy, and (6) perceived benefit of preventive health behavior (perceived prescription utility).

From a sample of pregnant adolescents living in Western Michigan, the data was compiled using a three part instrument. In Part A, data obtained included information about demograhic variables such as age, level of education, future plans for school, and source of income. In Part B, the pregnant adolescent's present level of achievement on one of the developmental tasks of adolescence, identity formation, was determined. In Part C, the health beliefs of the pregnant adolescent in terms of her perceived susceptibility, perceived impact and perceived benefit was ascertained. To

measure the pregnant adolescent's participation in preventive health behavior, her attendance at a prenatal class was recorded based on the percentage of classes she attended. Results of the data provided by the instrument were analyzed by Pearson Product Moment Correlation and discriminant analysis to determine the differences in characteristics between attenders and nonattenders at the classes.

The problem statement for this study was: What differences are there in characteristics between pregnant adolescents who attend a prenatal group learning situation and pregnant adolescents who do not. The hypotheses are:

1. There is a relationship between the attendance of pregnant adolescents at a prenatal class and personal descriptive data.
2. There is a relationship between the attendance of pregnant adolescents at a prenatal class and social characteristics.
3. There is a relationship between the attendance of pregnant adolescents at a prenatal class and the degree of identity formation.
4. There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived susceptibility.
5. There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived impact.

6. There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived prescription utility.
7. There is a relationship between the attendance of pregnant adolescents at a prenatal class and total health belief score.
8. Given the health beliefs of perceived susceptibility, perceived impact and perceived prescription utility and degree of identity formation, it is possible to discriminate between attenders and non-attenders.

In this chapter, the methodology of the study including sample criteria, content of the instrument, pretest of the instrument, reliability and validity of the instrument, data collection procedure, scoring and data analysis will be described.

Sample

The sample selected for the study was unwed, primipara adolescents between the ages of 15 and 19 who had elected to keep their baby, were in the twentieth week or later of gestation, had no known chronic diseases and had been referred to a prenatal class. Younger adolescents were excluded as they were considered different from older adolescents, both in psychological factors and physical maturity (see Chapter I). Also, married adolescents were excluded as they have different dynamics taking effect in their life

which could have effected the results of the study. By choosing adolescents in the latter half of their pregnancy, increased uniformity in the perception of pregnancy was sought.

Other factors that may affect the perception of pregnancy were used to exclude participants. The adolescent must have decided to keep the baby following delivery. The pregnancy was the first one for the adolescent and she had to be in good health prior to becoming pregnant. Adolescents with a chronic disease prior to becoming pregnant, such as diabetes, epilepsy or heart disease, may have had increased contact with the health care delivery system and would therefore have a different perception of the importance of health care during their pregnancy.

The sample was chosen by convenience sampling from three sites: a health department prenatal class and two out-patient clinics associated with area hospitals. Forty-two participants were initially included in the study.

To summarize: the following criteria were used to select the sample:

1. Age--range between 15-19
2. Primipara
3. Unmarried at the time of data collection
4. In the twentieth week or later of gestation
5. Elected to keep their baby after delivery
6. Healthy with no known chronic diseases prior to becoming pregnant

7. Referred to a prenatal class
8. Willing and able to participate in the study

Description of the Prenatal Classes

One of the sites used for the collection of data was the Ottawa County Health Department Prenatal Class. The class was offered to any interested adolescent who was pregnant. The sessions were held four times a year, once a week for four weeks, three hours each week. Sessions were held in the morning. The class was coordinated by a health educator and taught by the health educator, a community health nurse and various other professionals from the community. The goal of the prenatal class was to increase the pregnant adolescent's knowledge and understanding of her pregnancy and the impact the pregnancy may have on her life. The method of teaching was primarily group discussion. The content of the class included information about anatomy and physiology, labor and delivery, nutrition, family planning, drugs and smoking, a tour of the obstetric unit, conditioning exercises, and discussion about future plans. This class was not associated with a prenatal clinic.

The other two sites used for data collection were associated with out-patient clinics that were affiliated with area hospitals. The goals, method of teaching and class content were essentially the same as the classes offered through the health department. Unlike the health department classes, the classes through the clinic were

offered at the same time as the clinic sessions (which were in the morning) so an extra trip to the clinic was not necessary to attend the class. At one clinic, the classes were taught by health department personnel, at the other clinic an employee of the hospital (an RN) organized and taught the class. Class attendance was expected at the clinic sites, but was not mandatory.

Operational Definitions

1. Personal descriptive characteristics are indicators that reflect an individual's life style and socio-economic status. This variable describes the pregnant adolescent's present living situation such as who she lives with, her source of income, marital plans, and educational status (see Appendix C, Part A, Questions 1, 6-11, 13).
2. Social characteristics are those variables which describe an individual's contact with other human beings and with society at large. These questions pertain to the pregnant adolescent's contacts with and relationship to people outside of her immediate family such as the health care system, educational system, and interpersonal relationships (see Appendix C, Part A, Items 2-5, 12, 14-17).
3. Developmental level refers to the extent of completion of the developmental task of identity formation, which is one of the primary tasks of adolescence.

Identity formation was measured by the Ego Identity Scale (Tan, Kendis, Fine, & Porac, 1977; see Appendix C, Part B).

4. Health beliefs are the set of beliefs the pregnant adolescent holds regarding herself and her pregnancy. The health beliefs are:
   a. Perceived susceptibility--belief that she is susceptible to complications, either physical or emotional, during her pregnancy (see Appendix C, Part C, Items 1-8).
   b. Perceived impact--belief that these complications and/or the pregnancy itself will have at least a moderate impact on her life (see Appendix C, Part C, Items 9-21).
   c. Perceived prescription utility (benefits)--belief that taking the prenatal class would be beneficial by reducing the possibility of developing complications and increase her ability to handle the impact of the pregnancy on her life (see Appendix C, Part C, Items 22-30).
5. A prenatal group learning situation is a structured, planned class, meeting at regular intervals for the purpose of increasing the participant's knowledge of pregnancy, labor and delivery, the post-partum period and any related issues.

Instrument

The content for the questionnaire emerged from a literature review and the experiences of the investigator with pregnant adolescents.

Part A of the instrument asks for data related to the personal descriptive and social characteristics (see Appendix C).

In Part B of the instrument, one aspect of the developmental level of the adolescent was determined. The purpose of this section was to determine if all the adolescents in the study were in the stage of late adolescence so as to control for this variable. The Ego Identity Scale used was developed by Tan et al. in 1977 as a short, objective, reliable measure of Eriksen's concept of ego identity. The Ego Identity Scale is a 12 item scale with a forced choice format (see Appendix C).

In Part C of the instrument, the health beliefs of the pregnant adolescent in the areas of susceptibility, impact and prescription utility were measured. In the review of the literature, no studies were found which measured the health beliefs of adolescents, pregnant adolescents, or pregnant adults. The wording of the questions was derived from other questionnaires used to measure the health beliefs of adults (Becker, 1974). The content for the questions regarding susceptibility and impact were formulated after a review of the literature. Questions pertain to complications and problems to which adolescents are prone during and after

their pregnancy. The questions for the perceived prescription utility section deal with the pregnant adolescent's attitude toward accepted preventive health measures during pregnancy (see Appendix C).

Pretest of the Instrument

The questionnaire was pretested on three pregnant adolescents attending an alternative high school for pregnant adolescents. The purpose of the pretest was to identify any problems with the wording or administration of the questionnaire, prior to the actual data collection. The three pregnant adolescents fit the criteria of the study for age, marital status, plans for keeping the baby, and primipara status. After completing the questionnaire, the participant and the investigator reviewed each section for clarity of wording and directions. Following the pretest, no changes were made in the wording of the questions. However, the verbal directions were changed to include a statement that the last part of the questionnaire measured what the participant <u>believed</u>, as one teen confused this with what she had been taught.

Reliability

The internal consistency of the instrument was determined by the coefficient alpha. This coefficient measured the degree of consistency or accuracy with which the instrument measured the health beliefs of the adolescent. The Ego Identity Scale had been pretested for reliability during its

construction (Tan et al., 1977). The 12 items had an average inter-item correlation of .114 and an odd-even split half reliability of .68.

Validity

Validity means that the instrument measures what it is intended to measure. Content validity, one type of validity, refers to how representative the questions are of all questions that could be asked about that topic. With the instrument under discussion, the investigator was concerned with whether the questions were representative of all the questions that could be asked about the health beliefs of pregnant adolescents. The content validity of an instrument is based on judgment and cannot be measured objectively. The questions for the instrument were formulated after a careful review of the literature, which is one way of improving the validity of an instrument. Also, the questions were scrutinized by consulting experts knowledgeable about pregnant adolescents, for their input on the content validity.

The construct validity of the Ego Identity Scale was assessed by correlating the scores achieved on the Ego Identity Scale with the scores achieved on five other personality variables. It was reasoned by the authors that these other personality variables would be present among individuals who had achieved successful resolution of other psychosocial crises (Tan et al., 1977) and therefore would be more likely to have achieved ego identity. The

correlations reached statistical significance at .05 level with the Internal Locus of Control Scale indicating autonomy (.26), with Intimacy versus Isolation Scale (.25), and with the Tomkins Left Scale (.26), which reflects the extent to which an individual derives his values from his own life experience rather than adopting the values held by various reference groups. The scale had significant negative correlation with the dogmatism scale, demonstrating that the scale does not measure a "foreclosed" identity with no real crises, but rather identity achievement as a result of an identity crisis (Tan et al., 1977). The only personality variable the scale did not correlate with significantly was trust versus mistrust. The authors concluded that the evidence for construct validity was good.

Data Collection Procedure

Different data collection procedures were used based on the different sites used for data collection.

The organizer of the prenatal classes for Ottawa County Health Department received the names of potential participants four to six weeks in advance of each class session. The organizer would then identify the potential participants that fit the criteria for the study. When the organizer contacted the teens to inform them of the prenatal class, she also asked those teens that fit the criteria whether they would be willing to participate in the study. After the teen gave her consent, the organizer of the classes gave these names to the investigator with addresses and phone

numbers. The investigator contacted each girl and arranged for a time for the investigator to deliver the questionnaire to the potential participant. In the event that the potential participant did not have a phone, a home visit was the initial mode of contact.

The questionnaires were delivered to the teen's home. At this time, the investigator gave the pregnant adolescent another description of the study and gave her an opportunity to ask questions. The participant was not told that her attendance at the prenatal class would be recorded. When, after this explanation, she expressed a willingness to participate in the study, she signed the consent form (see Appendix A) and was given a copy of the questionnaire. The investigator also gave the participant instructions as to how to complete the questionnaire. Arrangements were made for the investigator to return in two to three days to pick up the completed questionnaire.

The data collection procedure at the out-patient clinics was different as the data collection occurred at the clinic rather than the teen's home. This modification in procedure may have introduced factors that influenced the outcome of the study. During clinic sessions, the clinic coordinator would screen each patient for eligibility in the study. If the patient fit the study criteria, the clinic coordinator would briefly explain the study and ask the teen if she was willing to participate. If she agreed, the investigator would meet with the teen immediately and give

a further explanation of the study. This explanation stressed that the questionnaire was not a test, that there were no right or wrong answers, and that their answers should reflect what they believed to be true about themselves, not what they had learned. The teen was then given an opportunity to ask questions. If she agreed to be in the study, the teen signed a consent form (see Appendix A) and was asked to complete the questionnaire during the clinic visit. Two potential participants, one from site 2 and one from site 3 declined to participate. At site 2, the teen was allowed to remain in an empty examining room to complete the questionnaire. At site 3, the teen usually returned to the waiting room as there was a possibility she would be called to see the physician. If she was, she completed the questionnaire after seeing the physician and before she left the clinic. The investigator was available if questions arose while the teen was completing the questionnaire. Twenty-nine participants were obtained from site 2 and 11 from site 3.

There is one major reason why the modification in study design may have influenced the results of the study. The original design planned for the questionnaire to be completed before the class sessions started so that the class content would not have affected the teen's health beliefs. However, at the clinic sites, it was possible that the pregnant adolescent may have already attended some of the classes prior to completing the questionnaire. An attempt was made to get

as many participants as possible around the twentieth week of pregnancy, but only taking these teens would have extended the data collection period beyond a reasonable period of time. The modification in design was necessary because prenatal classes that were planned specifically for the pregnant adolescent and were independent of a clinic site were not available in the community after the original site was discontinued.

The second phase of the data collection procedure was the same as for the health department classes. At the time the teen delivered, her attendance at the prenatal classes offered at the clinic site was recorded. A debriefing letter was then sent to the teen (see Appendix B).

Scoring

The data obtained from Part A of the instrument described the personal descriptive and social variables of the pregnant adolescents that participated in the study. This data was summarized and described.

Part B of the instrument described the degree of identity formation for each adolescent. The participant received a score of one for choosing the alternative that indicated poor ego identity and received a score of two for choosing the alternative that indicated strong ego identity. The sum of the scores was divided by the total number of items to obtain a mean score for each participant. The potential range of mean scores would then be 1.00 to 2.00. No attempt

was made to define an arbitrary point along this range that signified weak or strong ego identity.

The items in Part C of the instrument, which measured the health beliefs of the adolescent, were weighted on a four point Likert type scale, with a score of four for the answer that indicated the adolescent had high health beliefs for the category of susceptibility, impact or prescription utility, and a score of one for the answer that indicated low health beliefs. A mean score was computed for each subset of perceived susceptibility, perceived impact and perceived prescription utility. The range of mean scores for each subset would then be from 1.00 to 4.00. Also, a mean score for the total scale was computed, with a potential range of scores from 1.00 to 4.00.

Class attendance at the prenatal classes was also recorded. As each of the three sites had a different number of classes in their series, class attendance was computed on a percentage basis. Participants were considered attenders if they attended 50% or more of the classes and nonattenders if they attended less than 50% of the classes.

Data Analysis

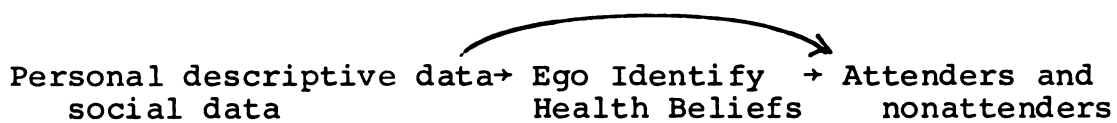
Initially, Pearson Product Moment Correlation was used to identify significant correlations between the personal descriptive and social variables and class attendance. Also, Pearson Product Moment Correlation was used to identify significant correlations between the personal descriptive

and social variables and mean scores on the Ego Identity Scale and the Health Belief Scales. Then Pearson Product Moment Correlations were computed on the mean scores of the Ego Identity Scale and the Health Belief Scales and class attendance.

After Pearson Correlations were computed, discriminant analysis was used to interpret the data further as it would provide a more sensitive interpretation of the data than Pearson Product. To distinguish between two or more groups of people, discriminating variables that measure characteristics on which the groups are expected to differ, are chosen. In this study, the participants were divided into two groups, attenders and nonattenders. The discriminating variables on which these groups were expected to differ were the health beliefs of the adolescents and the degree of identity formation.

The objective of discriminant analysis is to weight and combine the discriminating variables in such a way that the groups are forced to be as statistically distinct as possible. A combination of variables can be found that occur significantly more often in one group as compared to another. The advantages of this analysis are it allows for discrimination between the groups and it allows for prediction of behavior if certain variables are found to occur significantly more often in one group than the other. The personal descriptive and social variables were not included in the discriminant function analysis as this would have involved too many

variables and the variance between the groups would have been less meaningful. However, because Pearson Product Moment Correlations were computed between the personal descriptive and social variables and the Ego Identity and Health Belief Scales a model indicating the direction of correlation could be constructed:



In summary, Pearson Product Moment Correlation was used to compute significant relationships between:

a. Personal descriptive data, social data and class attendance

b. Personal descriptive data, social data and Ego Identity Scale and Health Belief Scales

c. Ego Identity Scale, Health Belief Scales and class attendance

In addition, discriminant analysis was used to indicate which variables or combination of variables would discriminate between attenders and nonattenders at a prenatal group learning situation.

Summary

The methodology used to complete the study was explained in this chapter. A convenience sample of 42 pregnant adolescents was chosen from three sites in the West Michigan area, one health department prenatal class and two out-patient

clinics. Each participant completed a three-part questionnaire which measured socio-demographic data, degree of identity formation and health beliefs. Pearson Product Moment Correlation and Discriminant Function were used to analyze the data. In Chapter V, the results of the data analysis will be presented for each hypothesis.

CHAPTER V

DATA PRESENTATION AND ANALYSIS

Overview

The purpose of this investigation was to identify those characteristics of the pregnant adolescent that contribute to her attendance at a prenatal class. The study population was a convenience sample of 42 pregnant adolescents who were pregnant for the first time and who had access to a series of educational classes regarding their pregnancy. The hypotheses for this study are:

1. There is a relationship between the attendance of pregnant adolescents at a prenatal class and personal descriptive data.

2. There is a relationship between the attendance of pregnant adolescents at a prenatal class and social characteristics.

3. There is a relationship between the attendance of pregnant adolescents at a prenatal class and the degree of identity formation.

4. There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived susceptibility.

5. There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived impact.

6. There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived prescription utility.

7. There is a relationship between the attendance of pregnant adolescents at a prenatal class and total health belief score.

8. Given the health beliefs of perceived susceptibility, perceived impact and perceived prescription utility, and degree of identity formation, it is possible to discriminate between attenders and nonattenders.

Sample characteristics and characteristics of the pregnant adolescent that differentiated between attenders and nonattenders at a prenatal class will be described in this chapter. These characteristics or variables are divided into two categories, identified as individual characteristics and health beliefs.

Individual Characteristics

The individual characteristics of the sample will be described in this section. It will be divided into three parts: personal descriptive characteristics, social characteristics, and identity formation.

Personal Descriptive Characteristics

Age.--The sample consisted of 42 pregnant adolescents ranging in age from 15 to 19. The mean age was 17.6 years. The actual number and percentage of adolescents for each age can be seen in Table 1.

Health.--Pre-screening of the subjects eliminated adolescents with known chronic diseases, but 5 (11.9%) indicated they had allergies and 1 (2.4%) indicated she had kidney disease. These subjects were included in the data

Table 1.--Age of Subjects (n=42).

Age	Frequency	Percentage
15	5	11.9
16	5	11.9
17	7	16.7
18	11	26.2
19	14	33.3
Total	42	100.0

analysis as it was felt these diseases did not effect their responses.

Living arrangement.--Seventeen (40.5%) of the adolescents indicated they lived with their parents. The actual number and percentage of adolescents living in each type of living arrangement is described in Table 2.

Table 2.--Living Situation During Pregnancy of Subjects (n=42).

Living Situation	Frequency	Percentage
Parents Only	17	40.5
Alone	7	16.7
Siblings Only	5	11.9
Boyfriend	5	11.9
Parents and Siblings	3	7.1
Other	3	7.1
Foster Family	1	2.4
Friends	1	2.4
Total	42	100.0

Thirty-eight (90.5%) of the subjects knew where they would live after the baby was born. Living with parents was again the most frequently indicated option, but the percentage dropped to 28.9% (11). In Table 3 the actual number and percentage of adolescents who planned to live in each living situation is described.

Table 3.--Living Situation Planned After Delivery of Subjects (n=38).

Living Situation	Frequency	Percentage
Parents Only	11	28.9
Boyfriend	10	26.3
Alone	8	21.1
Husband	5	13.2
Parents and Siblings	2	5.3
Siblings Only	1	2.6
Friends	1	2.6
Total	38	100.0

Source of income.--As can be seen in Table 4, public assistance such as food stamps and medicaid were the most frequently chosen sources of income for food, housing, and health care. Subjects were allowed to check more than one category in each column as it was recognized that income sources may be multiple for each subject. As a result, the sum of the percentages is more than 100 for each column.

Thirty-one (73.8%) of the subjects had plans for their source of income after delivery of their baby. This data can be seen in Table 5. Public assistance remained the most

Table 4.--Percentage of Subjects Receiving Income from Each Source for Food, Housing, and Health Care, During Pregnancy (n=42).

Food	%	Housing	%	Health Care	%
Public Assistance	65.0	Public Assistance	55.0	Public Assistance	85.4
Live with Parents	25.0	Live with Parents	27.5	Insurance, Parents	7.3
Cash, Boyfriend	15.0	Own Salary, Savings	10.0	No Arrangements	4.9
Cash, Parents	12.5	Live with Relatives	10.0	Own Insurance	2.4
Unemployment Benefits	12.5	Unemployment Benefits	10.0	Own Cash or Savings	2.4
Own Salary or Savings	10.0	Cash, Parents	7.5	Cash from Family, Friends	0
Live with Relatives	10.0	Live with Boyfriend	7.5		
Other	5.0	Other	7.5	Other	0
Live with Boyfriend	2.5	Cash, Boyfriend	5.0		
Cash, Relatives	2.5	Cash, Relatives	2.5		

Table 5.--Percentage of Subjects Planning to Receive Income from Each Source for Food, Housing and Health Care, After Delivery (n=31).

Food	%	Housing	%	Medical Costs	%
Public Assistance	64.5	Public Assistance	54.8	Public Assistance	76.7
Live with Parents	22.6	Live with Parents	29.0	Insurance, Parents	10.0
Cash, Boyfriend	12.9	Cash, Boyfriend	12.9	Insurance, Husband	10.0
Live with Husband	12.9	Live with Boyfriend	12.9	Own Insurance	3.3
Own Salary or Savings	9.7	Own Salary or Savings	9.7	Own Cash or Savings	3.3
Live with Boyfriend	9.7	Live with Husband	9.7	Cash, Family, Friends, Boyfriend	0
Other	9.7	Other	6.5	Other	0
Cash, Parents	6.5	Cash, Parents	3.2		
Cash, Relatives	3.2	Cash, Relatives	3.2		
Unemployment Benefits	3.2	Unemployment Benefits	3.2		
Live with Relatives	0	Live with Relatives	3.2		

commonly identified option. For food source, cash from parents, live with relatives, and unemployment were identified less often and live with boyfriend was identified more often. For housing source, cash from parents, live with relatives, and unemployment benefits were identified less often and cash from boyfriend and live with boyfriend were identified more often. Health care remained approximately the same. None of these differences were computed for statistical significance.

Marriage plans.--Twenty-seven (64.3%) of the subjects planned to be married. Timing of the marriage was: 18.5% (5) planned to marry before delivery, 25.9% (7) planned to marry after delivery, and 55.6% (15) had no definite time planned.

Education.--Level of education for each participant can be seen in Table 6. Fourteen (33.3%) of the subjects had at least a high school diploma or some college education. This educational level seemed to reflect the age of the subjects.

Social Characteristics

Contact with the health care systems.--All (100%) of the subjects were seeing a doctor during their pregnancy. This is due to the fact that data collection took place at clinic sites. Twenty-seven (64.3%) started care during their first trimester, 12 (28.6%) started care during their second trimester, and 3 (7.1%) started care during their third trimester.

Table 6.--Percentage of Subjects at each Educational Level (n=42).

Grade Completed	Frequency	Percentage
8th or less	2	4.8
9th	7	16.7
10th	9	21.4
11th	10	23.8
High School Diploma	11	26.2
College	3	7.1
Total	42	100.0

Twenty-nine (69%) of the subjects indicated they never saw a doctor for a check-up prior to their pregnancy. Of the 31% (13) that did see a doctor, 76.9% (10) went every 12 months, 15.4% (2) went once every 13-24 months, and 7.7% (1) went once in their life.

Twenty-eight (66.7%) indicated that they had seen a dentist for a check-up sometime in their life before becoming pregnant. Of these 28 subjects, 65.5% (19) went every 12 months. Since becoming pregnant, 71.4% (30) had not seen a dentist. Of the 12 subjects (28.6%) that did see a dentist, 69.2% (9) went because they were having a dental problem.

Contact with the occupational and educational system.--Six (14.3%) of the subjects were working full or part time during their pregnancy. Thirty (71.4%) of the subjects were not attending school but 33 (78.6%) planned to return to school after their baby was born.

The adolescents identified multiple helpful sources as they learned about their pregnancies. Table 7 indicates the source of assistance and percentage of subjects for each source. Parents were identified as being the most helpful (76.2%) with television being the least helpful (15.0%).

Table 7.--Identified Helpful Sources of Information About Pregnancy (n=42).

Source of Help	Frequency	Percentage
Parents	32	76.2
Reading	22	52.4
Health Department Clinic	17	41.5
Friends	14	33.3
Private Doctor	7	16.7
Public Health Nurse	7	16.7
Classes at School	7	16.7
Television	6	15.0

Intepersonal relationships.--Thirty-eight (90.5%) of the subjects knew who the father of their baby was. In rating their relationship with the baby's father from 0 to 10 with 10 being the highest rating, the mean rating was 7.2. Scores ranged from 0 to 10. Sixteen (42.1%) stated they saw the baby's father daily; 11 (28.9%) nearly every day; 6 (15.0%) 2 to 3 times in the past month; 2 (5.3%) once in the past month; and 3 (7.9%) did not see the baby's father at all.

Class attendance.--Class attendance was computed on a percentage basis as the three sites used had a different number of classes for each series. Five percent (2) of the subjects were from site #1, 70% (29) were from site #2, and 25% (11) were from site #3. Data on class attendance was not available for 2 (5%) of the study participants. These two subjects were not included in the data analysis. Table 8 indicates the number and percentage of participants who attended the classes.

Data on class attendance was also computed per site. Table 9 indicates the percentage of participants from each site that were attenders and nonattenders. Participants were considered attenders if they attended 50% or more of the classes.

Attenders were more likely to be attending classes at site #2 and nonattenders at site #1 and #3 but there was no significant difference between these sites.

Identity Formation

The last individual characteristic was identify formation, which was measured by a forced choice 12 item questionnaire. The subject was given a score of one for the answer indicating low ego identity and a score of two for the answer indicating high ego identity. No attempt was made to choose an arbitrary point that indicated the participant had a strong identity. The reliability coefficient for Scale B was .64. This alpha coefficient represented moderate internal consistency among the items. Items 1, 7, and 8

Table 8.--Number and Percentage of Subjects Who Attended Classes, by Percentage (n=40).

Percentage of Classes Attended	# Subjects	Percentage of Subjects
100.0	1	2.5
70.0	10	25.0
66.7	1	2.5
60.0	4	10.0
50.0	7	17.5
40.0	6	15.0
33.3	1	2.5
30.0	1	2.5
20.0	1	2.5
16.7	2	5.0
10.0	1	2.5
0	5	12.5
	40	100.0

Table 9.--Percentage of Attenders and Nonattenders by Site (n=40).

	Site #1	Site #2	Site #3
Nonattenders 49% or less	100	34.5	63.6
Attenders 50% or more	0	65.5	36.4

were deleted because they were found not to be consistent with the other items of Scale B.

Mean scores were computed rather than total scores. The mean scores for Scale B was 1.67 with a standard deviation of 0.22. The mean scores ranged from 1.11 to 2.00.

Summary

The descriptive findings of the study population were presented in the preceeding section. The specific descriptors of the sample were:

1. Personal descriptive characteristics--age, health, living arrangements, source of income, marriage plans, and education.
2. Social characteristics--contact with the health care system, contact with the occupational and educational system, and interpersonal relationships.
3. Class attendance.
4. Identity formation.

In the next section, the reliability and mean scores of the health beliefs will be presented.

Health Beliefs

For each health belief, mean scores were computed in order to calculate the correlation coefficients between variables. A mean score was also computed for the total scale.

Scale C, Part 1, Perceived Susceptibility

The reliability coefficient for Scale C, Part 1 was .75. This alpha coefficient represented marked internal consistency among the items. No items from Part 1 were deleted.

The mean score was 2.40 out of a possible range of 1.00 to 4.00. The standard deviation was 0.52 and the mean scores ranged from 1.00 to 3.63.

Scale C, Part 2, Perceived Impact

The reliability coefficient was .61. This alpha coefficient represented moderate internal consistency among the items. Items 11 and 12 were deleted because they were found not to be consistent with the other items of Part 2. Item 27 was moved from Part 3 to Part 2 because it was found to have greater internal consistency with Part 2.

The mean score was 2.43 out of a possible range of 1.00 to 4.00. The standard deviation was 0.36 and the mean scores ranged from 1.55 to 3.36.

Scale C, Part 3, Perceived Prescription Utility

The reliability coefficent was .80. This alpha coefficient represented marked internal consistency among the items. Item 11 was moved from Part 2 to Part 3 because it was found to have greater internal consistency with Part 3. As stated previously, Item 27 was moved to Part 2.

The mean score was 3.08 out of a possible range of 1.00 to 4.00. The standard deviation was 0.42 and the mean scores ranged from 2.00 to 3.90.

Total Scale, Perceived Susceptibility Perceived Impact, Perceived Prescription Utility

The mean score was 2.65 out of a possible range of 1.00 to 4.00. The standard deviation was 0.24 and the mean scores ranged from 2.07 to 3.38.

In the following section, each hypothesis will be presented with the associated data.

Data Presentation by Hypothesis

Hypothesis #1

There is a relationship between the attendance of pregnant adolescents at a prenatal class and personal descriptive data. Pearson Product Moment Correlation was used to compute the relationship between the pregnant adolescent's attendance at the prenatal class and personal descriptive data. Personal descriptive variables that had a significant correlation at .05 level with class attendance are

presented in Table 10. See Appendix D, Table D-1 for all correlations pertaining to personal descriptive data and class attendance.

Table 10.--Pearson Product Moment Correlation Between Personal Descriptive Data and Class Attendance ($p<.05$).

Personal Descriptive Variables	Class Attendance
Before Delivery	
Did Not Live With Friends	.29
Housing, Cash, From Parents	.38
After Delivery	
Food Source, Parents	.39
Housing, Live With Relatives	.37
Medical Care, Parents' Insurance	-.35
Plans to Marry	.31
Educational Level	.26

Hypothesis 1 was not accepted because a strong relationship did not exist between the items of personal descriptive data and class attendance.

Hypothesis #2

There is a relationship between the attendance of pregnant adolescents at a prenatal class and social characteristics. Pearson Product Moment Correlation was used to compute the relationship between class attendance and social characteristics. Social characteristics that had a

significant correlation at the .05 level with class attendance are presented in Table 11. See Appendix E, Table E-1 for all correlations pertaining to social characteristics and class attendance.

Table 11.--Pearson Product Moment Correlation Between Social Characteristics and Class Attendance ($p \leq .05$).

Social Characteristics	Class Attendance
Sought Care Early in Pregnancy	.30
Before Pregnancy, Saw a Doctor for Check-ups	.29
No Plans to Return to School	.26

Hypothesis 2 was not accepted because a strong relationship did not exist between the items of social data and class attendance.

Hypothesis #3

There is a relationship between the attendance of pregnant adolescents at a prenatal class and the degree of identity formation.

The correlation between identity formation and class attendance was .10. This was not significant at the .05 level, therefore Hypothesis 3 was rejected.

Hypothesis #4

There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived susceptibility.

There was a negative correlation between perceived susceptibility and class attendance (r=-.29, significant at .03 level). This would indicate that there is a relationship between perceived susceptibility and nonattendance at the class. Hypothesis 4 was accepted.

Hypothesis #5

There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived impact.

The correlation between perceived impact and class attendance was r=-.29. This was not significant at the .05 level, therefore, Hypothesis 5 was rejected.

Hypothesis #6

There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived prescription utility.

The correlation between perceived prescription utility and class attendance was r=.13. This was not significant at the .05 level, therefore Hypothesis 6 was rejected.

Hypothesis #7

There is a relationship between the attendance of pregnant adolescents at a prenatal class and total health belief scores.

The correlation between total health belief score and class attendance was r=-.21. This was not significant at the .05 level, therefore Hypothesis 7 was rejected.

Hypothesis #8

Given the health beliefs of perceived susceptibility, perceived impact, perceived prescription utility and degree of identity formation, it is possible to discriminate between attenders and nonattenders.

Further statistical analysis of the data was done by discriminant function analysis. The purpose of this analysis was to identify those variables that would correctly discriminate between attenders and nonattenders at the prenatal class. The variables that were used for the discriminant function were degree of identity formation (Scale B) and the health beliefs of the teens (Scale C) plus total health belief score. Means and standard deviations were computed for the pregnant adolescents on each of these four scales plus total health belief score. The F-ratio was computed for each scale, which minimized the variance within each group of attenders and nonattenders and maximized the difference between these two groups. If the F-ratio for a particular scale was statistically significant, it was concluded that the concept that scale measured was discriminating between the two groups. Using the direct method of discriminant function, Scale 3, Part 2 was the only one of the four scales plus total scale, that was able to discriminate between attenders and nonattenders. For Scale 3, Part 2, perceived impact, the F-ratio was 6.30 with a significance level of .0162. The F-ratio and significance level for each variable is presented in Table 12.

Table 12.--F-ratio and Level of Significance for Each Variable.

Variable	F	Significance
Identity Formation	1.36	.2512
Perceived Susceptibility	1.24	.2717
Perceived Impact	6.30	.0162
Perceived Prescription Utility	.635	.4302
Total Score	2.58	.1162

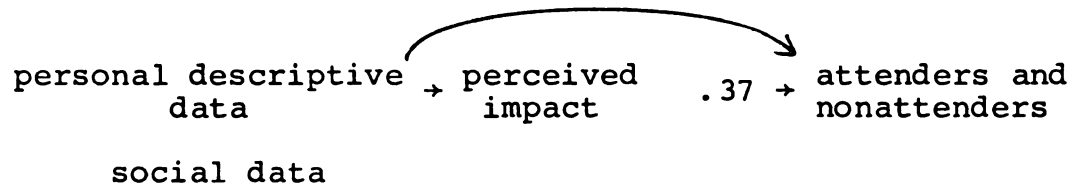
After the direct method was completed, the canonical correlation was computed. A canonical correlation describes the strength of the relationship between the predictor variable, perceived impact and the criterion variable, class attendance. The canonical correlation is interpreted in the same fashion as other correlation coefficients. The canonical correlation was calculated as .37 and was significant at the .0162 level. This result indicates a significant positive relationship between the predictor variable, perceived impact, and the criterion variable, class attendance.

After the canonical correlation was computed, it was determined if attendance and nonattendance could be predicted, knowing each adolescent's score on the perceived impact scale. Attendance was correctly predicted in 69% of the cases, knowing only the participants' score on the perceived impact scale.

In summary, using discriminant function analysis, perceived impact was the only one of five predictor variables

that correctly discriminated between attenders and nonattenders. The other four scales did not contribute significantly to the discrimination between the two groups. Knowing the adolescent's score on the perceived impact scale, correct group membership was predicted with 69% accuracy.

To complete the model presented in Chapter IV, Pearson Product Moment Correlation was computed on all personal descriptive and social data to see if any of these variables had a significant relationship with perceived impact. The model presented was:



with perceived impact inserted as this variable did discriminate attenders from nonattenders. Table 13 presents the variables that had a significant correlation at the .05 level. See Appendix F, Table F-1 and Table F-2 for all correlations pertaining to personal descriptive and social data and perceived impact.

The personal descriptive and social variables listed in Table 11 had a significant correlation with perceived impact which, in turn, was the only one of three health beliefs and identity formation which was able to predict class attendance.

Summary

Data on the descriptive findings of the sample and on the data relevant to the hypotheses was presented in this

Table 13.--Pearson Product Moment Correlations Between Personal Descriptive and Social Variables and Perceived Impact (p=<.05).

Personal Descriptive and Social Variables	Perceived Impact
Before Delivery	
Food Source, Boyfriend	.34
Food Source, Relatives	.29
Housing, With Relatives	.30
After Delivery	
Not Living with Friends	.42
Housing, with Boyfriend	.30
Less Frequent Visits to a Doctor for a Check-up, Before Pregnancy	.78
Reading Was Not a Source of Learning	.33

chapter. In Chapter VI, data will be summarized and interpreted. The author will draw conclusions and make recommendations for future research and nursing practice.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Overview

In Chapter VI, a summary and interpretation of the research findings is presented. In addition, conclusions are made and recommendations for future research, nursing practice, and nursing education are presented.

Summary and Interpretation of Findings

Descriptive Findings of the Sample

Personal descriptive.--The mean age of the sample was 17.6 years with the largest percentage (33.3%, n=14) 19 years of age. This indicates that the sample tended to be older adolescents. This finding is consistent with the educational level which showed that 33.3% (14) of the sample had at least a high school diploma or some college education. The largest percentage (40.5%, n=17) were living with their parents at the time the study was conducted. If living arrangement with any family member was considered, 59.5% (25) were living with parents only, siblings only or parents and siblings. After delivery, these teens planned to change their living arrangements dramatically. Instead of a

majority living with their family of origin, 58.1% (23) planned to live with their boyfriend, husband or to live alone. However, parents were still the most likely identified with 26.2% (11) still planning to live with their parents.

The age level of the study sample is consistent with the age level of pregnant adolescents in the population. Baldwin (1976) reported the birth rate per 1,000 women to be 96.2 for women aged 19 and 19.2 for women aged 15. Zelnik, Kim, and Kantner (1979) found that 25.4% of all 19 year olds had conceived compared to 1.7% of all 15 year olds.

Educationally, the study sample also is consistent with the general population. Nye (1976) reported that 38.7% of women who were 18 or 19 years of age at the birth of their first child graduated from high school compared with 17.5% of women who were 16 or 17 at the birth of their first child.

No literature was found that described the living situation of pregnant adolescents unless it was in reference to her marital status. Baldwin (1976) reported that in 1974, 35% of out-of-wedlock conceptions were "legitimized" by marriage, indicating a change in living arrangement for these teenagers.

A majority of the sample identified public support as their source of income for food, housing, and medical care during their pregnancy. Public support was also identified as the most likely source of support after their baby was born. Moore, Hofferth, Caldwell, & Waite (1975) found a

strong association between receipt of welfare and age at first birth. However, they did not believe this was a direct relationship but that a teenage birth has other associated factors such as lower educational level, larger family size, marital dissolation, and lack of occupational experience that contributes to the need to accept welfare assistance. In regards to the study sample, the data were collected at clinic sites which would have a large number of welfare recipients as clients.

A majority of the sample (64.3%, 27) planned to be married. Interpretation of this finding is difficult as the question was worded in such a way that the teen could have interpreted it to mean married at any time during their life rather than to the father of their baby.

In summary, the sample tended to be older adolescents with at least a high school education, living at home with their parents and dependent on the welfare system. Although there is an association between age at first birth and dependency on public assistance, this could also have been representative of the clinic sample used. A majority planned to marry at some time.

Social characteristics.--One hundred percent (42) of the sample were seeing a physician for their pregnancy. This high figure is expected because all but two (4.8%) of the subjects were attending a clinic at the time of the data collection. Twenty-seven (64.3%) started care during their first trimester. This percentage is very high when compared

with the results of Perkins, Nakashima, Mullin, Dubansky, and Chin (1978) who found that 3.7% and 11% of two study groups had registered for care by this time. Chanis, O'Donohue, and Stanford (1979) found that 12.1% of adolescent patients registering for care were in their first trimester at first visit. This high percentage may be due to the teens checking the answer that they thought they "should" check, to the teens not actually knowing when they started care, or to the teens knowing that early prenatal care was important. No attempt was made to check the adolescent's record to see when she actually did start care, but this may have been a way of obtaining more accurate data.

A majority (69%, 29) of the teens reported never seeing a doctor for a check-up before becoming pregnant, but 66.7% (28) had seen a dentist for a check-up sometime prior to their pregnancy. The wording of the questions did not give a time frame so some teens may have considered pre-school well child check-ups and some may not. The lack of medical check-ups is high when compared with the National Health Survey (Vogt, 1975), which reported 48% of the youths did have a check-up with a physician in the last 12 months. Sternlieb and Munan (1972) found that 46% of the youths saw their physician at least once a year, but no differentiation was made between check-ups and illness/accident visits.

The frequency of dental checks is more consistent with the literature. The National Health Survey (Scanlon, 1975) found that 56.3% of the youths had seen a dentist within

the past year and another 13% had seen a dentist within the year or two before that. It would seem that these teens came from families that did value dental health. It is also possible that accessibility to dental care either by financial reimbursement or availability of dentists may have influenced this. For example, because medicaid does cover dental care, local health care providers may have encouraged dental visits. Since becoming pregnant, 12 (28.5%) subjects had seen a dentist but primarily for a dental problem (69.2%, 9). No literature could be found comparing these figures.

In summary, the participants had had contact with the health care system, primarily thru seeing a dentist. They were all seeing a physician for prenatal care and had registered for care earlier than other studies reported. They had seen a physician less frequently, but had seen dentists at about the same frequency as other studies reported. A majority had not seen a dentist during their pregnancy.

Although a majority were not attending school (71.4%, 30), the data analysis did not allow determination of how many of these were due to the teen already graduating. If the number graduated from high school (14) was subtracted from 30, 38.1% (16) would not be attending that were not yet graduated from high school. This figure would be consistent with the literature that states that an adolescent pregnancy frequently results in an interruption of schooling (Card & Wise, 1978; Freedman & Thornton, 1979; Furstenburg,

1976; Moore et al., 1978; Trussel, 1976). Also consistent with the literature is the relatively high percentage (78.6%, n=33) that planned to return to school after the baby was born. As the literature suggests, these expectations are often unrealistic as many teens are unable to return to school as planned (Card & Wise, 1978).

Parents were the most frequently identified source of information regarding pregnancy (76.2%, n=32). This could imply that these teens identified their parents as a source of help during pregnancy and may imply at least some communication with their parents was occurring. Also, many of the adolescents were living at home so they would have greater access to their parents. No questions were asked that assessed the accuracy of the adolescent's knowledge.

Of interest is the fact that only 41.5% (17) identified the clinic as a source of information. This is important because it may indicate that a majority of the teens had not yet started to attend the classes at the clinic, therefore the classes had not influenced their health beliefs about their pregnancy. Also, it may indicate that the teens had been attending the classes, but they did not find them helpful, which would influence their class attendance at later classes. Another possibility is that very little clinic time was spent teaching other than the organized classes. No data was collected that could confirm any of these possibilities. Reading about pregnancy was identified by 52.4% (22) and outranked friends as a source of

information (33.3%, n=14). Therefore, peer influence had less of an impact than the teen's own reading on the subject of pregnancy.

The pregnant adolescents indicated they had a good relationship with the baby's father. The mean score was 7.2 with 10 indicating an excellent relationship. This finding is also consistent with the literature that states that most pregnant adolescents do have a stable relationship with one person rather than multiple partners (Furstenberg, 1976).

To summarize the social characteristics, the pregnant adolescents in this study were all seeing a physician for their pregnancy, had registered early for prenatal care, had utilized the health care system, primarily dentists, before pregnancy, were not attending school, but planned to return, utilized their parents as an informational source and perceived themselves as having a good relationship with the baby's father.

The descriptive data obtained in this study were summarized and interpreted in the preceeding section. The following section will summarize and interpret the results for each hypothesis.

Class Attendance Per Site

More attenders were from site #2 than from site #1 or #3. Site #1 consisted of the classes associated with the health department, independent of a clinic. At site #2,

class attendance was more strongly encouraged than at site #3, and the classes were held while the teen was waiting to see the physician. At site #3, classes were held at the end of clinic after the teen had seen the physician. This difference in procedure gives the adolescent less choice about attending and may contribute to class attendance. What is not known is if involuntary or voluntary class attendance contribute differently to learning and applying the information presented. The teens from site #3 that did attend the classes possibly had more motivation to attend as they overcame more barriers (time, inconvenience) to attend. Future research might include examining the learning level through pre- and post-tests to see if teens that attend a class involuntarily still learn. Other possibilities for increased attendance at site #2, might be more interesting, relevant classes and a different teaching approach. These factors need to be examined further.

Result of Hypotheses

In this section, each hypothesis will be considered separately with a discussion of the interpretation of the data.

Hypothesis #1

There is a relationship between the attendance of pregnant adolescents at a prenatal class and personal descriptive data.

This hypothesis was not accepted because it was not strongly supported by the data. As a result of Pearson Product Moment Correlation, only seven of 76 personal descriptive variables were found to have a significant relationship at .05 level with class attendance (see Appendix D, Table D-1). The variables that did correlate indicated that teens that had some type of financial support from other family members, either during their pregnancy, or expected financial support after the baby was born, would be more likely to attend the prenatal classes. These significant correlations may not be as meaningful as it appears due to the small number of subjects in some of the categories. For example, only three participants indicate they received cash from parents before delivery and only one participant planned to live with relatives after delivery. Therefore, these correlations may not be meaningful.

Living with friends during the pregnancy seemed to have a negative influence, so peer pressure would seem to work against class attendance. If the teen planned to marry, she was more likely to attend the class which would again imply the interest of other people could influence class attendance.

As no literature was found that described factors that influence class attendance, no comparisons to the literature can be made. The only contradiction to the general trend was that if the teen expected to receive payment for medical care from the parents' insurance after delivery, she was less

likely to attend the classes. An interpretation of this result was not apparent and may warrant further study. For example, a question could have been asked regarding the parents' support of class attendance. In addition to the interest of significant others, a higher educational level also contributed positively to class attendance.

The importance of support from the teen's environment is consistent with one of the findings of Gordis, Markowitz, and Lilienfed (1969). They found that compliance was improved if the adolescent was accompanied to the clinic by a parent. However, Litt and Cuskey (1980) found that the adolescent's compliance with contraceptive behavior improved if the teen was allowed to be independent with making her appointment, paying her bills, and seeing the physician.

The contradiction in results could be explained by the purpose for the medical visit. The teen would more likely prefer to keep knowledge of her sexual behavior from her family whereas this would not be true for medical check-ups for a chronic health problem. With an adolescent pregnancy, the family would have acknowledged her sexual behavior and family support may again be an important factor. The area of family support in teen health behavior would seem to merit further exploration.

Age did not have a significant correlation with class attendance. As mentioned previously, educational level did, so this appears to be a better predictor of behavior than age alone. It should also be mentioned that many variables

pertaining to financial source for food, housing, and medical care did not have significant correlations with class attendance, so this is not a clear-cut issue. There is no pattern in the variables that did correlate to indicate a common thread among them that may show a relationship between financial source and class attendance. Because the question asked about financial support rather than a more general concept of emotional support the question might not have been reflective of the adolescent's support system.

In summary, Hypothesis #1 was not strongly supported because a majority of the variables did not have a positive significant correlation with class attendance. Of those that did, the pregnant adolescent was more likely to attend the classes if she received financial support from some family member in contrast to living with friends. Also marriage plans and educational level was associated with class attendance.

Hypothesis #2

There is a relationship between the attendance of pregnant adolescents at a prenatal class and social characteristics.

This hypothesis was not accepted because it was not strongly supported by the data. As a result of Pearson Product Moment Correlation, only three of 25 social variables were found to have a significant relationship at the .05 level with class attendance (see Appendix E, Table E-1). If the teen sought care early in her pregnancy, she was more

likely to attend the prenatal classes. This result could be due to the fact that the teen that registered early would have had the opportunity to attend more classes since she would have made more prenatal visits. As discussed in Chapter IV, it was felt that this could be a limitation of the study. If the classes had been independent of the clinic as originally planned, this limitation would not be present. Also knowing the total number of prenatal visits would allow for more accurate interpretation of this data, but this data was not obtained. There is also the possibility that indeed the teens that recognized the value of early prenatal care saw the value of attending the classes.

Despite the fact that more of the teens had seen a dentist rather than a doctor prior to their pregnancy, having seen a doctor contributed to class attendance. From past experience, these teens may understand the value of preventive health behavior. One reason why the adolescents had not seen a doctor may be that adolescence is a relatively healthy period of time and there was no reason to see a physician. Also, the health care system does not stress well check-ups during this time span, in contrast to the pre-school period.

If the teen did not plan to return to school, she was more likely to attend the classes. This finding may go along with the finding that a higher educational level (completed high school) contributed to class attendance. If a teen has already completed high school, she would probably not plan to continue her education, especially if she was pregnant.

None of the variables pertaining to dental visits either before or during pregnancy contributed to class attendance. The preventive health behavior learned at dental visits may not carry over to other areas of preventive health behavior.

Another relationship that was not significant was identifying the clinic as a source of knowledge about pregnancy, and class attendance. The pregnant adolescents that identified the clinic as a learning source were no more likely to attend the classes than anyone else. This may imply that other experiences at the clinic such as seeing the social worker, nutritionist, or nurse on a one-to-one basis were considered more valuable than attending the classes for these teens.

A teen that perceived she had a good relationship with the baby's father was no more likely to attend the classes than if she perceived a poor relationship. As discussed for Hypothesis #1, if the teen planned to marry, she was more likely to attend the classes, so it may be that the permanence of the relationship rather than the quality of the relationship is the important factor. As with family support, a question pertaining to the baby's father encouraging class attendance would be indicated in further research in this area.

In summary, a pregnant adolescent was more likely to attend classes if she sought care early in her pregnancy, saw a doctor for check-ups sometime in her life, and had no plans to return to school. Seeing a dentist prior to

pregnancy, identifying the clinic as a learning source and having a good relationship with the baby's father did not contribute to class attendance.

Hypothesis #3

There is a relationship between the attendance of pregnant adolescents at a prenatal class and the degree of identity formation.

This hypothesis was rejected because there was no significant relationship between identity formation and class attendance. This could be due to the limited age range that was included in the sample. If younger pregnant adolescents had been included in the study, there may have been sufficient variability in the degree of identity formation for a relationship to be apparent. The results showed that the mean score of 1.67 and a standard deviation of .22 indicated a moderate degree of identity formation with little variability among the study participants. Further research of this kind could include younger and older adolescents to examine the influence of developmental level on health behavior.

Hypothesis #4

There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived susceptibility.

This hypothesis was accepted because there was a significant negative correlation between perceived susceptibility

and class attendance. However, the relationship is in contradiction to the Health Belief Model (Becker, 1974) which states that perceived susceptibility contributes to preventive health behavior.

There are several possible explanations for this unexpected finding. It may be that the teens who perceived they were susceptible also believed there was nothing they could do about it (perceived prescription utility), leading to a sense of helplessness. This sense of helplessness may lead to inaction rather than action as theorized by the Health Belief Model. Also, the fear of possible complications may lead to inaction as the teen would not have learned that there were actions she could take to prevent some of these problems. Motivational factors that were not directly examined may have contributed to this finding, for example, the value of health. If the teens felt they were going to have problems, but it did not matter to them, in other words "health" was not important to them, they would not be likely to engage in behavior that would prevent the problem. Also, attending the class would not directly affect the development of problems. The teen would need to engage in other behavior that she learned about at the class. Because data on other types of preventive health behavior was not obtained, the teens that had high perceived susceptibility may have been doing other things to prevent problems other than attend the class. The fact that the adolescent was seeing a doctor for her pregnancy and had tended to register

for care early indicates some preventive health behavior was occurring.

In summary, the adolescent was less likely to attend the classes if she believed she was susceptible to complications during or after her pregnancy. Possible explanations are a sense of helplessness, and fear leading to inaction, preventing problems is not important as health is not valued and the teen with perceived susceptibility may be engaging in preventive health behavior other than the class.

Hypothesis #5

There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived impact.

Hypothesis #6

There is a relationship between the attendance of pregnant adolescents at a prenatal class and perceived prescription utility.

Hypothesis #7

There is a relationship between the attendance of pregnant adolescents at a prenatal class and total health belief scores.

These hypotheses were all rejected due to a lack of significant relationships between the beliefs and class attendance. One explanation could be that the Health Belief Model may not be an appropriate model to use in examining this type of preventive health behavior. Attending a class

where information is learned that must be incorporated into your daily activities is an indirect type of preventive health behavior. The action will not directly lead to prevention of problems. The pregnant adolescent must still change her eating habits, quit smoking or get more exercise if benefit is to be gained from the class. As stated previously, the pregnant adolescents in the study may have been engaging in preventive health behavior that was not measured but may have been related to their health beliefs.

Also other factors may have contributed to class attendance that affected how many classes the teen attended. At one of the clinic sites, attendance was strongly encouraged so they may have felt pressure to attend. Number of prenatal visits would affect class attendance as the classes were only available if the teen kept her clinic appointment. A pregnant teen may attend the classes if her friend at the clinic was attending rather than from self-motivation. Also, attending the class may have been more interesting than waiting. So, other motivational factors, other than health beliefs may have contributed to attendance at the class.

Hypothesis #8

Given the degree of identity formation, the health beliefs of perceived susceptibility, perceived impact, perceived prescription utility and total health belief score, it is possible to discriminate between attenders and non-attenders.

This hypothesis was accepted because it was found that a belief in perceived impact did predict class attendance with 70% accuracy. In other words, if she believed that her pregnancy and the baby would have an impact on her life, she would be more likely to attend prenatal classes. Discriminant function analysis was able to identify this relationship because discriminant function identifies variables that distinguish between groups where Pearson Moment Correlations identifies similarities between a predictor variable and the criterion variable.

This finding does have some support in the literature. As stated in Chapter III, no studies could be found that examined the health beliefs of pregnant adolescents. However, studies that report the health beliefs of children and adults point out the importance of perceived impact on behavior. For example, Kirscht, Becker, Haefner, and Maiman (1978) found that if parents believed obesity was a health threat (perceived impact) they were more likely to keep follow-up appointments for their obese children. Kirscht, Becker, and Eveland (1976) found that perceived impact and perceived prescription utility were the largest contributors of parents seeking medical care for their children. In studies that examined the behavior of parents who had children with identified chronic diseases, perceived impact contributed to the parents keeping appointments and giving the prescribed medication (Becker, Drachman, & Kirscht, 1972; Becker, Radius, Rosenstock, Drachman, Schuberth, & Teets, 1978).

Recognizing that there are different types of preventive health behavior based on whether there is a disease present, or if a disease is being prevented, Becker, Nathanson, Drachman, and Kirscht (1977) examined the beliefs of parents in relation to well-child visits and illness/accident visits. They found that perceived impact was negatively associated with well-child visits but positively associated with illness/accident visits. This would see to contrast with the findings of the current investigation as prenatal classes could be viewed as a type of "well-adolescent" visit. Another finding of the Becker, Nathanson, et al. study (1977) may lend some support to the earlier reported finding that perceived susceptibility was negatively associated with class attendance. They found that perceived susceptibility was also negatively related to well-child care, but positively related to illness/accident visits.

To summarize, the finding that perceived impact was predictive of class attendance does have support in the literature. However, these comparisons should be interpreted loosely as the studies cited used a different age group and looked at acute and chronic illness as well as preventive health behavior where no disease was present.

In examining the variables that had a significant correlation with perceived impact (see Appendix F, Tables 1, 2), it again appeared that those teens that had financial support in terms of food or housing from relatives and/or boyfriend during their pregnancy, or planned to live with their

boyfriend after delivery, believed the pregnancy would have the biggest impact on their lives. Again, small numbers of participants fell into these categories so these correlations may not be meaningful. It should be noted that planning financial support from a husband did not show a relationship with perceived impact. Not living with friends again had a significant correlation as it did with class attendance. It should be noted that on the questionnaire, "parents" were identified separately from other "relatives" so planning on financial support from parents did not contribute to perceived impact. Teens that had left their family of origin, but were still financially dependent on other extended family were more aware of the impact of their pregnancy.

Teens that were alone or living with friends anticipated less of an impact on their life than teens who were dependent to some degree on others. The importance of financial dependence on others was not stressed in the conceptual model (see Chapter II), but was considered part of the personal descriptive variable. Because this variable does have an impact on behavior it should be stressed in future research on this topic (see Modification of Conceptual Model, p. 148).

The most significant correlation with perceived impact was frequency of check-ups to a physician before the teen became pregnant. This relationship is difficult to explain. The teen believed the pregnancy and baby would have an impact the <u>less</u> frequently she saw a physician for a check-up prior to her pregnancy. Possibly the important consideration is

not the frequency of the visits but the fact that she saw a physician at all, since most of the sample did not. Perhaps there is something about families that did stress preventive health care that influenced the teen to feel that her pregnancy would have an impact.

Attending school, planning to return to school or working did not affect the teen's perception of impact. These variables might be suspected to correlate because having a baby would certainly affect the teen's ability to continue these activities. It is possible that the teens had an unrealistic expectation of their ability to continue these activities.

Summary

To summarize all the statistical findings, pregnant adolescents are more likely to attend prenatal classes if:

1. They are dependent for food and housing on other people
2. Sought care early in pregnancy
3. Saw a doctor for a check-up sometime in their life
4. Had a higher educational level (high school) and did not plan to return to school
5. Perceived that the pregnancy would have an impact on their life. They were more likely to perceive this if:
    a. they were dependent for food and housing on other people during their pregnancy or planned to be after delivery

b. had visits to a doctor for check-ups sometime in their life

c. did not plan to live with friends after delivery

A pregnant adolescent is less likely to attend a prenatal class if she believes she is susceptible to complications during her pregnancy.

Limitations of the Study

The limitations of the study are based on the design, the questionnaire, and the sample.

Design

The questionnaires were completed by the pregnant adolescent at a clinic site that offered prenatal classes (all except two). As the data collection occurred at any time after the twentieth week of pregnancy, the teen may have already been attending some of the prenatal classes. The question arises as to whether the teen's beliefs may have been influenced by class attendance rather than the beliefs preceeding class attendance.

Other factors that were not measured by the instrument may have influenced class attendance. At one clinic site, classes were held while the teen was waiting to see the physician so she may have gone for lack of any other activity. The teen may have gone to the class because a friend was going to be there or because she was made to feel she had no choice about attending. At both clinic sites, teaching

was also provided on a one-to-one basis so the teen may not have attended because she was learning the information some other way.

Questionnaire

Two of the four scales, Ego Identity Scale and perceived impact, had only moderate reliability coefficients (.64 and .61 respectively). This may indicate that these scores were measuring other variables and would need further refinement. Also, the lack of an undecided category for Scale C may have forced the pregnant adolescent to state an opinion when she actually did not have one. Some of the wording and scoring of questions in Part A, particularly those related to source of income, previous health visits, and plans for marriage, was unclear and made interpretation difficult.

Sample

Because the data collection occurred at clinic sites, the subjects were primarily from a lower socio-economic background. This limits the generalizability of the findings.

Based on these limitations of design, questionnaire and sample, recommendations for future research will be proposed.

Recommendations for Future Research

The following recommendations are made based on the experience of the investigator conducting this research.

1. A more representative sample of pregnant adolescents should be obtained by utilizing participants from

private practice physicians as well as clinic sites. The sample could also include younger as well as older adolescents to examine the differences in health beliefs and preventive health behavior between age groups.

2. If a broader perspective of preventive health behavior is desired, other indices of the teen's behavior could be measured. From a record review, such measures as when prenatal care was started, total number of prenatal visits, weight gain, nutrition, hemoglobin and attendance at classes would give a total picture of the pregnant adolescent's preventive health behavior.
3. The health beliefs could all be measured at the same time in the pregnancy for all participants to help alleviate gestational age as an extraneous variable.
4. In addition to financial support, other types of support such as emotional support, should also be assessed for its impact on the adolescent's behavior. For example, asking the teen whether her parents and/or boyfriend supported class attendance, whether they encouraged other types of preventive health behavior, and whether they supported her decision to keep her baby would all be meaningful.
5. More questions could be asked pertaining directly to her attitude towards the class, such as why did

she attend or not attend, what did she expect from the class, was the content appropriate for what she felt she needed. Answers to these questions would help in future program development.

6. Another perspective may be to examine what influence class attendance has on the outcome of pregnancy. For example, the sample could be divided into attenders and nonattenders and evaluated to see if there were any statistical differences in nutrition, weight gain, morbidity and mortality of the infant, birth weight of the baby, or infant care after delivery, between the two groups.
7. Future research might also explore ways to increase the adolescent's perceived impact, as this contributed to class attendance. For example, does fear work as an approach. Perhaps having teen mothers come to class and talk about their experience would be more productive.

These recommendations would help to improve the study design and the generalizability of the results. The results that were found allow the investigator to modify the conceptual framework used for the investigation to reflect the results of the study.

Modification of Conceptual Model

In Chapter II, the Health Belief Model (Becker, 1974) and the Engagement Model (Jenny, 1978) were combined to form the Integrated Model (see Chapter II, p. 28).

As a result of the findings of this study, several modifications of the Integrated Model are suggested.

Due to the apparent influence of financial support from others on the pregnant adolescent's attendance at the prenatal class, this variable should be given greater prominence in the model. In the Integrated Model, this variable was considered part of the individual variables under modifying factors. As the findings of this study suggest this is to be an important contributing factor, it should be given special emphasis. Also, previous experience with preventive health behavior should also be depicted in the model as this was also shown to be an important variable.

The findings of this study suggest that perceived susceptibility may have an inverse relationship to class attendance. This variable should be depicted in separate boxes from the other beliefs as it may have a separate and conflicting influence on behavior. Previous research cited (Becker, Nathanson, et al., 1977) did support this finding so this is an area that warrants further investigation. The revised Integrated Model, incorporating the findings of this study, can be seen in Figure 4.

Implications for Nursing Practice

As stated by Orem, nurses have as their goal to increase the client's self-care abilities "in order to sustain life and health, recover from disease or injury and cope with their effects" (Orem, 1980, p. 6).

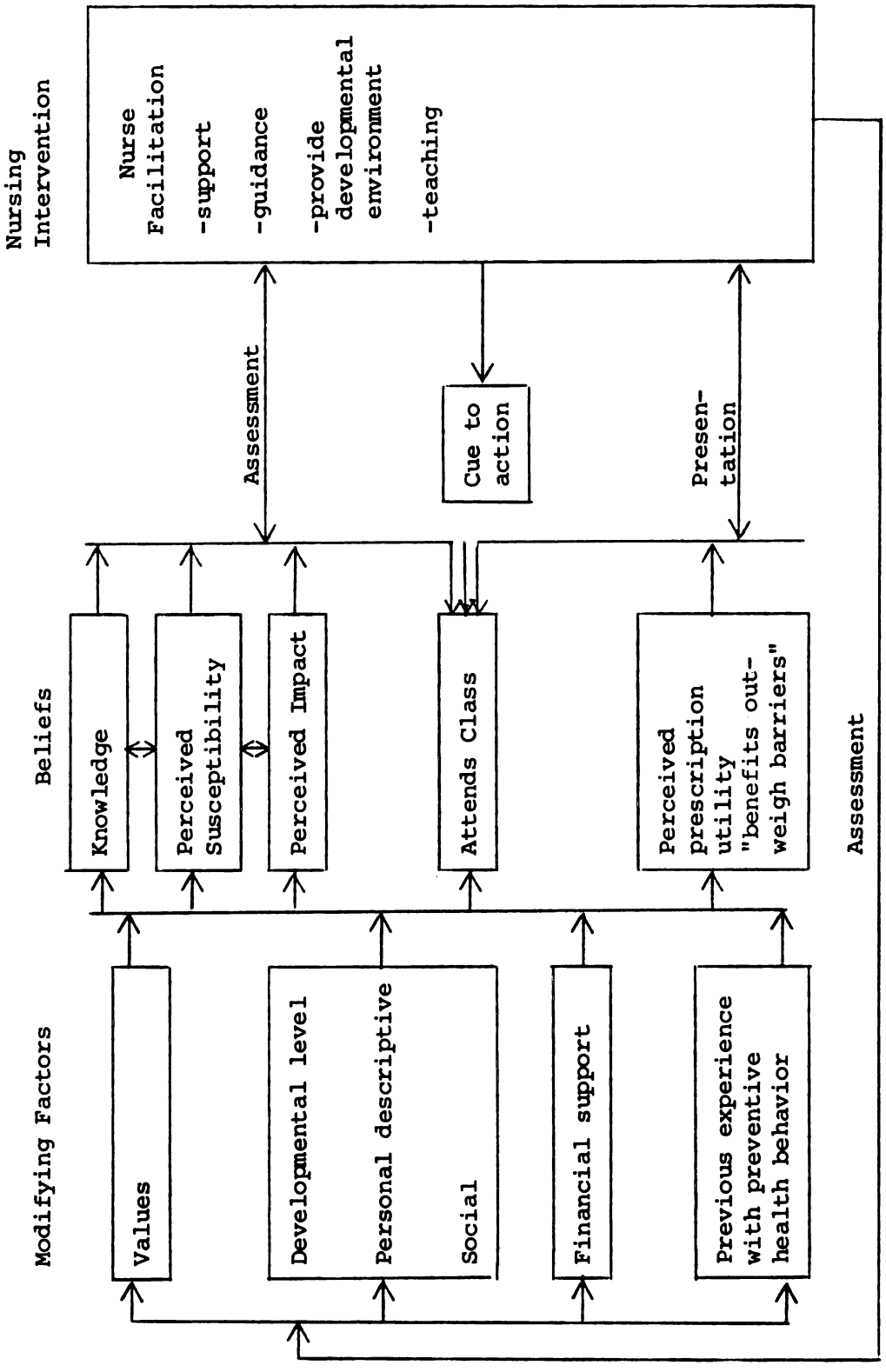


Figure 4. Modified Integrated Model.

The goal of nursing care when working with the pregnant adolescent is to increase her self-care abilities so the teen is able to achieve her maximum health potential and is able to care for her infant. One of the ways this goal can be accomplished is to provide group instruction for the pregnant teen so she is able to learn behaviors that contribute to a healthy pregnancy and infant. The nursing challenge is to provide a therapeutic environment where maximum learning can occur and the teen is able to integrate the learned behavior into her daily activities.

In utilizing the nursing process, the nurse will assess the teen's environment for factors that may enhance or impede the learning process. The results of this study show that if the teen is receiving financial support from family members and/or her boyfriend she will be more likely to attend prenatal classes. The nurse can initially assess the teen's family and living situation to see if she is independent in supporting herself or if she continues to be dependent for some part of her living expenses. Teens that are identified as living alone with few support people or that live with friends should be identified as high risk and alternative nursing intervention such as one-to-one teaching planned.

For teens that have a support person available, the nurse can facilitate this relationship so the teen receives maximum benefit from it. Perhaps the support person could be encouraged to attend clinic appointments with the teen

and allowed to be with the teen during her activities there. A separate class or group could be held for support people to help them understand what is happening to the teen and themselves. The nurse must keep in mind the developmental tasks of the adolescent and her striving for identity so as not to minimize her growing independence while involving the other person.

The nurse should also recognize that a group learning situation may not be suited to everyone's learning needs. Rather than making class attendance "mandatory," teens should be identified that may not benefit from this and plan alternative strategies. The teen who lives alone or with friends may benefit more from a one-to-one relationship where individual needs can be identified. In line with the teen's need for independence, perhaps a contracting system as described by Peoples and Barrett (1979) would be more appropriate.

As perceived susceptibility had a negative influence on class attendance, potential complications should be taught but should not become the focus of class content. For example, fear tactics should not be used, but instead positive behaviors that the teen can do to help decrease the possibility of the complication should be stressed. What could be discussed is the impact the pregnancy may have on the teen's life and to help her realistically understand what is happening to her. The Beliefs About Your Pregnancy part of the questionnaire could be administered to teens to

assess the teens health beliefs. Those teens that have high perceived impact could be considered low risk because they will be likely to attend the class. Teens with high perceived susceptibility could be considered least likely to attend the class and alternative strategies planned such as one-to-one teaching.

Other aspects of the assessment will help the nurse identify teens that are more likely to attend classes. The nurse can ask the teen about her prior health care experience such as seeing a doctor or dentist. Teens that have not recently seen a health care provider may need closer supervision. Teens that are attending school or have completed high school, will be more likely to attend classes and may need less individual attention.

An ideal clinic situation might be as follows. When the teen registers for the clinic, an initial intake interview will include, information on family structure, source of income, educational experiences, experiences with the health care system and health beliefs. The nurse will help the teen identify a family member, friend or boyfriend that is supportive and interested. The nurse will discuss the learning alternatives available at the clinic and encourage the teen toward the alternative which seems most appropriate, based on the information obtained. If the teen chooses the classes, a contract can be set up as to which classes the teen will attend and how many. If the teen does not seem likely to attend the classes, one-to-one sessions can be

arranged with a nurse, social worker, or nutritionist where information can be provided that may enhance preventive health behavior. One primary topic would be discussion about the impact of the pregnancy on the teen's life.

The clinic personnel would also encourage family or other support person participation. They would be encouraged to accompany the teen to clinic as appropriate. Groups could be held for these family members or perhaps small groups arranged for the pregnant teen and her significant other to attend together. None of the literature reviewed discussed the teen's boyfriend/husband attending classes in contrast to more traditional prenatal classes geared toward middle and upper class couples where it was expected the husband would attend. Groups could also be available for teens that were accompanied by a family member to discuss the concerns that might be unique to this group.

Nurses could also promote programs of a community nature that may indirectly influence the pregnant teen's health behavior. For example, nurses could encourage and support classes and programs that teach about pregnancy in the regular school curriculum. The nurse could investigate whether alternative high schools are available in the community so that the pregnant adolescent is given the opportunity to continue her schooling if she is not comfortable in the regular high school.

Nurses should be supportive of programs that teach preventive health behavior in childhood so that the

adolescent is aware of the importance of this activity. Encouraging health curriculum is one way that health information could be available to all people.

In summary, nurses can enhance the pregnant adolescent's attendance at a prenatal class by enhancing the environmental factors that contribute to attendance and by helping the adolescent to realistically understand what impact the pregnancy will have on her life. Nurses can try to involve a significant other with the teen during clinic time, by attending groups with her, or other learning experiences at the clinic. Adolescents should be assessed for factors that contribute to class attendance and plan alternative strategies for those that may not benefit from a group experience. Nursing can support community programs such as alternative high schools and health and pregnancy teaching in the schools to increase the pregnant adolescent's awareness of preventive health behavior.

Summary

In Chapter VI, a summary and interpretation of the research findings was presented. Future research recommendations were made as well as recommendations for nursing practice.

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APPENDICES

APPENDIX A

INFORMED CONSENT FORM

APPENDIX A

INFORMED CONSENT FORM

MICHIGAN STATE UNIVERSITY

COLLEGE OF NURSING

Dear Adolescent,

As a graduate nursing student at Michigan State University, I am in the process of conducting a study to find out how pregnant adolescents feel about being pregnant and how these feelings affect their behavior. The purpose of the study is to help health professionals, such as nurses, learn how they can best help the adolescent during her pregnancy.

For your part, I will ask you to answer a written questionnaire that will take you about 20-30 minutes to complete. I will give you the questionnaire and pick it up again in 3-4 days. In this way, you can answer the questions at a time convenient for you.

Although you will be asked to give your name, all your answers are confidential, and will be shared with no one. Your decision to participate in this study will in no way affect the quality of the care you receive from the agency that gave me your name.

After you have given your permission to participate in the study, I will give the questionnaire to you and arrange for a time for the questionnaire to be picked up. You are free to withdraw your participation from the study at any time.

Thank you for your time and cooperation. I hope to be in touch with you soon. If you have any questions or concerns, contact me at 777-2878, or write me at A230 Life Science Building, Michigan State University, East Lansing, Michigan 48824.

_____

Signature Date

* *

I voluntarily consent to participate in this study. I have had an opportunity to ask questions.

_____

Signature of participant Date

_____

Signature of witness Date

I voluntarily consent to participate in this study. I have had an opportunity to ask questions.

_____

Signature of participant Date

_____

Signature of witness Date

APPENDIX B

DEBRIEFING LETTER

APPENDIX B

DEBRIEFING LETTER

Dear

If you recall, you participated in a study during your pregnancy which asked you questions about yourself and your feelings about your pregnancy. There was another aspect to that study which I can tell you about now.

The purpose of the study was to examine factors that may influence a pregnant teen's attendance at prenatal classes. Therefore, your attendance at the prenatal classes associated with your prenatal clinic was monitored and this information was compared with the other information you gave me on the questionnaire. I could not tell you about this at the time you filled out the questionnaire as this may have influenced your attendance at the class.

If you have any questions or concerns about this, please contact me at #777-2878, or write me at A230 Life Science Building, Michigan State University, East Lansing, Mi., 48824. Thank you again for participating in my study. Hopefully, nurses will be better prepared to meet the needs of pregnant teens as a result of the information I have obtained.

Sincerely,

Nancy Nuismer, R.N.

APPENDIX C

QUESTIONNAIRE

APPENDIX C

QUESTIONNAIRE

Site _ _	(1-2)
Pt. I.D. _ _	(3-4)
Card No. _ _	(5-6)
Date _ _ _ _ _ _	(7-12)

PART A
BACKGROUND INFORMATION

This section asks general questions about you and your current situation. This information will help to make the other information asked later more meaningful. Each question will give you instructions as to how to answer. Remember that all this information is confidential and will not be shared with anyone. Please answer as honestly as you can.

1. When were you born? (WRITE IN) _____/____/_____ (month) (day) (year) (13-14)

2. Are you seeing a doctor for your pregnancy? (CHECK ONE)

   ____ Yes ____ No → (SKIP TO Q. 3) (15)

2a. In what month of your pregnancy did you start seeing the doctor? (CHECK ONE)

   ____ 1st to 3rd ____ 4th to 6th ____ 7th to 9th (16)

3. Before you became pregnant, did you ever visit the doctor for a check-up when you were not sick? (CHECK ONE)

   ____ Yes ____ No → (SKIP TO Q. 4) (17)

3a. How often did you visit the doctor for a check-up? (CHECK ONE)

____ Once every 12 months
____ Once every 13-24 months
____ Once every 25-36 months
____ Once in my life (18)

4. Before you became pregnant, did you ever visit the dentist for a dental check-up when you were not having problems? (CHECK ONE)

____ Yes ____ No → (SKIP TO Q. 5) (19)

↓

4a. How often did you visit the dentist for a check-up? (CHECK ONE)

____ Once every 12 months
____ Once every 13-24 months
____ Once every 25-36 months
____ Once in my life (20)

5. Since you became pregnant, have you seen a dentist? (CHECK ONE)

____ Yes ____ No → (SKIP TO Q. 6) (21)

↓

5a. Why did you see the dentist? (CHECK ONE)

____ I was having a dental problem.
____ For a dental check-up, I was not having a problem with my teeth. (22)

6. Before you became pregnant, did a doctor ever tell you that you had any of the following diseases? (CHECK ALL THAT APPLY)

____ Heart disease ____ No (23-24)
____ Cancer
____ Epilepsy (convulsive disorder) (25-26)
____ Allergies
____ Diabetes (27-28)
____ Kidney disease
____ Respiratory disease (29-30)
____ Any other not listed (WRITE IN) _____

7. With whom are you now living? (CHECK ALL THAT APPLY)

____ Parent or parents
____ Foster Family
____ Other family members (brother, sister, aunt, uncle)
____ Boyfriend
____ Friend or friends
____ No one, I live alone
____ Any other person not listed (WRITE IN) _____ (31-32)

8. Do you know with whom you plan to live after your baby is born? (CHECK ONE)

____ Yes ____ No → (33)

↓

8a. With whom do you plan to live after the baby is born? (CHECK ALL THAT APPLY)

____ Parent or parents
____ Foster family
____ Other family members (brother, sister, aunt, uncle)
____ Boyfriend
____ Husband
____ Friend or friends
____ No one, I will live alone with my baby (34-35)

9. What are all the sources of the money you use for basic necessities such as food, housing, and medical care? (IN EACH COLUMN, CHECK ALL THAT APPLY)

FOOD	HOUSING	MEDICAL CARE	
___Cash from parents	___Cash from parents	___Insurance from parents	(36-37)
___Live with parents	___Live with parents	___Public assistance, such as Medicaid	(38-39)
___Public assistance, such as welfare	___Public assistance, such as welfare	___Own insurance from working	(40-41)
___Own salary or savings	___Own salary or savings	___My own cash or savings	(42-43)
___Cash from boyfriend	___Cash from boyfriend	___Cash from family, friends	(44-45)
___Live with boyfriend	___Live with boyfriend	___No arrangements made	(46-47)
___Cash from relatives	___Cash from relatives	___Other	(48-49)
___Live with relatives	___Live with relatives		(50-51)
___Unemployment benefits	___Unemployment benefits		
___Other	___Other		

10. Do you know what the source of your money will be after your baby is born? (CHECK ONE)

____ Yes ____ No → (SKIP TO Q. 11) (54)

↓

10a. What will be the sources of the money you will use for basic necessities such as food, housing, and medical care after your baby is born? (IN EACH COLUMN CHECK ALL THAT APPLY)

FOOD	HOUSING	MEDICAL CARE	
___Cash from parents	___Cash from parents	___Insurance from parents	(55-56)
___Live with parents	___Live with parents	___Public assistance, such as Medicaid	(57-58)
___Public assistance, such as welfare	___Public assistance, such as welfare	___Own insurance from working	(59-60)
___Own salary or savings	___Own salary or savings	___Husband's insurance	(61-62)
___Cash from boyfriend	___Cash from boyfriend	___Own cash or savings	(63-64)
___Live with boyfriend	___Live with boyfriend	___Cash from family, friends, or boyfriend	(65-66)
___Live with husband	___Live with husband	___Other	(67-68)
___Cash from relatives	___Cash from relatives		(69-70)
___Live with relatives	___Live with relatives		(71-72)
___Unemployment benefits	___Unemployment benefits		
___Other	___Other		

11. Do you have plans to get married? (CHECK ONE) (73)

___ Yes ___No → (SKIP TO Q. 12)

↓

11a. When do you plan to get married? (CHECK ONE)

___Before the baby is born
___After the baby is born
___Definite time not set (74)

12. Do you now work full or part time outside of your home for money? (CHECK ONE)

___ Yes ___ No (75)

13. What was the last grade in school you completed? (CHECK ONE)

___8th grade or less
___9th grade
___10th grade
___11th grade
___High school diploma
___First or second year of college (76)

14. Are you presently attending school?

___ Yes ___ No → (SKIP TO Q. 15) (77)

14a. What kind of school do you attend? (CHECK ONE)

___Regular high school
___Vocational school (secretarial, beauty)
___Alternative high school
___Adult high school
___College
___Other (WRITE IN) _____ (78)

15. Do you plan to return to school after your baby is born? (CHECK ONE)

___ Yes ___No → (SKIP TO Q. 16) (79)

15a. What kind of school do you plan to attend? (CHECK ONE)

___Regular high school
___Vocational school (secretarial, beauty)
___Alternative high school
___Adult high school
___College
___Uncertain (80)

KEYPUNCH: DUPLICATE COLUMNS 1-4

0 2
(5-6)

KEYPUNCH: DUPLICATE COLUMNS 7-12

16. Which of the following have helped you to learn about your pregnancy, taking care of yourself and your new baby? (CHECK ALL THAT APPLY)

___Private doctor or nurse practitioner (13-14)
___Community health nurse
___Health department clinic (15-16)
___Friends
___Parents, other family members (17-18)
___Classes at school, teachers
___Reading books, magazines, pamphlets (19-20)
___Programs on TV
___Any other not listed (WRITE IN) _____

17. Do you know who the father of your baby is?

___ Yes ___No, uncertain → (SKIP TO PART B) (21)
↓

17a. If you could rate the relationship you have with the father of your baby on a scale of 0 to 10, with zero being no relationship and 10 being a close, intimate relationships, what number would you pick?
(WRITE IN) _____ (22-23)
↓

17b. How often have you met and talked with the father of your baby in the last month? (CHECK ONE)

___Never
___Once
___Two or three tines
___Nearly every day
___Daily (24)

GO ON TO PART B

PART B
PERSONAL VIEWS ABOUT LIFE

Everyone has certain views about themselves and how they fit in with the world around them. This section contains 12 pairs of statements that describe how some people feel about themselves. In order to help me understand how you feel about yourself, please select one statement from each pair that comes closest to how you feel. For example:

(a) I like candy.

(b) I do not like candy.

If you liked candy, you would put a circle around the letter (a). If you do not like candy, you would put a circle around the letter (b). You may not agree entirely with either statement, but choose the one that is the closest to how you feel. There are no right or wrong answers. Please answer every question.

1. (a) I enjoy being active in clubs and youth groups.

   (b) I would rather do activities that I can do on my own time and at my own speed. (25)

2. (a) When I daydream, it is usually about things that have happened to me.

   (b) When I daydream, it is usually about the future and what it has in store for me. (26)

3. (a) No matter how well I do a job, I always end up thinking that I could have done better.

   (b) Whenever I complete a job that I have worked hard on, I usually believe that I've done it well. (27)

4. (a) I usually say what I feel about something, even if it seems like I'm the only one in a group with that point of view.

   (b) If it seems I am the only one in a group with a certain point of view, I try to keep quiet in order to avoid bringing attention to myself. (28)

5. (a) Usually, I can keep better control of myself and of situations if I maintain an emotional distance from others.

   (b) I do not have to fear loss of control of myself and of situations, simply because I become emotionally involved with another person. (29)

6. (a) I have doubts as to the kind of person my abilities will enable me to be.

   (b) I try to think of ideas now that will help me to reach my future goals. (30)

7. (a) How good I feel about myself depends on the success or failure of my behavior in a given situation.

   (b) How good I feel about myself, while flexible, remains about the same in most situations. (31)

8. (a) While there may be some bad things about competition, I agree that it is sometimes necessary and even good.

   (b) I do not enjoy competition and often do not see the need for it. (32)

9. (a) There are times when I don't know what is expected of me.

   (b) I have a clear idea of how my life will be in the future. (33)

10. (a) What I demand of myself and what others demand of me are often in conflict.

    (b) Most of the time, I don't mind doing what others demand of me because they are things I would probably have done anyway. (34)

11. (a) When I have to do something that I don't particularly want to do, I can usually make myself do it anyway.

    (b) When I have to do something, I will usually find other interesting things to do, rather than finish the task. (35)

12. (a) Because of my philosophy of life, I have faith in myself and in society in general.

    (b) Because of the uncertainty of life, it is natural for me not to have trust in society, in others, or even in myself. (36)

GO ON TO PART C

PART C
BELIEFS ABOUT YOUR PREGNANCY

Everyone has certain beliefs about their pregnancy and how it affects their lives. Below is a list of statments that some people believe about their pregnancy and the way it affects certain aspects of their of their lives. Since I am trying to understand your feelings or beliefs, please indicate the extent of your agreement with each statement. There are no right or wrong answers.

Please answer all questions in the following way.

If you strongly agree with the statement, circle Strongly Agree.
If you agree with the statement, circle Agree.
If you disagree with the statment, circle Disagree.
If you strongly disagree with the statement, circle Strongly Disagree.

1. When my baby is born, there could be something wrong with him/her.

Strongly Agree | Agree | Disagree | Strongly Disagree (37)

2. When my baby is born, his/her size might be smaller than average.

Strongly Agree | Agree | Disagree | Strongly Disagree (38)

3. When my baby is born, he/she will not have any health problems.

Strongly Agree | Agree | Disagree | Strongly Disagree (39)

4. When my baby is born, he/she is not likely to have a birth defect.

Strongly Agree | Agree | Disagree | Strongly Disagree (40)

5. My baby could have more health problems than babies born to pregnant women who are older than I.

Strongly Agree | Agree | Disagree | Strongly Disagree (41)

6. I will not develop medical complications during my pregnancy.

Strongly Agree | Agree | Disagree | Strongly Disagree (42)

7. I am more likely to have problems while I am pregnant than pregnant women who are older than I am.

Strongly Agree	Agree	Disagree	Strongly Disagree	(43)

8. I am not as likely to have problems after the baby is born than women who are older than I.

Strongly Agree	Agree	Disagree	Strongly Disagree	(44)

9. Having a baby will not prevent me from doing things that I wanted to do before I became pregnant, for example, finishing school, earning money, or traveling.

Strongly Agree	Agree	Disagree	Strongly Disagree	(45)

10. My pregnancy will force me to "grow up."

Strongly Agree	Agree	Disagree	Strongly Disagree	(46)

11. After my baby is born, I may not be able to see my friends as much as I do now.

Strongly Agree	Agree	Disagree	Strongly Disagree	(47)

12. After my baby is born, my life will be no different from the way it is now.

Strongly Agree	Agree	Disagree	Strongly Disagree	(48)

13. It will not be difficult for me to go out and work, if I have to, after my baby is born.

Strongly Agree	Agree	Disagree	Strongly Disagree	(49)

14. Because of my pregnancy, I am not able to do as many activities as I did before I became pregnant.

Strongly Agree	Agree	Disagree	Strongly Disagree	(50)

15. My relationship with my parents will be no different after my baby is born.

Strongly Agree	Agree	Disagree	Strongly Disagree	(51)

16. If my baby was born with a health problem such as a birth defect, it would not be more difficult for me to finish school.

Strongly Agree	Agree	Disagree	Strongly Disagree	(52)

17. If I have a health problem while I am pregnant, my ability to take care of my baby after delivery might be affected.

Strongly Agree	Agree	Disagree	Strongly Disagree	(53)

18. It might be difficult for me to go to school, if I want to, after my baby is born.

Strongly Agree	Agree	Disagree	Strongly Disagree	(54)

19. My pregnancy has changed my image of myself as a women.

Strongly Agree	Agree	Disagree	Strongly Disagree	(55)

20. After my baby is born, my sexual relationships will be no different from my sexual relationships before I became pregnant.

Strongly Agree	Agree	Disagree	Strongly Disagree	(56)

21. I might have less time for myself after my baby is born.

Strongly Agree	Agree	Disagree	Strongly Disagree	(57)

22. I can learn a lot about my pregnancy if I attend pregatal class.

Strongly Agree	Agree	Disagree	Strongly Disagree	(58)

23. Eating a well balanced, nutritious diet is very important while I am pregnant.

Strongly Agree	Agree	Disagree	Strongly Disagree	(59)

24. It is not important for me to see my doctor regularly while I am pregnant.

Strongly Agree	Agree	Disagree	Strongly Disagree	(60)

25. It would not be beneficial to talk to someone about my feelings while I am pregnant.

Strongly Agree	Agree	Disagree	Strongly Disagree	(61)

26. Learning about what is going to happen to me during labor and delivery could make it easier for me.

Strongly Agree	Agree	Disagree	Strongly Disagree	(62)

27. Talking to other girls my age who are pregnant would not help me to understand my pregnancy any better.

Strongly Agree	Agree	Disagree	Strongly Disagree	(63)

28. Learning about how to take care of my baby before he/she is born would help me to be a better mother later.

Strongly Agree	Agree	Disagree	Strongly Disagree	(64)

29. It would not be helpful for me to learn about some of the emotional ups and downs I might have after my baby is born.

Strongly Agree	Agree	Disagree	Strongly Disagree	(65)

30. I would like to talk to someone who would listen to me and understand my feelings.

Strongly Agree	Agree	Disagree	Strongly Disagree	(66)

You have now completed the questionnaire. I appreciate your willingness to take time to do this, and I hope it has been a learning experience for you. I will be contacting you again in several days to pick up the questionnaire. I would like to visit you later on in your pregnancy or after delivery as a follow-up to the study. To do so, I will need your name and address. Remember that all your answers are confidential and I will not share them with anybody.

Name _____

Address _____

_____

I would appreciate any comments you wish to make about the questionnaire, how you liked filling it out, and how you felt about any of the questions.

Thank you again.

APPENDIX D

PEARSON PRODUCT MOMENT CORRELATIONS BETWEEN PERSONAL DESCRIPTIVE DATA AND CLASS ATTENDANCE

Table D-1.--Pearson Product Moment Correlations Between Personal Descriptive Data and Class Attendance.

Variable	Class Attendance	Variable	Class Attendance
Age	.09		
Living Plans Before Delivery		Food Source After Delivery	
parents	.05	cash-parents	.39*
foster family	.18	live with parents	-.13
other family	.01	public assistance	.04
boyfriend	-.07	salary	.18
friends	.29*	cash-boyfriend	.14
alone	-.15	live with boyfriend	.14
other	.13	live with husband	-.18
Living Plans After Delivery		case-relatives	.17
parents	.02	unemployment benefits	.17
other family	.10	other	.06
boyfriend	-.11	Housing Before Delivery	
husband	.11	cash-parents	.38**
friends	.19	live with parents	-.24
alone	-.10	public assistance	.19
Food Source-Before Delivery		salary	.15
cash-parents	.20	cash-boyfriend	-.16
live with parents	-.19	live with boyfriend	-.12

Table D-1.--Continued.

Variable	Class Attendance	Variable	Class Attendance
public assistance	-.01	cash-relatives	.16
salary	.15	live with relatives	.08
cash-boyfriend	-.09	unemployment benefits	-.06
live with boyfriend	.09	other	-.23
cash-relatives	.16	Medical Care After Delivery	
live with relatives	.08	insurance parents	-.35*
unemployment benefits	-.05	public assistance	.25
other	-.05	own insurance	.10
Housing After Delivery		husband's insurance	-.07
cash-parents	.17	own cash	.17
live with parents	-.15		
public assistance	-.07		
salary	.18		
cash-boyfriend	.14	Marriage plans	-.31*
live with boyfriend	-.01	Timing of marriage	-.09
live with husband	-.06	Educational level	.26*
cash-relatives	.07		
live with relatives	.37*		
unemployment benefits	.17		
other	-.20		

Table D-1.--Continued.

Variable	Class Attendance	Variable	Class Attendance
Medical Care Before Delivery			
insurance-parents	-.16		
public assistance	.18		
own insurance	.09		
own cash	.02		
no plans	-.11		

* significant at .05 level
** significant at .01 level

APPENDIX E

PEARSON PRODUCT MOMENT CORRELATIONS BETWEEN SOCIAL DATA AND CLASS ATTENDANCE

Table E-1.--Pearson Product Moment Correlations Between Social Data and Class Attendance.

Variable	Class Attendance	Variable	Class Attendance
Month prenatal care started	-.30*	Source of Learning About Pregnancy	
Check-ups prior to pregnancy	-.28*	doctor or nurse practitioner	.13
Frequency of check-ups	-.18	community health nurse	.10
Dental check-ups prior to pregnancy	-.14	health department clinic	.10
Frequency of dental checks	-.05	friends	-.02
Dental visits since pregnant	-.12	parents	.02
Reason for dental visit	.28	classes at school	-.13
Currently working	-.16	reading	.18
Currently attending school	-.02	television	.07
Type or school attending	.33	other	.10
Plans to return to school	.26*	Father of baby known	-.09
Type of school planning to return to	.08	Quality of relationship	.22
		Frequency of visits with baby's father	.21

* significant at .05 level.

APPENDIX F

PEARSON PRODUCT MOMENT CORRELATIONS FOR PERCEIVED IMPACT AND PERSONAL DESCRIPTIVE AND SOCIAL VARIABLES

Table F-1.--Pearson Product Moment Correlations for Perceived Impact and Personal Descriptive Variables.

Variable	Class Attendance	Variable	Class Attendance
Age	-.18		
Living Plans Before Delivery		Food Source After Delivery	
with parents	.11	cash from parents	.08
foster family	.07	live with parents	.10
other family members	-.24	public assistance	-.09
boyfriend	.09	own salary	-.10
friends	-.05	cash from boyfriend	.09
alone	.18	live with boyfriend	.07
other	-.18	live with husband	.27
Living Plans After Delivery		cash from relatives	.00
parents	.02	unemployment	-.17
other family	-.02	live with relatives	--
boyfriend	.10	other	.14
husband	-.21	Housing Source-Before Delivery	
friends	.42**	cash from parents	-.02
alone	-.08	live with parents	-.06
Food Source-Before Delivery		public assistance	-.10
cash from parents	-.21	own salary	-.20
live with parents	-.19	cash from boyfriend	-.12

Table F-1.--Continued.

Variable	Class Attendance	Variable	Class Attendance
public assistance	-.07	live with boyfriend	.06
own salary	-.05	cash from relatives	.02
cash from boyfriend	.34*	live with relatives	.30*
live with boyfriend	.02	unemployment benefits	.21
cash rom relatives	.02	other	.11
live with relatives	.29*	Medical Care-After Delivery	
unemployment	.06	parents' insurance	.13
other	.02	public assistance	-.11
Housing Source After Delivery		own insurance	-.05
cash from parents	-.11	husband's insurnace	.06
live with parents	-.08	own cash	.19
public assistance	-.01	cash from others	--
own salary	-.10	other	--
cash from boyfriend	.09		
live with boyfriend	.30*		
live with husband	.04	Educational level	-.02
cash from relatives	.00	Plans for marriage	.02
live with relatives	.23	Timing of marriage	-.11
unemployment benefits	-.17		
other			

Table F-1.--Continued.

Variable	Class Attendance	Variable	Class Attendance
Medical Care-Before Delivery			
parent's insurnace	.04		
public assistance	-.13		
own insurance	.24		
own cash	.08		
cash from family	--		
no plans	-.04		
other	--		

* significant at .05 level
** significant at .01 level

Table F-2.--Pearson Product Moment Correlations for Perceived Impact and Social Variables.

Variable	Perceived Impact	Variable	Perceived Impact
Month prenatal care started	.05	Source of learning about pregnancy	
Check-ups prior to pregnancy	.23		
Frequency of check-ups	.78**	private doctor or nurse practitioner	-.03
Dental visits prior to pregnancy	-.18	community health nurse	-.22
Frequency of dental checks	.17	health department clinic	-.08
Dental visits since pregnancy	-.05	friends	-.10
Reason for dental visit	.24	parents	-.11
Currently working	.06	classes at school	-.20
Currently attending school	-.02	reading	.33*
Type of school attending	-.02	television	.04
Plans to return to school	.00	other	-.04
Type of school planning to return to	-.22	Father of baby known	-.23
		Quality of relationship	.16
		Frequency of visits with baby's father	.13