DEVELOPMENT OF AN ASSESSMENT TOOL TO ASSES COGNITIVE DEVELOPMENT AND THE DEVELOPMENTAL TASK OF COMFORT WITH BODY IMAGE AND HOW THIS INFLUENCES CONTRACEPTIVE DECISION-MAKING IN EARLY ADOLESCENT FEMALES

by

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Abstract

DEVELOPMENT OF A TOOL TO ASSESS COGNITIVE AND DEVELOPMENTAL FACTORS THAT INFLUENCE CONTRACEPTIVE DECISION-MAKING IN EARLY ADOLESCENT FEMALES.

Adolescent pregnancy presents a complex problem involving many factors and resulting in many negative outcomes for the adolescent,her child,and society as a whole. The focus of this scholarly project was to develop an assessment tool to assess cognitive development and comfort with body image and determine how this influences contraceptive decision-making in early adolescent females age twelve to fourteen.

Cognitive development was determined using Leskow and Smock's four digit permutation task. Responses were evaluated for 1.number of permutations generated, 2.number of digits held constant, and 3. the systematic identification of permutations.Comfort with body image was assessed using the Body Satisfaction Scale by Lauber. The scale consist of 50 body parts and functions which the subject rate on a five point Likert scale as to the degree of satisfaction . Contraceptive decision-making was determined by using The Means-End Problem Solving Procedure developed by Platt and Spivak. Correlational statistics would be used to establish a relationship between age,cognitive level,comfort with body image and means-end problem solving.

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CHAPTER I

THE PROBLEM

Introduction

One in ten teenagers becomes pregnant each year in the United States and one in five becomes pregnant at some time during her teen-age years (Howard, 1985). In 1950, only four percent of all births were to unwed mothers, whereas in 1979 the figure had risen to seventeen percent (Morgan, 1987). In 1982, births to adolescents accounted for forty percent of all births and twenty-six percent of all first births (Moore and Wertheimer, 1984). It is very important to note that while the actual numbers of pregnant adolescents are rising, the rate of teen-age pregnancies is decreasing except in one significant age group - that of ten to fourteen year olds (Leppart, 1984). These statistics allow the United States the dubious distinction of having one of the industrialized world's highest teen-age birthrates (Howard, 1985). Furthermore, early repeat pregnancies among adolescents have been found to occur at a fairly high rate. Twenty percent of teen-age mothers had a repeat pregnancy within twelve months of delivering their first child and thirty-eight percent had one within twenty-four months (Moore, et al, 1984).

Adolescent pregnancy presents a complex problem involving many factors and resulting in many untoward outcomes for the adolescent, her child and society as a whole (MacAvery, 1981). Many pregnant adolescent females experience complications during their pregnancies, such as pregnancy induced hypertension, prolonged or inadequate forces of labor, inadequate weight gain and iron deficiency anemia (Mercer, 1979). Overall, maternal morbidity and mortality rates are higher among adolescent females than in the general population (Howard and Sater, 1985). Furthermore, infants born to adolescent females often have complications. Risk factors include prematurity, low birth weight and a high infant death rate in the first year of life (Polit and Kahn, 1986).

Adolescent pregnancy also carries with it a risk of sociological complications. An adolescent mother's schooling is likely to be interrupted, she often has additional children soon after her first, she develops inadequate job skills and her risk of being poor is increased (Mac Avery, 1981). As a result, the adolescent mother is more likely to receive public assistance. Over half of the budget for Aid to families with Dependent Children is expended on families in which the mother was an adolescent when she had her first child. Adolescents who married due to the pregnancy also tend to have less stable marriages and are at an increased risk of divorce, resulting in an unstable family situa-

tion (Moore et al, 1984).

Teen-age pregnancies also carry a psychological risk for the adolescent. The pregnant adolescent has the task of learning to care for the infant after birth and coping with the transition to the role of parent. These tasks are superimposed on the equally difficult tasks of normal adolescence, such as establishing a meaningful bond with a member of the opposite sex and struggling to become her own person socially and emotionally (Leppart, 1984).

Traditionally, pregnancy prevention interventions used with adults and older teens do not consider the significant cognitive developmental differences between the early adolescent (12 to 14 year olds) and other age groups. The early adolescent is at greater risk for an unplanned pregnancy due to the cognitive style of concrete thinking and lack of mastery of developmental tasks. Methods and strategies that are consistent with developmental age and stages provide cogent approaches to early adolescent pregnancy prevention (Proctor, 1986).

The major cognitive task in adolescents is the mastery of thought. The early adolescent is generally in the concrete stage of cognitive development. This stage is characterized by the inability to look ahead, a belief in an imaginary audience and use of magical thinking, i.e. it can't happen to me. By the time the

adolescent reaches adulthood, cognitive development progresses from concrete to formal operational thinking.

Formal operational thinking described by Piaget (1958) is characterized by the ability to think abstractly. The formal operational thinker analyzes situations and attempts to hypothesize outcomes. The formal operational thinker is also future oriented, versus the concrete thinker's "here and now" attitude.

Along with cognitive advances, the adolescent is also experiencing change in psychosocial development. Mercer (1979) has cited six developmental tasks that an adolescent must master before achieving an adult self identity. These developmental tasks are (1) acceptance and achievement of comfort with body image; (2) determination and internalization of sexual identity and role; (3) development of a personal value system; (4) preparation for productive citizenship; (5) achievement of independence from parents; (6) development of an adult identity. Mastery of these six developmental tasks are strongly influenced by the adolescent's newly developed ability to entertain hypotheses or theoretical propositions that depart from immediately observable events. The adolescent cannot master developmental tasks without sufficient cognitive development.

Cognitive development and the completion of developmental tasks of adolescence influence the decision-making process in early adolescent females (Yoos,

1987). Any discussion of adolescent decision-making concerning contraceptive use must also consider the cognitive stages and developmental tasks of adolescence. For an adolescent using concrete operational thought, the immediate use of contraception may be higher than the more distant cost of pregnancy (Mercer, 1979). The adolescent who has not yet mastered comfort with body image may feel uncomfortable admitting to sexual activity, and delay seeking contraceptives. Schinke, Gilchrist and Small, (1979) suggest that many adolescents get pregnant not because they lack relevant information but because they lack cognitive and behavior skills necessary for using the information in the decision-making process to use birth control.

Purpose of the Study

The goal of this study is to develop an assessment tool to assess cognitive development and the developmental task of comfort with body image and how this influences contraceptive decision-making in early adolescent females age twelve to fourteen.

The assessment tool will be used to identify early adolescent females who are at greater risk for unplanned pregnancy due to contraceptive decision-making based on the cognitive style characterized by concrete thinking and/or to non-completion of the developmental

task of comfort with body image.

Relevance to practice

Several factors can be stated that substantiate the relevance of this topic to nursing practice. The first factor is that as health providers, nurses have access to early adolescent females since most contraceptive education classes are taught by nurses. Therefore, it is important to understand developmental factors influencing the use of birth control for the target population.

Another factor that makes adolescent pregnancy a significant problem which nursing must address in clinical practice is the fact that in the health care system, the medical model begins intervention only after illness has been diagnosed. Utilizing Mercer's developmental framework, or Orem's theory of self-care, a nurse could begin interventions before a pregnancy occurs thereby reducing the incidence of unwanted adolescent pregnancy.

An additional factor that substantiates the relevance of this topic to nursing practice is the fact that an analysis of four leading nursing journals found that only nineteen percent of clinical nursing research published was related to the health needs of women themselves or to the maternal role (Duffy, 1982). Therefore, this scholarly project will add to the

knowledge base for professional nursing and provide indications for future research.

Yet another factor that substantiates the relevance of this topic to nursing practice is the cost of adolescent pregnancy to the health care system and to the adolescent. This cost is not only money spent, but also time, energy and resources. Adolescent mothers experience rapid subsequent childbearing, lower educational attainment, lower earnings, higher welfare dependency and greater likelihood of abusing or neglecting their children (Polit, et al, 1986).

Further study on contraceptive use in early adolescent females would contribute to a better understanding of the effects of cognitive and social developmental factors that influence the decision to use birth control and identify components that impact significantly on the use of birth control in female early adolescents, thereby reducing the incidence of unwanted pregnancy.

Definition of Concepts

Adolescence

Many definitions of adolescence are found in the literature, each focusing on a different aspect of the progress from evolving from a child to an adult. For the purpose of this study, adolescence will be defined

according to Mercer (1979) as "a process of evolving from childhood to adulthood." Process connotes progression, continuing development, constant change or unfolding. Adolescence, viewed as a process infers an interaction and adjustment with self and the environment as the adolescent progresses to adulthood.

Some authors divide adolescence into three periods: early, middle and late as a way to provide some general and practical dimensions of the process of becoming an adult. (Mercer 1979). Each period has defined tasks that must be accomplished before progressing to the next period. Early adolescence includes the period of twelve to fourteen years of age, middle adolescence spans ages fifteen to sixteen and late adolescence spans from seventeen years of age to adulthood. Because of the differentiation between early, middle and late adolescence, only the period of early adolescence (12 to 14 years) will be included in this project.

Cognitive Development

During the process of evolving from a child to an adult, the adolescent, through interaction with her environment, develops a more complex thought process. For the purpose of this study, cognitive development will be defined as a series of stages in intellectual growth in which an individual's thought process and

mental reasoning progresses from undifferentiated to increased organization, resulting in increased awareness and judgment. This definition of cognitive development is based on Piaget's theory of intellectual development. The adolescent progresses to adulthood by using abstract conceptualization to attain a sense of identity and comfort with who she is and what her values are in life.

Developmental Tasks

Psychosocial development of the adolescence is accomplished through a series of tasks. For the purpose of this study, developmental task will be defined as growth responsibilities that arise during the process of developing an adult self-identity. The successful achievement of these growth responsibilities leads to happiness and success with later tasks, whereas failure leads to unhappiness in the individual disapproval by society, and difficulty with later growth responsibilities. As the adolescent progresses through the tasks of adolescence, she develops the skills to meet her needs and attain her goals and enables her to deal with the physical, social or psychological challenges of adult life.

Contraceptive Decision-Making

During the adolescent years the adolescent clarifies who she is, what she wants to be, to what group she belongs, and what her contribution to the world will be. The adolescent is able to plan her own life and course of action to meet her goals by examining alternate courses of action, and choosing the alternative which will most likely result in attainment of the goal. This process is known as decision-making.

Many definitions of decision-making exist in the literature. Yura and Walsh (1972) defined decision-making as the act of choosing among alternatives. The decision-making process is utilized by the adolescent who wants to avoid conception. For the purpose of this study, contraceptive decision-making will be defined as "the process of developing a plan to use birth control towards the goal of preventing conception."

Many factors can act as barriers to the contraceptive decision-making process in the early adolescent female. Cognitive development must include the aspect of futuristic thinking to allow the adolescent to consider the consequences of unprotected intercourse. Lack of mastery of developmental factors may also act as barriers to the contraceptive decision- making process. Every decision that is made is based in beliefs, attitudes and values which are in a state of

flux for the adolescent who has not yet mastered the developmental task of self-identity, (Mercer, 1979).

Limitations of the Study

1. This scholarly project will examine only twelve to fourteen year old females and is therefore not representative of all adolescents.

2. The specific dimensions of cognitive development and the developmental task of comfort with body image as they relate to the decision to use birth control by the early adolescent will be the focus of this scholarly project. These dimensions are not all inclusive. There may be other factors affecting the adolescent's use of birth control that are not examined.

3. The purpose of this study is to develop an assessment tool to assess early adolescent females for stage of cognitive development and completion of the developmental task of comfort with body image as they relate to the decision to use birth control. This will limit the results.

4. The assessment tool developed for this study will be administered to early adolescent females and will yield a one time measurement. There may be factors other than those assessed by the tool that contribute to the results obtained.

Assumptions of the Study

1. It is assumed Mercer's developmental framework will be applicable to early adolescent females.

2. It is assumed that females experiencing the early adolescent stage of development and are seeking contraceptives really do not want to become pregnant.

3. It is assumed that Piaget's theory of cognitive development is applicable to early adolescent females.

4. It is assumed that cognitive and developmental factors that are likely to influence the decision to use birth control by early adolescent females can be labeled and elicited by a questionnaire.

5. It is assumed that developmental tasks can be separated, labeled and measured.

6. It is assumed Orem's framework of self-care will be applicable to early adolescent females.

Overview of Remainder of Project

This scholarly project is organized into five chapters. In Chapter I an introduction and background of the problem is provided as well as the purpose of the study, conceptual definitions of the terms, and limitations and assumptions of the study.

In Chapter II, a conceptual framework for this study utilizing cognitive theory and developmental

theory is discussed.

A review and critique of pertinent literature to this study is presented in Chapter III. Existing research done in the pertinent areas is also presented in Chapter III.

Chapter IV will present an overview of methodology and procedure for date gathering, specific populations for sampling and an explanation of instruments used, data collected, and scoring. A proposed statistical analysis is also presented in Chapter IV.

In Chapter V, a summary is presented along with implications for further study and implications for nursing practice.

CHAPTER II

CONCEPTUAL FRAMEWORK

Introduction

In this chapter, the conceptual framework for this project is presented. The main concepts pertinent to this study include "adolescent," "early adolescence," "cognitive development," "developmental task," and "contraceptive decision-making." Each concept is defined and the development of each concept from the literature is presented.

A conceptual model based on Mercer's (1979) developmental framework and the interrelationships between the concepts are presented. A conseptual model based on Orem's theory of self-care is also presented.

ADOLESCENCE

Adolescence is a process of evolving from being a child to being an adult (Mercer, 1979.) During this time, the individual experiences many changes in physical, social and psychological growth. The individual also must master a series of developmental tasks necessary to achieve adulthood.

Physiological development during adolescence begins with the elevation of the breasts or the onset

of menstruation (menarch) in females. Starting at puberty, under the influence of gonadotropine, estrogen is produced by the theca interna, and the tranulosum cells of the ovary. Estrogens influence the enlargement of the vagina, uterus and fallopian tubes, the deposition of fat in the mons pubis, growth of pubic hair, broadening of the pelvis and the development of the breasts, (Leppart, 1974).

Physiological growth in adolescence is also marked by an accelerated rate of increase in height and weight. Many factors influence growth, including heredity, race, prior nutrition, sex and environment. The increase in height and weight varies widely in intensity, duration and age from one individual to another. The growth spurt in most girls begins at about age eleven, reaches a peak at about twelve years and then decreases rapidly to pre-growth spurt rates by about age thirteen with slow continuous growth for another four to five years, (Leppart, 1974). Other physiological changes are also taking place during adolescence. Muscular development proceeds rapidly as height increases, accompanied by increases in strength. A decline in the rate of development of fat is seen during the adolescent growth spurt, with post adolescent norms being twenty-three percent for females and sixteen percent for males, (Pender, 1987).

Additional physical changes occurring during the

adolescent growth spurt are development of secondary sex characteristics, specifically pubic hair growth and breast enlargement. Concurrent with physiological changes this period of time is also associated with psychological and sociological development.

During psychological development a different cognitive style evolves. According to Mercer (1979), "the adolescent progresses from the concrete and egocentric thinking of childhood to abstract conceptualization and the development of an ability to view the world from another person's perspective," (page 7). To develop a sense of identity and comfort with self, the adolescent has to deal with feelings, attitudes and values as they relate to her goals in life.

The adolescent must develop independence from her parents and assume responsibility for her own actions, (Mercer, 1979). Adolescents may vacillate between wanting to remain dependent and asserting their new independence, (White, 1987). Adolescence may be difficult for the adolescent and for her parents. Her parents may not look forward to her social, psychological or emotional independence and the adolescent also may not know if she wants to be independent, (Fox, 1980). The first argumentative disagreements between parent and adolescent are often trials in asserting independence. During adolescence, the adolescent may question ideas and values acquired mainly through the parents. Rules maintained by the parents are necessary

for the adolescent to become independent and yet assume the responsibility that comes with independence.

The adolescent spends more time with her peer group as she begins to develop independence from her parents The peer group provides a setting where the adolescent can search for her identity. Often, what the adolescent cannot do individually she can do in a group, (Card, 1978).

Membership into a peer group is generally important to the adolescent. The adolescent will try to conform to the group's norms as evidenced by similar hairstyles, clothing, make-up and slang terms, (Blos, 1979). The peer group also defines appropriate behavior, and it is important for the adolescent to conform. Being accepted as a member of the peer group has a great importance to self concept and development of self-identity. As the adolescent passes through this stage, the peer groups' influences lessen as the adolescent's self-identity becomes more internally established.

Adolescence is a fluid process of evolving from a child to an adult. Adolescence viewed as a process infers constant change, continued development and progression through phases. To help envision the process of psychosocial development, adolescence has been divided into three phases.

Adolescence can be divided into three practical phases of the process of becoming an adult. Early adolescence is designated as including the period from about twelve to fourteen years of age. Middle adolescence spans the ages from fifteen to sixteen years and late adolescence extends from seventeen years to adulthood. (Mercer, 1979). Early adolescence is the most crucial phase, since it sets the stage for progression within later phases (Mercer, 1979).

Physiological growth in early adolescence is often referred to as the growth spurt, and refers to the accelerated rate of increase in height and weight as well as the maturation of secondary sex characteristics. The rate of physiological growth is much slower in middle and late adolescence. Due to the accelerated rate of growth during early adolescence, becoming acclimated to a rapidly changing body size and its appearance and function takes much energy and concern on the early adolescent's part. There may be some resistance to the awkwardness of the changing physical shape as well as difficulty accepting the new maturing body on the part of the early adolescent. The early adolescent may be dissatisfied with her repidly changing body.

Cognitive development in early adolescence is dominated by descriptive comments of current circum-

stances, (Rosenberg, 1979). According to Gruber (1987), early adolescents pass from simplistic to more complex and relativistic thinking in the passage from adolescence to adulthood. Early adolescents generally have just started the process and are more likely to create personal fables, and by constructing imaginary mental images of their own uniqueness, they may think tragedies can happen to someone else but not to them.

Social development in early adolescence is characterized by movement away from parents and increased interaction with the peer group. This can be difficult at times due to vacillation between strong dependency and independence needs on the part of the adolescent. By middle to late adolescence, the adolescent manages to disengage from her parents and maintain relationships with significant others in her peer group.

Although male and female early adolescents pass through the same phases, there are some unique differences between male and female behavior during early adolescence. Whereas the male in early adolescence usually exhibits slovenly habits, females may maintain a neater personal appearance, (Mercer, 1979). The male usually maintains a close identification with his father, while the female during early adolescence uses her girlfriends as mother substitutes. The focus of this scholarly project is directed at females in the stage of early adolescence.

For the adolescent to develop an adult identity she must be able to think about self as self. It is during adolescence that a new style of thought emerges. Development of an adult identity is dependent on mastery of specific developmental tasks as well as development if formal operational thinking. For the adolescent to develop an adult identity she must be able to think about self as self. To be able to conceptualize self as self, the adolescent must be competent in abstract thought. It is during adolescence that a new style of thought emerges.

Cognitive Development

Cognition as a word is generally used to refer to more than thinking processes: for many theorists it includes sensation, perception and learning processes. Cognition develops in interaction with the circumstances of the individual's life, proceeding with the more concrete to the more abstract, (Freedman, 1972). According to Perry (1979), adolescent thought progresses from simplistic to complex in the passage from adolescence to adulthood.

Cognitive development can be influences by many factors. An individual inherits physical structures which set broad limits on her intellectual functioning, (Piaget, 1969). Cognitive development can also be influenced by social interaction. In the absence of

special intervention, children in a non-stimulating environment show a drop in intelligence test scores (Freedman, 1972).

Piaget (1969), divides cognitive development into four major periods: sensio-motor (birth to two years); pre-operational (two years to seven years); concrete operational (seven years to eleven years) and formal operational (eleven years and above). In the first developmental period, the sensio-motor stage, the infant first responds to her environment in an undifferentiated manner. In the next stage, the pre-operational thought period, the child begins to understand and use symbols. This is followed by concrete operations which is characterized by a present orientation. In the next stage, formal operations, the adolescent is capable of true abstract thought and is able to make hypotheses and test them logically.

Early adolescent females are in Piaget's concrete stage of cognitive development. For the adolescent utilizing concrete thinking, time orientation is usually past or present with the future perceived as being uncertain or idealized. Concrete thought is characterized by basing on experience versus exploring all possible solutions, (Proctor, 1979). Cognitive immaturity in early adolescence is reflected in the common behavioral pattern or risk taking behavior, (Cobliner, 1981).

The next phase of Piaget's development stages is formal operational thinking. Many important attributes differentiate formal operational thinking from the previous stage of concrete operations. First, the adolescent is capable of considering all the possible ways a particular problem might be solved and the possible variables to be considered. The second characteristic of formal operational thinking is deductive thinking. The third characteristic is the organization of operations into higher order operations - ways of using abstract rules to solve a whole class of problems. Thus, according to Piaget, formal thought is basically a generalized orientation toward problem solving, (Piaget, 1969).

While Piaget proposed that the formal stage of cognitive development begins at age eleven, subsequent investigators found that only a minority of adolescents conform at the highest level of formal operations (Dale, 1979; Tomlinson-Keasey, 1972). Due to the differences in cognitive ability, specifically concrete vs. formal operational thinking, adolescents will differ in their problem solving abilities. One goal of this scholarly project is to develop an assessment tool that will identify what cognitive ability the adolescent has, thereby allowing interventions to be tailored to cognitive ability.

Piaget has also hypothesized that formal operational thought is necessary for hypothetico-deductive

reasoning. The extent to which adolescents can make decisions based on the possibility of future events is dependent on their phase of cognitive development (White, 1987) and completion of developmental tasks, (Poole, 1987).

Adolescent Tasks

In addition to changes in cognitive ability, adolescents are also experiencing psycosocial changes. "Tasks" of adolescence have been formulated as milestones in the very fluid process of reaching adulthood. For the purpose of this study, Mercer's six tasks of adolescence will be used as a framework for assessing adolescent growth and development. (Mercer, 1979).

The first task postulated by Mercer is the acceptance and achievement of comfort with the body image. The body image is a mental picture of the way the body appears to the self, (Schilder, 1950). The body image aids in defining the reality of the world through defining the relationship of the body to the environment. In the adolescent, rapid bodily changes in height, weight and sexual characteristics can be met with some emotional resistance. Acclimating to the new body size and its appearance and functions takes much energy and concern on the adolescent's part. Difference in individual growth rates can be a concern for the adolescent in peer groups where conformity is

stressed.

Schonfeld (1963) organizes the structure of body image into 4 classifications: (1) the actual subjective perceptions of the body, both as to appearance and ability to function, (2) the internalized psychological factors arising out of the individual's personal and emotional experiences, (3) the sociological factors which include how parents and society react to the individual and how these are interpreted, and (4) the body image formed by the person's attitudes towards her body derived from experience, perception, comparison and identification with the bodies of other individuals (p. 846).

Secord and Jourard (1953) hypothesized that body image can be measured in terms of satisfaction or disatisfaction. The body dimensions and most negatively perceived by both boys and girls are height, weight, chest, waist and hips. Theoretically, the older the adolescent, the more likely it is that she will have mastered the task of comfort with body image, and therefore will display more overall satisfaction with her body image. One goal of this scholarly project is to develop an assessment tool that will identify comfort with body image as measured by satisfaction with body image, and how this influences contraceptive decision-making in early adolescent females. However, Mercer's five other tasks of adolescence will be briefly outlined.

Mercer's second task of adolescence is determination and internalization of a sexual identity rule. As for any role, it requires involvement on the adolescent's part in role taking behaviors such as becoming involved in heterosexual relationships, (Howe, 1981). In this respect, role taking is not done alone; it involves the interaction of another person. The adolescent developing her sexual role may use many persons of the opposite sex, as well as members of the peer group, rock stars, parent or fantasy heroes. The adolescent then proceeds to practice role playing with others. After much fantasy, experimentation with role playing, and interjection, a role is finally internalized and becomes part of the adolescent's identity.

The third task Mercer postulates is development of a personal value system. The adolescent's value system develops concurrently with her cognitive development, character and moral judgment, (Gilchrist and Schinke, 1983). Certain conditions must be met before a personal value system can be achieved; included in these are the development of a conscience, ability to think abstractly, the ability to make judgments and the ability to view a situation from another person's perspective, (Mercer, 1979).

The fourth task of adolescence postulated by Mercer is preparation for productive citizenship. This task has two aspects. It involves selection and prepa-

ration for a vocation and the development of cognitive skills necessary for participation in the social and political aspects of the community in which she lives, (Mercer, 1979).

Choosing a vocation for her lifetime can be a frightening task for the adolescent female. The adolescent may state "I am too young to choose what I want to do for the rest of my life." Many factors may limit the adolescent's choice, such as intellectual ability, financial resources, and the job market after preparation is completed. The adolescent female often considers her career choice with her concept of her possible future role as wife and mother.

The fifth task postulated by Mercer is independence from parents. This task involves both financial and psychological independence from parents. The desire to become financially independent has a great influence on the adolescent choice and preparation for a vocation. The adolescent may make the transition towards emotional independence gradually, or she may make it harshly or abruptly. As the adolescent asserts her independence, conflicts may arise between parent and child. The majority of adolescents however, are able to achieve independence without totally devaluating their parents value system.

Independence from parents is also characterized by movement towards peers, (Gilchrist and Schinke, 1977). It is in this peer group that the adolescent can avoid

isolation, conquer anxiety and complete the search for an adult identity.

Mercer's sixth task is development of an adult identity. The development of an adult identity is a interdependent aspect of all of the tasks of adolescence. The adult identity evolves from prior experiences and identifications and is integrated with physiological drives, physical and intellectual strengths and limitations and social and vocational roles.

The adult identity is characterized by the ability to maintain a sense of continuity over time. The identity is validated by interaction with significant others. The emerging adult identity moves from the early adolescent meaning of self and of others and is influenced by social and cultural factors that are integrated increasingly with age. To enter adulthood, the adolescent must master all of the previous tasks; the adult identity is a culmination of development in all of the previously stated tasks, (Mercer, 1979).

For the purposes of this study, only one developmental task will be assessed. An assessment tool consisting of all six developmental tasks would be too long and is beyond the scope of this study. The developmental task assessed will be comfort with body image. The rationale for assessing this specific developmental task is that the early adolescent has usually started to work on the issues involved with this task, and this

developmental issue influences early adolescent decision-making.

Contraceptive Decision Making

Decision-making is often defined as the act of choosing among alternatives, but this definition is deceptively simple. Webster's Dictionary, (1979), defines a decision as "the act of making up one's mind, the act of making a determination, as of a question or doubt, by making a judgment." A decision is based on certain assumptions and depends heavily on the environment in which the decision is being made, (Lancaster and Lancaster, 1982). In addition, a decision or choice is based on the examination of strategies and the range of possible outcomes, (Yura and Walsh, 1972).

Mercer (1979), defines decision-making as a "process of developing a plan for a proposed course of action toward some end or goal" (page 113). It involves (1) identifying the goal to be attained; (2) considering the alternatives and the consequences of various courses of action; and (3) selecting the alternative which carries the greatest probability of attaining the goal.

The crucial stage in the decision-making process is considering the alternatives and the consequences of various courses of action. Unable to think abstractly, or consider all the possible consequences of her ac-

tions, the early adolescent in the concrete stage of cognitive development is likely to base a decision on past experience rather than consider all of the possible solutions to the problem. Formal operational adolescents can consider potentialities as well as actualities, (Howe, 1981). The adolescent who has achieved formal operational thinking has the ability to reason abstractly and can plan effectively for contingencies, (Elkind, 1974).

Completion of developmental tasks also impacts the decision-making process. The first step in the decision-making process is recognizing the problem and formulating a goal. Values give significance and meaning to the problem and determine the degree and nature of the action to be taken, (Yura and Walsh, 1973). Values are in a state of flux for the early adolescent who has not yet mastered the developmental task of self-identity, (Mercer, 1979).

Responsible contraceptive decision-making entails the ability to repeatedly make responsible decisions that lead to effective contraception. In order to do this, adolescents need to master specific skills which are necessary in evaluating influences and outcomes of behaviors.

Juhasz and Schneider (1980) discuss three component characteristics necessary for adolescent sexual decision-making. These characteristics focus on three

basic influences: cognitive, socialization and situation specific. Cognitive influences on sexual decision-making include the analytic and synthetic aspects of sexual decision-making, including seeking information and contraceptive knowledge.

The second dimension of adolescent sexual decision-making involves socialization influences. Socialization variables involve the synthesis of the sociocultural value system, the incorporation of values from the individual's sexual socialization development, family and parental values and peer value systems. The adolescent, attempting to work through Erikson's identity crisis, is caught between parental values and peer values. Conflict may arise when the adolescent, who has not yet developed an adult self-identity, with her own value system, must chose between opposing value systems when making a decision.

Situational variables will vary from adolescent to adolescent and from time and place. Individual needs will determine which situational variables influence sexual decisions made by the adolescent. This may account for the unpredictable sporadic sexual behavior of adolescents.

The cognitive development of early adolescents makes contraceptive decision-making difficult, (Sachs, 1985). Adolescents must consider the long range consequences of their sexual behavior and repeatedly make the pregnancy prevention decision. Avoiding an unwanted

pregnancy requires futuristic thinking, which is part of formal operational thinking, (Piaget, 1972). Adolescents in the concrete stage of cognitive development may be unable to make the repeated futuristic decisions required to use contraception, (Sachs, 1985).

Incompletion of developmental tasks also makes contraceptive decision-making difficult for the early adolescent. During the process of evolving from a child to establishing an adult identity there is a profound impact of peers, significant others and parents on the adolescent's contraceptive decision-making, (Proctor, 1986). When formulating alternatives and considering the consequences of seeking contraception, many adolescents fear reprisals from parents for their sexual behavior, (Mercer, 1979). The peer group can impact the adolescent's contraceptive decision-making by providing misinformation on contraceptive methods such as withdrawal or safe periods during the menstrual cycle.

When considering the consequences or barriers to using contraception, embarrassment about her new self concept as a sexually active female may cause the adolescent who has not yet mastered the task of self-identity to avoid seeking contraception. Gruber (1987), states that adolescents who decide to use contraceptives are more likely to accept their sexuality that their non-contracepting peers. Adolescents who

are not comfortable with their sexuality are less likely to seek information about contraception.

Theoretically, the further the adolescent has progressed through the tasks of adolescence, the more likely she will be to (1) realize that pregnancy is a possible outcome of sexual intercourse; (2) choose one method of contraception; (3) commit herself to consistent use of the method despite negative pressure from a partner; and (4) be flexible enough to change her method as her sexual situation changes, (Hughes and Torres, 1987).

Integration with Nursing Framework

In this study, as a means of relating nursing intervention with the framework, Mercer's (1979) decision-making strategy will be utilized. As stated previously, many factors can affect the adolescent's ability to utilize the contraceptive decision-making process. Some of these factors are age, completion of mastery of developmental task, and cognitive development level.

In the conceptual framework, the nurse facilitation takes place within the context of the decision making strategy. The nurse using this strategy not only impacts the adolescent's contraceptive decision making, but also impacts the basic influences on that decision making, specifically the adolescent's cognitive ability and the completion or mastery on developmental tasks.

(See Figure I.)

The decision-making strategy is a teaching strategy based on the concepts of decision-making, teaching and learning, role modeling and adolescent development. The decision-making model focuses on the process of making a decision to prevent pregnancy rather than merely providing information on what to use to prevent pregnancy.

Contraceptive decision making is the process of developing a plan to use birth control towards the goal of preventing contraception. It involves (1) identifying the goal to be obtained, (2) considering the alternatives and the consequences of various causes of action, and (3) selecting the alternative which carries toe greatest probability of attaining the goal. (Mercer, 1979).

The decision-making model as a teaching process utilizes a cooperative approach between the adolescent and the nurse in which the adolescent plays an active role in the educational process. The goal of the decision-making strategy is to increase the adolescent's awareness of the decision-making process, clarify values that affect decisions, allow the adolescent to practice making decisions and educate the adolescent to obstacles and alternatives to specific decisions.

The decision-making model is introduced to the adolescents in a discussion group led by two nurses.

The nurse facilitates the process of participatory learning by progressing from simplex to complex concepts. By progressing from simple to complex concepts, the nurse also is able to provide information within a cognitive developmental framework. By progressing from simple to complex terms and repeating concepts, the nurse is also facilitating cognitive growth, which will in turn influence contraceptive decision-making. (See Figure I.)

Cognitive development istelf is influenced by age, environment, inherited physical structures and repeated exposure to stimuli. Exposure to a situation such as contraceptive decision-making can stimulate the adolescent to try to assimilate and accommodate the stimuli into existing or new cognitive structuree. (Sachs, 1985).

There is a relationship between cognitive development and mastery of developmental tasks. To develop an adult self-identity, the adolsecent must develop a sense of self as self, which requires the abstract thought process found in formal operational thought. The relationship between cognitive development and mastery of developmental tasks is not a focus in this study, but the relationship merits mention.

The steps of the decision-making process are introduced to the adolescent by using a non-threatening example such as selecting a new blouse. The adolescent is asked to identify the goal, consider the alterna-

tives and the consequences of various courses of action and then select the alternative which carries the greatest probability of attaining the goal. By asking questions, the nurse encourages the adolescent to recognize barriers to decision-making and to seek alternatives to her decision for each of the obstacles she mentions.

The nurse informs the adolescent discussion group that contraceptive decision-making is a process similar to the one used in selecting blouses. Acting as a role model, the nurse demonstrates through personal experience how a sexual decision is made. As a role model, the nurse serves the dual role of educating the adolescent regarding how decisions are made and also, by sharing her own experiences, allows the adolescent to discuss her own feelings regarding sexuality and contraception.

The concept of role modeling is an integral part of the teaching strategy. Bevis (1974), describes role modeling as "self-experienced" learning. Adolescents, who have not yet reached a stable self-identity are provided a safe environment in which they can try on and experience new behaviors. By directing her own learning, the adolescent moves closer to her own independence.

The nurse through discussion, introduces factors which inhibit and motivate adolescents in making deci-

sions regarding sexuality and contraception. Inhibiting factors may be fear of reprisal by authority figures, embarrassment of sexuality, lack of comfort with body image, or the belief that conception is not in the realm for them. Motivating factors include increased awareness of self as a sexually active person, peer acceptance of birth control or fear of pregnancy. The adolescents are then asked to think about their thoughts or feelings with the group. The focus is on the process through which they reached a decision and not the context of that choice. The nurse, by providing a framework for adolescents to organize feelings, values and behaviors, also helps facilitate growth towards mastery of specific developmental tasks (see Figure I). Mastery of developmental tasks, in turn, influences contraceptive decision making by influencing the consideration of alternatives and the consequences of various courses of action in the decision making process. Mastery of the developmental task of comfort with body image influences contraceptive decision-making by decreasing the inhibiting factor of embarrassment of seeking contraceptives, submitting to pelvic examinations, and admitting current sexuality.

Adolescents are in the process of changing from being a child to establishment of an adult self-identity. The nurse uses the decision-making model to assist adolescents to focus on their new sexual identity and behavior and provides a framework for organizing feel-

ings, values, and behavior by increasing awareness of how a contraceptive decision is made.

Through discussion, the adolescent actively participates to learn the decision-making process and practices applying this process to decisions regarding the use of contraception. The nurse integrates contraceptive information with a process of decision-making.

The nurse by utilizing the decision-making strategy, provides a safe environment for adolescents to explore the contraceptive decision-making process and become actively involved with formulating the course of action suited to her own values. The nurse, by utilizing the decision-making strategy, teaches the adolescent the steps inherent in any situation, and more specifically, the steps in the contraceptive decision-making process. By utilizing the decision-making model, the nurse not only conveys the necessary contraception information, but helps the adolescent use the information to prevent pregnancy.

Mercer's Framework

Integration of Cognitive/Developmental framework
and Decision-Making Strategy

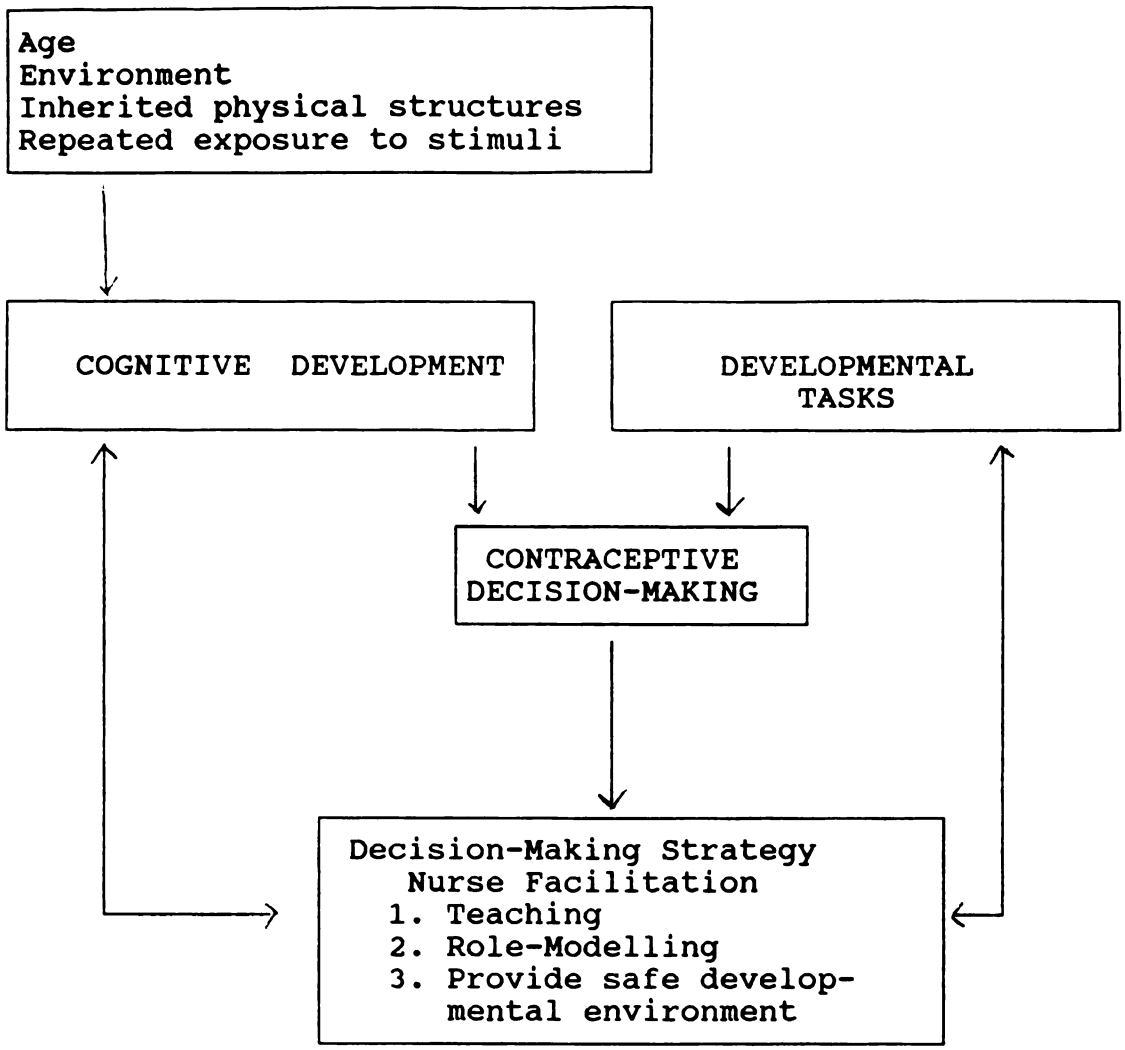

FIGURE I

In addition to Mercer's developmental framework, Orem's (1980) theory of self-care will be used as a means of relating nursing intervention with the conceptual framework. Orem (1980) defines self-care as "the practice of activities that individuals personally initiate and perform on their own behalf in maintaining life, health, and well-being." The adolescent's ability to implement self-care activities depends on her perspective of her health sitiation. Her perspective is influenced by the values she developed as a child, her present values, and the values by her peer group.

There are also other factors that affect the individual's ability to perform self-care. Some of these factors include age, cognitive development, developmental state, health, family functioning, and role. "Self care measures compatible with a person's goals and values are likely to be seen as beneficial. Their practice, however, is dependent on the person's judgement of whether he can perform the measures." (Orem, 1980, p.71).

According to Orem's model of nursing systems, the nurse carries out her activities within the framework of three systems. The first is the wholly compensatory nursing system in which the patient is unable to perform any self-care activities, such as when the patient is unconscious. The second is the partly compensatory

system where both the nurse and the patient perform care measures or other activites involving manipulative tasks or ambulation. The third system is the supportive-education system. In this system, the patient's requirment for assistance relates to decision making, behaviour control, and acquiring knowledge and skills.

Teaching an adolescent about self care activities regarding prevention of pregnancy would fall under the supportive education system. Utilizing the nursing process, the nurse would:

1. Identify the individual's need for nursing assistance.

2. Design and implement a plan of assistance.

3. Manage and adopt a system of nursing assistance.

In regards to the use of contraceptive decision-making, the adolescent's present abilities to engage in self care must be assessed by the nurse. If the adolescent has had a prior pregnancy, she has not been able to utilize birth control methods successfully in the past. The nurse must assess physical, social, psychological, cognitive and developmental levels of the adolescent as these are all interrelated to the ability to perform self-care activities.

The adolescent's present state of health affects her ability to initiate and perform activities related to self-care (i.e., birth control). An adolescent's

state of health includes her individual cognitive development and growth and development. The nurse must be aware that adolescents are often not future oriented, and the nurse must help the adolescent develop a realistic appraisal of the risk of pregnancy and the need to utilize effective contraceptive decision-making.

The health results sought for the adolescent must be mutually set by the nurse and the adolescent. Thenurse and the adolescent set goals (prevention of pregnancy) and discuss behavious that will help attain these goals (avoiding conception). Regarding the health results for sexually active teenagers, one goal would be the ability to express sexuality while using birth control to prevent pregnancy, by making use of contraceptive decision-making.

Adolescents require care by others because they are not finished with all aspects of growth and development and therefore are not capable of self-sufficiency. An adolescent may not be able to meet the requirements for universal or basic needs (i.e., food, water, air) and they are not able to meet requirements of health deviation care (those demands or requirements that arise owing to life cycle events). The adolescent may have difficulty dealing with her own sexual behaviour and may need assistance developing self care behaviours (i.e., contraceptive decision-making) relating to sexuality.

The nurse would assist the early adolescent in

self-care through the supportive-education system. The goal of nursing care under the supportive-education system would be to assist the early adolescent to overcome limitations to self-care. The nurse would mutually set goals with the adolescent in regards to contraceptive decision-making and also to facors that influence contraceptive decision-making such as cognitive development or comfort with body image. The nurse would tailor the intervention to assist the early adolescent to overcome limitations to self care such as the inability to think abstractly or being dissatisfied with the changing body. The nurse also assists the adolescent to learn the steps inherent in the decision-making process. Therefore, the adolescent is able to function at a highter level of health, and repeatedly make effective contraception decisions. (See Figure 2.)

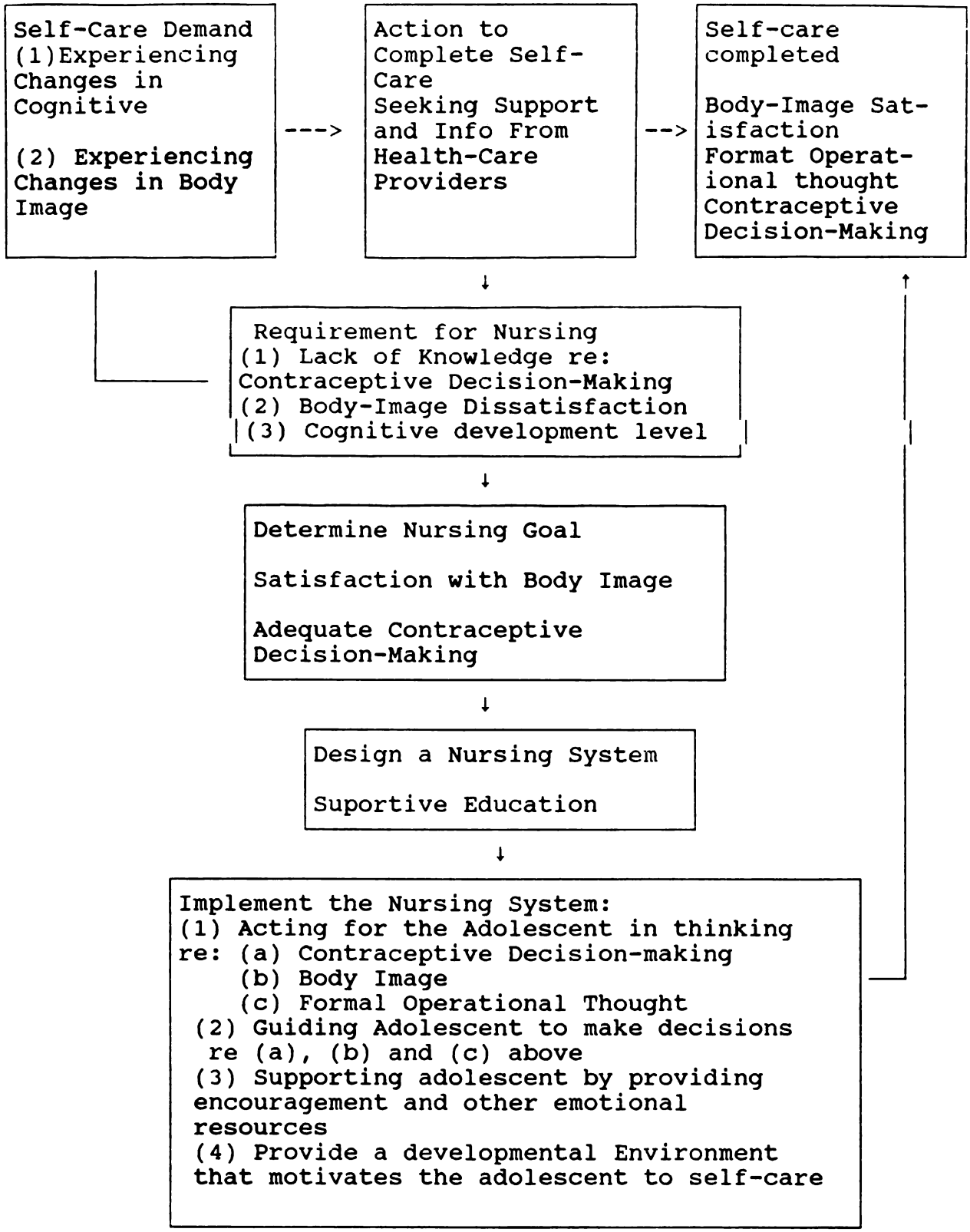

FIGURE II

Operational Model of Orem's Self-Care TheoryApplied to Adolescent Contraceptive Decision-Making

Summary

In summary, a conceptual framework from Mercer (1979), illustrating the relationship between cognitive development, completion of developmental tasks and contraceptive decision-making is presented. Nursing intervention is presented based on Mercer's (1979) decision-making strategy. A conceptual framework for Orem's self-care theory is also presented. Literature pertinent to these concepts will be reviewed in Chapter III.

CHAPTER III

LITERATURE REVIEW

INTRODUCTION

In this chapter relevant literature pertaining to the effect of cognitive development and completion of developmental tasks on the contraceptive decision-making of early adolescent females will be reviewed. This chapter will be divided into the following categories: prevalence of adolescent pregnancy, cognitive development in adolescence, developmental tasks in adolescence, and contraceptive decision-making. A summary of the literature and implications of the contributions of this current project will be included.

Prevalence of Adolescent Pregnancy

Pregnancy in adolescent females is one of the most widespread social problems in the United States today. (Mercer, 1979; Gruber, 1987; Alan Guttmacher Institute, 1981). In 1978, 1.1 million adolescents became pregnant, an increase of some one hundred thousand over the 1976 total, (Alan Guttmacher Institute, 1981). The proportion of adolescent females who had ever been premaritally pregnant increased from nine percent in 1971 to sixteen percent in 1979. Approximately thirty thousand of these pregnancies were to females under age fifteen, (Dryfoos, 1982). If current trends continue,

four out of ten females will experience an adolescent pregnancy, (Alan Guttmacher Institute, 1981). Adolescent pregnancy continues to be a multifaceted problem because of the many individual lives affected and the social circumstances related to the problem, (Zelnick & Kantner, 1979).

Prevention of adolescent pregnancy in the health care delivery system has been aimed at providing adolescents with information about pregnancy risks and methods of effective contraception, (Zelnick, 1982; Zabin et al, 1981; Sachs, 1985), and to make contraceptive methods available and accessible to adolescents, (Dryfoos, 1985; Herceg-Baron et al, 1986). The continuing high number of adolescent pregnancies reported annually (Nadelson, et al, 1980) raises questions about the effectiveness of the pregnancy prevention education and services offered.

The prevention of adolescent pregnancy is a multifactorial issue. Factors related to the prevention of pregnancy include a knowledge of the reproductive risk and contraceptive methods (Roget et al, 1980; Zelnick and Kanter, 1979); cognitive development (Cobliner, 1974; Schinke, 1981 Sachs, 1985); psychosocial correlates of contraceptive behavior (Kanter and Zelnik, 1973; Torres, 1980; Shah and Zelnik, 1981); and the ability to repeatedly make the pregnancy-prevention decision (Cvetkovich, et al, 1975); with the skills to

carry out that decision.

It is obvious that adolescent pregnancy is becoming a more prevalent phenomena in American society. Adolescent pregnancies cause a range of problems for the adolescent, her child, significant others in the adolescent's life and society as a whole. However, in order to understand the contraceptive decision in early adolescents, one must first understand the cognitive and psychosocial development of the adolescent.

Cognitive Development in Adolescence

During the process of evolving from a child to the establishment of an adult identity, the adolescent must successfully achieve the cognitive task of mastery of thought. The common theme in most cognitive theories is that the fundamental difference between the adult and the child is the capacity to imagine the future, to visualize past the present and act accordingly.

Piaget (1958) discusses the stages of cognitive development from the first sensio-motor stage of infancy to the final formal stage that characterizes the adult. Concrete thought is characterized by a present orientation and decisions based on past experiences, progressing to formal operations at age eleven. Formal operational thinking is characterized by the ability to think abstractly, image the possibilities inherent in a situation and use hypothetico-deductive reasoning.

Wadsworth (1979) stresses that movement from one stage of cognitive development to the next occurs when the mental structures in the child mature enough to receive stimulation from the environment in the form of experience and social interaction. Exposure to a situation stimulates the individual to try to incorporate the stimuli into existing or new cognitive structures. More exposure or experience promotes modification and reorganization of cognitive structures leading to more complex decision-making abilities.

Piaget (1958) discusses formal operational thinking as starting at age eleven, but some subsequent investigators found only a minority of adolescents function at the stage of formal operations (Dale, 1970; Tomlinson-Keasey, 1972). Some investigators found evidence that formal operations begin at ages eleven to fourteen. (Jackson 1965, Lovell, 1961.)

Wagner (1987) studied 120 people from an upper middle class suburban school system.Two Piagetian formal tasks, the combinatorial and equilibrium in the balance tests were administered to 20 males and 20 females each at age levels 10-12, 13-15, and 16-18 years. The combinatorial task required the subject to determine all of the possible combinations of five numerical elements. The equilibrium in the balance task required the subject to understand and utilize the principle of inverse proportionality between the weight

and the distance from the fulcrum in a simple balance. The scores were analyzed using an analysis of variance.

A significant age affect was found for the combinatorial task ($F(2,114)=21.74, p<.001$). Performance improved significantly between early and middle adolescence ($p<.01$), however, there were no differences between the two other groups. The age effect for the balance task was also significant ($F(2,114)=12.72, p<.001$). While the two younger groups did not differ from one another, there was a significant improvement in performance between middle and late adolescence.

Wagner's study is significant due to the findings that formal level ability on the combinatorial task tends to emerge between the ages of thirteen and fifteen. This would strengthen the argument that formal operational thought does not begin until middle adolescence. Leppart (1984) suggests that concrete operations and early formal levels appear to characterize most American adolescents.

Other early adolescent cognitive characteristics include what has been called "the imaginary audience" and "magical thinking" (Elkind, 1967; Yoos, 1987). The early adolescent is egocentric (White, 1987) and through the use of the imaginary audience, believes that all eyes are upon her. This may lead to behavior on what she believes others to accept or reject. "Magical thinking" is characterized by the belief that

factors that can harm others cannot harm her. This may interfere with her perception of her own risks of an event even though she is very knowledgeable about the risks of the event to others.

The attainment of formal operational thought may be viewed as a precondition for establishment of an adult identity. Erikson (1968) discusses that formal operations provide the adolescent with the cognitive tools to develop a sense of identity since "from along all possible and imaginable relations, he must make a series of ever-narrowing selections of personal, occupational, sexual and ideological commitments." (p.245) The social psychological cognitive changes that characterize adolescence interact and compound one another, (Howe, 1980). In addition to changes in cognitive development, the adolescent must complete certain developmental tasks for a healthy adult identity to emerge.

Developmental Tasks

In order to successfully complete the developmental stage of adolescence, the adolescent must accomplish certain tasks that facilitate formation of an adult self-identity. Tasks during adolescence vary somewhat from culture to culture and with each adolescent's life goals, (Mercer, 1979).

Erikson (1963) discusses stages that occur in the life cycle. In adolescence, the necessary psycho-social task is achievement of a sense of ego identity, a feeling of persistent sameness within one's self and a persistent feeling of sharing of some kind of essential character with others. Unsuccessful achievement of ego identity results in identity diffusion. This implies doubt in one's self resulting in inability to make commitments, inability to integrate various roles and lack of confidence in the ability to make meaningful decisions. Cvetkovich (1978) discusses three developmental tasks that must be accomplished during adolescence. These include development of a mature sexual identity, achieving autonomy from parents and establishing an adult identity. Levin (1985) considers the necessary psycho-social task of adolescence as separation/regeneration. During adolescence, the adolescent learns emotional separation, develops a sexual identity and achieves autonomy. Mercer (1979) discusses six tasks that culminate in the formation of an adult self-identity. The adult self-identity is not established until the adolescent has formulated a sexual identity, a personal value system, established vocation goals and achieved emotional and financial independence from parents.

In order to establish this adult identity, the adolescent must make progress in many areas. Three common areas discussed in the literature include acceptance and comfort with body image, sexual identity and independence.

Body image is the mental representative of the way the body appears to self, (Curtis, 1974.) It is a constantly fluctuating image of self as the individual interprets and synthesizes the perceptions, sensations and physical changes, (Mercer, 1979.) During adolescence physiological growth is accelerated compared to other times during the life span. Becoming accustomed to a new body size and its appearance and function takes much energy on the part of the adolescent. A study done by Lerner, Karabenick, and Stuart (1973) measured male and female adolescents' feelings of satisfaction with 24 parts of their body and related overall mean satisfaction to a measure of self concept. In both sex groups satisfaction was a moderate predictor of self image. The peer group plays an important part in the development of body image. The sporadic and individualized timing of the growth spurt presents problems for the early or late maturer within the peer group where conformity is stressed. Simmons (1973) discusses that early adolescents have heightened self-consciousness, less stability of the self-image, and lower self esteem due to both physical and social variables.

Lerner (1976) studied 124 males and 218 females (total N = 342). Subjects responded to three scales to rate: (1) attractiveness of 24 body parts using a five point Likert scale; (2) a 16 item scale of bipolar dimensions to assess self concept; (3) the same 24 body characteristics as presented in scale one but this scale rated physical effectiveness. Subjects were tested in their classrooms, the scales were presented in random order.

Although there is some intersex similarity in the body attitude ratings, significant sex differences emerge. The correlation between mean attractiveness and mean effectiveness rating for males ($r=.77$, $df=122$, $p<0.1$) is significantly higher ($z=4.0$, $p<0.001$, one tailed) than the corresponding correlation for females ($r=.51$, $df=216$, $p<0.01$). The internal consistency reliability for males' attractiveness and effectiveness rating was .88 and .90 respectively.

For females, the multiple correlation between the attractiveness ratings of the 24 body parts and mean self-concept was higher ($R=.52$) than was the corresponding result between the effectiveness rating and mean self concept.

Lerner suggests based on the above findings that adolescent females' self concept were strongly related to their physical attractiveness whereas the adolescent males self concept were related more to their physical

effectiveness. The findings are limited, however, by the fact that 85% of the samples were white and the sample was not random.

Blyth, Simmons and Zakin (1985) studied the impact of pubertal timing within different school environments on satisfaction with doby image for early adolescent females. 225 white females were divided into three categories of early, middle and late developmers based on age at menarche. A questionaire was developed with the students rating their satisfaction with three aspects of their bodies and their overall looks on a descriptive scale of 1-4. Blyth et. al. reported that the females' satisfaction with their figures is highly correlated with their weight (r=0.45). The students' overall evaluation of their looks was most highly correlated with their satisfaction with their figures (rs from 0.36 to 0.51) and then satisfaction with their weight (rs from 0.21 to 0.40). Early maturers overall were generally less satisfied with their body image than late performers. The authors also found that early maturers tended to be heavier than late maturers, and the early maturers' dissatisfaction with their body image may be due to the culteral ideal of thinness for women.

The evidence from the research is that the rapidly changing adolescent body is a concern for the adolescent and may produce dissatisfaction with the body image. The amount of dissatisfaction is less clear, as

well as when the dissatisfaction decreases. Studies on adolescents are needed to add data on normative changes in body image in adolescence. Longitudinal studies are needed to ascertain whether dissatisfaction with body image changes for individual adolescents over time.

Development of a mature sexual identity is another important area in the development of an adult identity, (Cvetkovich, 1978.) Determining the role of the sexual identity requires role taking behavior which requires an involvement of self in interaction with others. Simmons (1973) discusses that part of accepting one's self as a sexual being, involves reasonable comfort with body image, a feeling less likely to exist in early adolescence than at any other time of childhood.

Cvetkovich, Grote, Libnermann & Miller (1978) indicate some adolescents turn to sexual intercourse in the process of grappling with their sexual identity. Cvetkovich, et al studied 369 sixteen, seventeen and eighteen year old women residing in two metropolitan areas and one small urban community. Information was collected by an interview-questionnaire procedure. The relationship between virginity status and sex role attitude was examined by a three way chi-square technique. Virgins scored higher than non-virgins in sex role integration ($X2=31.84$, $af=9$, $p<.001$). The results suggest that the virgins, who have a less stereotyped perception of sex roles, are more mature and have

already passed through the stage of sex role stereotyping, having resolved their gender identity at an earlier age. The findings however should be interpreted with caution. The interview-questionnaire procedure was not presented, and the sample was not random. All these factors tend to limit the findings.

Seeking and establishing increased independence is another important area in the development of identity. Independence includes the achievement of both psychological and financial independence from parents, (Mercer, 1979.) Adolescents begin to establish independence by moving away from the parents towards the peers. Peer group involvement provides a group society that allows the adolescent to establish secure emotional ties with others beyond the immediate family, (Hill, 1980). As the adolescent establishes a sense of autonomy within the self-identity the preoccupation with issues of independence are replaced with further preparation for an adult identity such as vocational roles.

The authors reviewed tend to support task development in adolescence. Erikson's (1968) theory of psychosocial development, a succession of specific tasks which begin in infancy (trust vs. mistrust) and continue throughout "mature age" (integrity vs. despair) has been the subject of substantial attention during the past two decades (Jones and Streitmatter, 1987). Mercer (1979) has stated that an adolescent must complete or master specific adolescent tasks to achieve a stable

adult identity. Marcia (1966) contends that there are four specific stages of psychosocial maturity: diffusion (state of uncertainty and lack of commitment), foreclosure (commitment based upon no exploration of options), moratorium (active explorations of options in order to formulate a commitment), and identity achievement (commitment following active exploration of existing options.

The development of an adult self-identity is the culmination of all of the previous tasks. The self-identity is gained by mastery of specific developmental tasks and is manifested by the accumulation of confidence in one's ability to maintain inner sameness over time. Erikson (1968) discusses the emerging self-identity as gradually turning from the early childhood meaning of self and of others to an identity integrating basic biological drives, native development and social and vocational roles. The adult self-identity is tempered by a variety of social and cultural definitions which become increasingly coercive with age. The adult self-identity has a distinct personal value system which guides decision-making in all areas of life.

Contraceptive Decision Making

Sexual decision-making involves a chain of decisions for the early adolescent from the initial decision to engage in sexual intercourse to whether or not

to use a contraceptive, whether or not to continue pregnancy if pregnancy occurs, whether or not to relinquish the child for adoption if pregnancy occurs and whether or not to marry if pregnancy occurs. The focus of this scholarly project is on the early adolescent's decision whether or not to use a contraceptive.

Numerous studies have described psychosocial correlates of contraceptive attitudes, decisions and behavior. (Cvekovich, 1975, Zelnik and Kanter, 1979; Nadelson et al, 1980.) To the present, few studies have specifically addressed the relationship of cognitive development to contraceptive attitudes, decision-making and behavior.

Contraceptive decision-making may be difficult for the early adolescent who has not reached the stage of formal operations. The early adolescent may not be able to employ problem solving skills and consider alternative possibilities and the long range consequences of her selection of a decision, (Flick, 1986.)

Few studies have specifically addressed the relationship of cognitive development to contraceptive attitudes and behavior. Yet some researchers have indicated that adolescents experience difficulty with contraceptive decision-making have given cognitive reasons. Kisker (1985) utilized a research technique based on discussions with small groups known as focus groups. The focus groups consisting of 6 to 12 partici-

pants was used to provide insights into why adolescents do not practice contraception. The groups were held in ten different sites throughout the United States. Kisker found that many adolescents do not use contraceptives in the belief that the odds were against their becoming pregnant. Zabin and Clark (1981) interviewed 1,200 adolescents on their first visit to a family planning clinic. Seventeen percent of the adolescents stated "I didn't think I had sex often enough to get pregnant." Cvetkovich (1975) states adolescents lack critical skills of self analysis and speculated that many adolescents do not understand the relationship between intercourse and becoming pregnant.

Many adolescent females, using "magical thinking" evidently hold the notion they cannot become pregnant. Results from a national sample survey of 4,611 adolescent females age fifteen to nineteen years old by Kantner and Zelnik (1973) found a strong relationship between contraceptive use and self-perception. Nearly fifty-six percent of the females did not use contraceptives at the last intercourse because they felt they could not conceive. Interviews conducted by Cvetkovich and Sarkissian (1974) indicate that substantial numbers of adolescents conclude they are sterile after one or two sexual encounters that do not result in pregnancy. Many did not realize that there is a probabilistic relationship between intercourse and becoming pregnant.

Sachs (1985) indicates that the stage of cognitive

development is a predictor of contraceptive decision-making. Age and relevant sexual knowledge were also indicated as predictors of contraceptive decision-making. Sachs studied eighty-six urban black fourteen to nineteen year old unmarried females at three urban planning clinics in a midwestern city. A questionnaire was read in a private room with the investigator recording their responses. Each individual was administered four instruments: Coopersmith's (1959) self esteem inventory plus Levenson's (1974) scales for internality and chance and the Reichett-Werley Sex Knowledge Scale (1975) and a self developed tool for assessing cognitive ability based on the adolescent's ability to generate solutions to a means/end task. A hierarchal multiple regression analysis was used examine the relationship between contraceptive decision-making and cognitive development, relevant knowledge, previous exposure and age. The analyses using contraceptive decision-making and cognitive development had a zero orders correlation of 0.31, a multiple r of 0.31, p=0.05. The findings that adolescents fail to utilize factual contraceptive knowledge in resolving hypothetical contraceptive situations suggest that adolescents may need help to utilize the information they may possess. The findings however, should be interpreted with caution. The correlation was 0.31, the sample size was small and the population was not randomly

chosen. Also, since the sample included only voluntary black female participants from a family planning clinic from working class families, the results may not be generalized to other ethnic and income level groups. All these factors tend to limit the findings.

The Sachs study is important because it contains information not previously found in the literature. Assessment of cognitive development prior to rendering care could lead to more effective health interventions. After establishing stage of cognitive development, individuals could be offered health care congruent with their cognitive functioning. Concepts of contraceptive could vary in presentation from concrete to abstract with practice in decision-making offered as an adjunct to contraceptive instruction.

Schinke, Blythe and Gilchrist (1983), using a four group research design study, examined the affects of a cognitive-behavioral pregnancy prevention training to high school sophomores on contraceptive information steps for problem-solving and practice in communicating decisions about sexual behavior. Compared with un-trained, control-conditioned adolescents, the trained adolescents had more positive test scores on measures of sexual knowledge, interpersonal problem solving and in vivo performance. The sample consisted of thirty-six sixteen year old students (19 women, 17 men). Cognitive and behavioral training was carried out by a female and male graduate student in fourteen fifty

minute group sessions, consisting of contraceptive methods, practice utilizing contraceptive decision-making and components of verbal and non-verbal communication.

Adolescents given pregnancy prevention training answered correctly more questions on human reproduction, $t=(34)=3.40$, $p<.02$ and birth, $t(34)=2.63$ $p<.02$ than the control. Problem solving measures characterized the trained adolescents as more skilled than those in controlled conditions. Trained adolescents identified obstacles to solving problems $t(34)=2.28$ $p<0.05$ and generating solutions $t(34)=2.31$, $p<05$. Limitations of the study could include the small sample size. No mention on the instrument in relation to validity and reliability was attempted, nor were the students race or socioeconomic level mentioned.

Results of the Schinke, Blythe and Gilchrist study, however, are promising. Cognitive and behavioral training provide adolescents a chance to acquire skills to prevent unplanned pregnancy. Group context would allow nurses to reach greater numbers of adolescents, and would be more cost effective than individual sessions. The adolescent might be able to apply the decision-making skills to other areas of their lives, thereby fostering growth of self.

The early adolescent female then has cognitive developmental liabilities in regards to contraceptive

decision-making. She may be in the stage of concrete thought and base her decision to use or not use contraceptives on experience versus exploring all of the possible solutions. This inability to plan or foresee the consequence of unplanned pregnancy leads to greater risk taking and thus greater vulnerability to the consequences. The early adolescent may also use "magical thinking" and base her decisions on the belief that pregnancy is not a possibility.

Occurring concurrently with cognitive development the early adolescent is attempting to develop an adult self-identity by mastery of specific developmental task. Incompletion of these tasks also can affect the adolescent's contraceptive decision-making ability.

As mentioned previously in Chapter II, in the process of contraceptive decision-making, where avoiding a pregnancy is the goal, the adolescent must consider the alternatives and consequences of various courses of actions before making a commitment to obtain and utilize contraceptives. It is at this point in the decision-making process that non-mastery of developmental tasks can decrease the adolescent's motivation to obtain and utilize contraceptives.

The first two developmental tasks postulated by Mercer for formation of an adult identity are comfort with body image and development of a sexual identity.

An adolescent's acceptance of sexual activity as part of their self image is needed to achieve the at-

tainment of a sexual identity and is an important precursor to acceptance and making the decision to contracept (Herold & Goodwin, 1981; Kastner, 1984). Completed sex role development may also facilitate the decision to contracept (Cvetkovich et al, 1978) since internal conflicts on sexual activity, censure from parents and peers and embarrassment about the body and its functions are more likely to have been resolved. Goldsmith (1972) conducted an opinion survey of girls seventeen years old or younger at two Bay Area teen centers utilizing a sixty item questionnaire to elicit background characteristics, sexual knowledge and attitudes and contraceptive use. The questionnaire was administered to three groups - currently contracepting, maternity and those seeking an abortion. Based on the findings in this study, Goldsmith suggests that an attitude of accepting one's own sexuality is a more important correlate with contraceptive use than such other factors as exposure to sex education, knowledge of sex and contraception or religious background.

The findings of the Goldsmith study are important. Adolescents who have not yet achieved comfort with their own sexuality may avoid seeking contraceptives due to embarrassment, fear, etc. In working with adolescents who do not comfortably acknowledge their own sexuality, suggestions or encouragement for contraceptive use might produce the desired effect if the

intervention occurs as close as possible to the time of intercourse.

The adolescent also is developing a value system which influences decision-making by giving meaning to not only the problem, but also the possible solutions. Values impact both the decision to become sexual active as well as whether or not to contracept.

Juhasz and Sonnenshein-Schneider (1987) suggest that certain values influence adolescents decisions about intercourse, use of birth control and parenting. Five hundred thirteen to nineteen year olds were questioned. Significant gender differences in decision-making influences reflected the male-female double standard in sexual behavior. Males were high on self-enhancement through sexual intercourse which females intimacy considerations regarding sexual intercourse were more important. The study done by Jonasz and Sonnenshein-Schneider support earlier findings that the female is more likely to display permissiveness within the context of the relationship, (Hobart, 1974) as well as the contention that females have a stronger investment in family than males.

"Achievement of independence from parents" and "development" of an adult identity allow the nurse to consider the impact of peers, and parents on the adolescent's contraceptive decision-making.

The relationship between the adolescent and her parents particularly during the early stages of adoles-

cence might be an important determinant of acceptance of sexuality and contraceptive use. Kanter and Zelnik (1972), using an interview collection method, found in their national sample of 4,611 adolescents that the more independent the adolescent is of parental influence, the more likely she is to use contraceptives. Based on their findings, Kanter and Zelnik suggest that living in what is generally presumed to be the most stable and supportive family group does not appear to elicit a level of contraception necessary to prevent pregnancy. Contrary to expectation perhaps, Kanter and Zelnick found that in the sample adolescent females who were living alone, who were in households not headed by a father or who reported a low degree of confidence sharing with parents were more likely to use contraceptive than women with the opposite characteristics. Further study is necessary to understand the complex relationship between contraceptive use, living arrangements and relationship with parents.

Using multidimensional measures of hypothetical and actual contraceptive practice, Fox and Inazu (1980) found that fourteen and fifteen year old girls whose mothers had frequently discussed birth control with them were less likely to say they would have sex without contraception than girls whose mothers had not discussed birth control with their daughters. Although these findings are encouraging, their external validity

is hampered by a moderately low participation rate and the narrow range of ages studied.

Curtis (1974) in a study of comparing pregnant adolescents to non-pregnant adolescents observed that seventy percent of thirty pregnant adolescent subjects had no hobby compared to twenty non-pregnant teen-age controls, all of whom had hobbies. Sadly lacking among the pregnant groups was either sufficient opportunity for, or participation in, recreation which could provide an area for achievement, social activities with peers, healthy competition and expression of aggression. These findings are important, because of the implication for assessment. Adolescents who have few friends and no outside interests may be at greater risk for unplanned pregnancy.

Conclusions

As the adolescent moves towards developing an adult identity, growth must be achieved cognitively and psycho-socially for a healthy personality to emerge. The sexually active adolescent is being required to make a decision about contraceptive use at a time when she may be sexually undifferentiated and perhaps unprepared for such analytic thinking about herself.

In reviewing the pertinent literature, certain shortcomings were found. Most research has only been concerned with a one point in time analysis of the

adolescents' attitudes or behavior. Given the apparent episodic nature of teen-age sexual activity, and the rapidly changing self concept longitudinal study is called for.

A second shortcoming of the literature is the paucity of studies on males. While several studies on contraceptive use on husbands were found, not one single in depth analysis of male adolescent attitudes and behavior concerning contraception was found.

A third shortcoming may be noted. Most studies dealt with special populations and derived the sample from an already sexually active population. More research in early adolescent females which investigate non-clinical populations of both sexually active and the non-sexually active are needed.

Yet additional shortcomings may be noted. Very few studies took into consideration the cognitive and/or developmental levels of the early adolescent female, and how this influences her ability to make successful contraceptive decision making. No specific assessment tools were found that would identify females at risk for unplanned pregnancy due to cognitive developmental level an/or psychosocial level. Due to the above-mentioned factors, this study will focus on development of an assessment tool to assess cognitive development and completion of a specific developmental task and how this influences contraceptive decision-making.

The current study focuses on a group of normal early adolescent females and how cognitive development and satisfaction or dissatisfaction with body image influences contraceptive decision-making. Included in the next chapter are the methodology and procedures employed in the study.

CHAPTER IV

METHODOLOGY

Overview

In this chapter, an assessment tool to be used to identify cognitive and developmental tasks likely to influence contraceptive decision making is presented. Development of this instrument is discussed as well as a proposed methodology for its implementation.

Sample

The sample selected for this study will include unwed female adolescents between the ages 12-14, who live with at least one parent, have no chronic disease, documented psychiatric problems or documented mental retardation.

Younger adolescents, ages 12-14 are considered different from older adolescents both in psychological factors and physical maturity, and are the focus of this study. In addition, because of the different dynamics that exist between adolescents who live with a parent and those that live away from home, adolescents who do not live with at least one parent will be excluded.

Other factors that may affect the results of the study include the adolescent's marital status, state of her health and cognitive functioning. Because of these

factors, participants will include only those adolescents who are unwed, in good health, have no known chronic diseases such as diabetes, heart disease, kidney disease, or any documented mental retardation.

The sample will be chosen by convenience sampling. A sample as large as possible is suggested to assist in establishing reliability and validity of the instrument. Time and actual numbers of unwed adolescent females who are willing to participate in the study will have an influence on the sample size used. There is no one equation that can be used to determine how large a sample is needed, although it is best to use as large a sample as possible. In most instances, the larger the sample, the more representative of the population it is likely to be. It is suggested that a sample size of at least fifty unwed adolescent females would be adequate to be representative of the population of unwed adolescent females in this particular research project.

Study Site

The optimal site to conduct a study of adolescents would be in a public high school, due to a variety of factors. One such factor would be the ease of sampling due to the adolescent availablilty, as well as the ability to sample students from one particular age

group. Also, sampling a student population would add additional knowledge to the care of adolescents. Unfortunately public high school students are not often able to be used in research projects that ask questions on sexuality due to opposition from parents and community groups.

The study site for this project could be the Early Planning Screening Developmental Tests (EPSDT) clinic at the Kent County Public Health Department in Grand Rapids, Michigan. The Health Department clinic is free and is offered to clients up to eighteen years of age. The clinic is not specifically geared towards the adolescent, nor to the adolescent contraceptive needs. The clinic is run by public health nurses. Currently, an assessment tool is used by the nurses to elicit the adolescent's concerns, including comfort with bodily changes. This assessment tool is used as a method to encourage discussion between the adolescent ant the nurse. The assessment tool and the answers given by the adolescent on the actual questionnaire do not become part of the actual record. At the present time, data is not collected on the adolescent's cognitive level, completion or mastery of cognitive tasks, or decision making skills.

Operational Definitions

I. Sociodemographic questions are included to characterize the sample obtained. Sociodemographic characteristics include age, religion, present health stage, education level, ethnic background, present living arrangements. (See Appendix A, Part I, Questions 1-12.)

II. Cognitive development was defined as a series of stages in intellectual growth in which an individual's thought process and mental reasoning progresses from undifferentiated to increased organizations, resulting in increased awareness and judgment. This is based on Piaget's system of cognitive operations the model of which is based on mathematical group and lattice theories. These combinational systems are basic to the solutions of the problem requiring experimentation, i.e., holding one variable constant and varying others. Cognitive development was operationalized for this study as the composite score using a four digit permutation task, with responses evaluated for (1) numbers of permutations generated; (2) number of digits held constant; and (3) the systematic identification of permutations. A linear additive model to form the stage of cognitive development score will be used, with the midpoint used to divide the responses into concrete and formal operational thought. (See Appendix A, Part II).

The total number of permutations possible is 24, the total number of initial marks held constant is 32, and the total number of systematic identifications of permutations is 19. (Table I illustrates the scoring procedures for each experimental measure for a typical subject in this study.)

TABLE I

SAMPLE RECORD SHEET SCORED FOR VARIABLES NP, IMC, ET

NUMBERS
1234
2314
3412
4123
1324
3241
2413
4132
1423
4231
2314
3142
2134
3124
1243
2431
4312
3124
4132
4123
total permutations: 16
number of digits held constant: 2
systematic identification (GT): 13

The range of scores would be 0-68.

TABLE I

III. Body image was defined as the internal mental picture of the way the body appears to the self. Body image was operationalized for this study as the personal feelings about body parts and functions or body satisfaction. Body satisfaction refers to the degree of satisfaction or dissatisfaction with the various parts of the body. Three examples of body parts are: (1) Body build; (2) Distribution of hair over the body, and (3) Waist. (See Appendix A, Part III.) The Body Satisfaction Scale has a total of 50 items and scoring is by means of a five point Likert-type scale, ranging from strong negative feelings to strong positive feelings. A possibility of points ranging from 1 to 5 was assigned to the responses:

1	2	3	4	5
strong negative feelings	moderate negative feelings	no particular feelings	moderate positive feelings	strong positive feelings

The lower the score, the more negative the feeling; and therefore more dissatisfaction. Scores for the 50 items would be totaled, and a mean score for each individual would be derived. The range of scores would be from 50 to 250.

IV. Contraceptive Decision-Making.

Contraceptive decision-making was defined as the process of developing a plan to use birth control towards the goal of preventing conception. Contraceptive decision-making was operationalized for this study

as the individual's ability to orient herself to, and conceptualize means of moving towards the goal of contraception as evidenced by (a) utilizing alternative thinking (generating as many options as possible to reach goal, and (b) means end thinking (creates mean to reach a prescribed ending.)

Contraceptive decision making abilities are measured with the two tasks of alternative thinking and mean-end thinking. (See Appendix A, Part IV.) First, individuals are asked to identify all possible alternatives to resolve a contraceptive situation. Then individuals are given a contraceptive situation with a prescribed ending, and are asked to develop the means to reach the prescribed ends or means/end task (Spivak, et al., 1976). Table II illustrates the tasks, situations and scoring used. Responses are evaluated for the relevancy to the contraceptive situation. For the alternative thinking task, only responses which would be effective within the contraceptives situational context are scored. Responses are not scored if (1) the situation is reworded but provides no alternatives, (2) provided magical solutions, (3) restated a previous option, (4) provided a value judgment on the on the situation. Means/ends responses are scored if they enable the people in the situation to reach the stated goal of avoiding pregnancy. Non-effective means within the situation to reach the stated goal were not scored. No score was awarded for (1) situation is rewarded but

provides no means toward the goal, (2) provided magical solutions, (3) provided a value judgment on the situation, or (4) if the response failed to provide sufficient detail about how the goal of avoiding pregnancy was reached.

The responses to the two tasks are evaluated for relevant responses, and then the sum of the two tasks are treated as one measure of decision-making abilities.

Instrument Development

Several instruments aimed at assessing various aspects of adolescent development are available in the literature. No instrument can be identified that assesses stage of cognitive development, completion or mastery of any developmental tasks and contraceptive decision-making in early adolescent females. Thus the development of this instrument is based on synthesis of questions previously developed in other instruments.

Leskow and Smock (1970) developed a four digit permutation task, to investigate developmental changes in problem-saving strategies as reflected in children solutions to permutation problems, during the transition phase from concrete to formal operational thought. The definition of cognitive development used in the development of the instrument is a synthesis of concepts with a strong emphasis on Inhelder's and Piaget's

model of formal operational thought. Cognitive development would be relevant to contraceptive decision-making due to the theoretical need for formal operational thought to be able to generate all possible solutions before reaching a decision.

Responses are evaluated for (1) number of permutations generated, (2) number of digits held constant, and (3) the systematic identification of permutations.

Leskow and Smock (1970) studied sixteen boys and sixteen girls at each of three age levels (12, 15 and 18). The test subjects were homogeneous with respect to socioeconomic and ability level. The number of grouped transformations doubled between ages 12 and 15, with a similar increase between ages 15 and 18. The effect of age was significant at the .001 level with the Newman-Kuels tests yielding significant differences ($p<.01$) for all the age comparisons. Analysis of variance of new product scores yielded a significant effect of age ($p<.005$). A third-order interaction that included age (age X Sex X level) however was significant at the .05 level. Analysis of variance for the initial mark held constant yielding a highly significant mean effect of age ($p<.001$).

The contraceptive decision-making questionnaire is based on Platt and Spivak's Means-End problem solving. The means-end problems solving procedure is a measure of the ability to conceptualize in interpersonal problem situations, appropriate and effective means to

reach a specified goal in order to satisfy an aroused need.

Platt and Spivak reported reliability coefficients of 0.80 for the decision-making task, using the Kuder-Richardson 20 technique and 0.82 using odd-even split half technique. Context validity was claimed based on three samples (male and female psychiatric patients, youthful offenders), each resulting in a single factor. Predictive validity was claimed based on a Pearson correlation coefficient of +.30 between number of means and length of time on parole before rearrest ($p<.05$). In a test of personality adjustments using young adult females, discriminant validity ranged from $r=0.19$ to 0.25, demonstrating little relationship between means/ends decision-making and personality adjustment. The reliability of 0.80 reported by Platt and Spivack was not replicated in the Sachs study, $r=0.56$. Sachs (1985), and an expert working with family planning developed a list of relevant options for contraceptive items. In the Sachs study (1985) two raters using the MEPS independently scored responses with interrater agreement of 91% on alternative thinking responses and 89% on means/end responses.

The satisfaction with body image is based on a study done by Clifford (1971). He studied 340 public school students aged 11-19, replicating the body cathexis study of Secord and Jourard (1953). Clifford

assumed a changing body produces dissatisfaction which leads to anxiety. In his study, Clifford found the mean boys score was 3.71, and the girls was 3.39, which was significant at the $p<.001$. The reliability of the instrument was reported at .92, which represented a high internal consistency among the items of body parts and functions used for the scale. Satisfaction with body image is related to contraceptive decision-making. In the conceptual development, lack of satisfaction, or dissatisfaction of body image would act as a barrier when an adolescent considers possible solutions to preventing conception. An adolescent who is dissatisfied with her body image may be less likely to subject herself to seeking medical care, of undergoing a medical examination.

Instrument

The following questionnaire tool evolved from the literature review and is adapted from previously developed tools. Part A of the instrument describes demographic data such as age, educational level, ethnic background and employment status. (See Appendix A. Part I.)

Part II is a four digit permutation task developed by Leskow and Smock (1970). The purpose of this section is to identify adolescents at risk for unplanned pregnancy, due to cognitive stage (concrete vs. formal

operations). The presentation of educational interventions can also be based on the above findings.

Part III of the instrument is based on the Body Satisfaction Scale (Secord and Jourand (1953), Clifford (1971). This tool was discussed earlier in this chapter. The purpose of this section is to identify how satisfied the adolescent is with her body image.

In Part IV of the instrument, contraceptive decision making is measured. This part of the tool was adopted from the Means End Problem Solving Procedure by Spivack and Platts (1975). The completed Questionnaire can be found in Appendix A.

Proposed Methodology

Pretesting the instrument.

The first step in using the questionnaire tool would be to pretest it for clarity and readability. This pretesting can help identify areas of unclear sentences and poor understandability before the questionnaire is used for the formal, full scale study. The pretest may also help clarify areas where additional questions are needed, or where other questions may be dropped. Participants in the pretest should be similar in characteristics to participants in the full scale study. After the pretest is administered, discussion of

any problems or reactions to the instrument should be discussed with the participants.Revision of the instrument, if necessary, would follow the pretest.

Reliability

"The reliability of a measuring instrument is a major criterion for assessing its quality and adequacy." (Polit and Hunger, 1986, p. 385.) Essentially, reliability can be defined as the degree of consistency in which an instrument measures the attribute it is supposed to be measuring. In repeated measurements, the less variation an instrument produces, the higher the instrument's reliability. Therefore, reliability is a reflection of the stability, consistency of dependability of an instrument. Internal consistency or the degree of interrelatedness among items will be determined by coefficient alpha.

Validity

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. One type of validity, content validity, is "concerned with the sampling adequacy of the content area being measured" (Polik, et al, p. 395). Content validity refers to how representative are the questions on the instrument of all questions that might be asked on the topic?

There are no objective measures to assure the correct content coverage of an instrument. Instead, the content validity of an instrument is necessarily based on judgment. To assure content validity, an instrument should be developed after a careful review of the literature. The instrument should then be analyzed by experts in the content areas to see if the questions represent adequately all questions that might be asked on the topic.

Human Subjects' Protection

The Michigan State University Committee on Research Including Human subjects will be presented a complete explanation of this study before any active research is done. Guidelines and procedures of this committee will be strictly followed.

Participants in this study will be assured of confidentiality. Participants will also be advised that they have the right to refuse without having their health care affected in any way. The participants will also be assured that they have the right to withdraw from the study at any time. Anonymity will be maintained for all participants of the study. Participants will be given the name and address of the researcher in the event that they develop questions or concerns at a later date.

Data Collection Procedure

Adolescents who met the criteria for inclusion in the study will be approached by a clinic nurse during a clinic visit and asked to participate in this study. The purpose of the study will be explained to the adolescent and anonymity and confidentiality will be guaranteed. The adolescent will be given an estimate of the time it will take to fill out the questionnaire completely (approximately 30 minutes). After the above has been explained to the adolescent, and the adolescent expresses a willingness to participate in the study, a written consent form will be obtained from the adolescent. The adolescent will then be given a sealed copy of the questionnaire. After completing the questionnaire, the participant will return it to the clinic nurse in a second sealed envelope. At the end of the study, a debriefing letter will be given to each participant.

Data Analysis

The initial step in data analysis for this project would be to analyze the sociodemographic data using descriptive statistics. Means and frequencies of distribution could be used to identify significant correlations between sociodemographic data and contraceptive decision-making.

Cognitive developmental (concrete or formal operational) satisfaction with body image to contraceptive decision making. This is classified as correlation. Do adolescents with formal operational thought generate more relevant options to prevent conception? Perason Product moment correlation may be used to identify these significant correlations. A correlated coefficient may range from -1.0 for a perfect negative correlation through 0 for no relationship, to +1.0 for a perfect positive relationship. The higher the absolute value, the stronger the relationship.

The Pearson Product Moment Correlation may be used to identify significant correlations between demographic variables and contraceptive decision-making. The Pearson Product Moment Correlation may be used to identify significant correlations between cognitive development and contraceptive decision-making. The Pearson Product Moment could also be used to identify significant correlation between type of satisfaction (i.e., satisfied or dissatisfied) with body image and contraceptive decision-making.

A discriminant analysis of the study variables may then be used to interpret the data further as it would provide a more sensitive interpretation of the data. To distinguish between two or more groups of people ("contraceptive decision-makers vs. non-contraceptive decision-makers). Discrimination variables that measure characteristics on which these groups are expected

to differ are chosen. In this study, participants would be divided into contraceptive decision-makers and non-contraceptive decision-makers. The discriminating variables on which these groups are expected to differ are cognitive development and type of satisfaction with body image. This analysis would then enable the researcher to develop a profile of an adolescent "at risk" for pregnancy.

Summary

In this chapter the development of an instrument to identify cognitive and developmental factors that may influence contraceptive decision-making is presented. A proposed methodology for implementation is presented. A summary of the project and implications for nursing practice, research and education follow in Chapter V.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

In Chapter V a brief summary of the project is presented. Recommendations for further study as well as implications for nursing practice, education and research are also discussed.

Summary

Adolescent pregnancy is a subject that has been studied over a number of years. Adolescent pregnancy remains a national health issue of major proportions. While the actual numbers of pregnant adolescents are rising, the rate of adolescent pregnancies is decreasing except one significant age group -- that of ten to fourteen year olds (Leppart, 1984).

Delivery of an infant during adolescence has both immediate as well as long term effects on all of the individuals involved. These effects include physical, social, psychological, educational and economic aspects of life. The physical effects for the mother include poor weight gain and delivery complications. The physical effects for the infant include low birth weight,

prematurity, and a high infant death rate. Socially, the adolescent who delivers a child during the period of adolescence often has her schooling interrupted, she often develops inadequate job skills, and her risk of being poor is increased.

Psychologically, the adolescent who delivers a child has the task of learning to care for the infant after birth and coping with the transition to the role of parent. These tasks are superimposed over other normal tasks of adolescence, and may impede the adolescent's progress towards achieving an adult self identity.

Contraceptive education classes and increasing the availability of contraceptives have emerged as one method of attempting to decrease the adolescent pregnancy rate. However, traditional adult learning methods do not take into consideration the cognitive and psychosocial development of the adolescent, and how this affects the contraceptive decision-making process in the adolescent. The goal of this study was to develop an assessment tool that would identify adolescent females who are at risk to an unplanned pregnancy due to the stage of cognitive development and completion of the developmental task of comfort with body image.

Mercer (1979) identified certain aspects of contraceptive decision-making that may lead to greater contraceptive utilization by adolescents. Because

sexual behavior is determined by one's norms and culture, adolescents make contraceptive decisions based upon past customs, cultural values, cognitive development level and personality factors. Knowledge is a tool the adolescent will use only when she realizes the tool is able to satisfy needs and provide rewards. In gaining a greater understanding of why adolescent females do not utilize contraceptives, strategies based on the decision making process can be developed that would improve compliance and therefore enable the nurse clinician to improve the quality of care to this client population.

The delivery of health care is rapidly changing in the United States. The cost of health care is rising and there is a major effort on many fronts to contain or even decrease health care costs. Contraceptive education, low cost contraceptives, and school based clinics are important components of preventing adolescent pregnancy. In order for these components to be effective however, adolescents must be able to use the information in the cognitive decision making process. Factors that affect contraceptive decision making need to be examined, thus enabling the Clinical Nurse Specialist to identify strategies that can increase contraceptive compliance. Further study on this topic will contribute to an increase in the knowledge base and improved quality of care. A study in this area can impact society in general by decreasing adolescent

pregnancy and thereby decreasing health care costs.

A tool was developed based on literature and previously developed tools to assess cognitive development level, satisfaction with body image and contraceptive decision-making. The instrument obtained demographic data, cognitive development level, satisfaction with body image, and contraceptive means end problem solving. Data collection is now needed to fully determine the usefulness of this tool. However, this project can increase the nurse's understanding of a potential need of the early adolescent that may enhance or interfere with contraceptive decision making, thereby increasing the client's self care potential or ability.

Limitations of the study and limitations of the tool as well as implications for nursing practice, nursing education and future nursing research will be presented in the following sections.

Limitations of the Study

Some limitations of the study were discussed in Chapter I. Several factors may limit the generalizability of the findings in this study such as characteristics of the study sample, the questionaire itself, and the research methodology. A summary of the limitations will be presented in this section.

Sample

The following limitations may be noted regarding the sample:

(1) The sample was described as a volunteer, convenience group from an urban area. A randomly selected sample, from a broken socioecononim and sociocultural background may differ in contraceptive decision-making.

(2) The study sample was described as early adolescent females age 12-14. A consideration for future research may be to solicit data from middle and late adolescents, and males as well.

(3) The sample was described as volunteer. Adolescents who chose not to participate may have characteristics different from those that do participate. A consideration for future research may be to solicit feedback from non-participants in order to determint if the sample is truly representative of early adolescent females.

Assessment Tool

Anticipated limitations of the assessment tool may include the following:

(1) Since the assessment tool may be completed by the early adolescent female during a scheduled office or clinic visit, other variables may affect the adolescent's responses to the questionnaire.

(2) The assessment tool wording may be unclear or

misleading to adolescents.

(3) The length of the tool may affect how the adolescent responds.

(4) Factors other than cognitive development and completion of the developmental task of comfort with body image are not measured by the assessment tool and may influence contraceptive decision making.

(5) The concept of contraceptive decision making is operationalized in this study as an indication of future behavior. Future research may include a longitudinal study to assess actual behavior.

Methodology

Anticipated limitations of the methodology may include the following:

(1) Generalizability may be limited if the assessment tool is not administered uniformly to all participants. Conformity to the procedure must be maintained.

(2) A specific time limit was not described in this study. Time limits need to be established with the same standard used for all participants.

In summary, limitations of the study sample were discussed in terms of randomization, studying only early adolescent females, and collecting data on non-participants. Limitations of the instrument were discussed in terms of length, wording and setting. The methodology would be improved by strict conformity to procedures and setting time limits.

Implications for Nursing Practice

The implications for nursing practice by a FCNS in primary care will be discussed within the context of the decision-making process adapted from Mercer (1979). According to Mercer, the nurse's goal is to bring about more effective thinking and action on the part of the adolescent. Decision making is defined as "a process of developing a plan for a proposed course of action toward some end or goal."

When working with early adolescent females in primary care, the goal of the Clinical Nurse Specialist is to increase the adolescent's ability to engage in self-care behaviors to maintain life, health, and well-being. By engaging in effective thinking and action, the early adolescent female is able to achieve her maximum health potential and is able to make satisfactory and positive decisions regarding sexuality and contraceptives. One way this goal may be accomplished is by successfully promoting use of the decision-making process by early adolescent females. By learning to use the decision-making process, the early adolescent female is able to learn behaviors that contribute to success utilization of contraceptives, as well , clarifying issues related to the adolescent's sexuality.

The nursing challenge is to identify early adolescent females who are at risk for unplanned pregnancy

due to cognitive development level and incompletion of specific developmental tasks, as well as introducing the decision-making process to this specific population. The FCNS in primary care is in a key position to identify cognitive development level and incompletion of developmental tasks that may have a bearing on the adolescent's contraceptive decision making abilities and assist the adolescent to increase her use of the decision-making process so that successful contraception is accomplished.

The FCNS in primary care provides accessible, continuous, coordinated care to this adolescent. The Family Clinical nurse Specialist (FCNS) may already have a data base useful in identifying cognitive or developmental factors that may influence contraceptive decision-making because of previous contact with the adolescent as well as with other family members. Due to the fact that the FCNS develops a continuous relationship over time, the FCNS has the potential to impact the adolescent's understanding and use of the decision-making process. Previously assessed information may be updated and applied to the development of strategies that enhance the decision making process, resulting in improved compliance with contraceptives. In addition the nurse in primary care is in an ideal position to assess contraceptive decision making with all adolescents, not just early adolescent females.

By utilizing the instrument developed for this scholarly project, the FSNS could elicit information that the adolescent may find too threatening to disclose face to face. The instrument may also be a valuable source of a comprehensive date base on the adolescent for the FCNS. By using computer software such as dBase III, a relational database could be set up to study other possible correlational relationships at a later date. In a shortened form, the developmental instrument could be incorporated as part of the intake history for all adolescents entering the primary care facility.

In utilizing the nursing process, the nurse must assess sociodemographic variables as well as cognitive development and completion of developmental tasks. The stage of cognitive development and the completion of development tasks may enable the nurse to identify "at risk" early adolescent females. The assessment tool developed in this project could be used to identify early adolescent females at risk for unplanned pregnancy. The nurse can help the adolescent female to identify inadequate decision making skills that may interfere with successful contraception. The tool developed in this project is long and it would be unrealistic to us it as a quick assessment guide. However, one important area of the tool that may be assessed quickly is cognitive development. The four digit permutation task provides the nurse with a reasonably accurate estimate

of the adolescents' abilities for concrete or abstract thought

In addition to cognitive level, one area rarely assessed is comfort with body image. The FCNS in an expanded role must acknowledge this area and include it in a complete assessment of the adolescent female.How the adolescent perceives her body has a strong impact on her future use of contraceptives.By utilizing information regarding how the adolescent feels about her body, the nurse individualizes the plan of care based on the objective findings as well as the adolescents' own perceptions. At the initial visit, the FCNS may begin assessment of potential body image disturbances by asking the client to describe herself physically. In addition, observations of dress, clothing and hygiene can also add information on the clients body image.

The questionnaire developed for this study could be used in a primary health setting to collect data on the body satisfaction of the adolescents, with results added to the database. Body parts rated below the mean can be determined and then further assessed by the Clinical Nurse Specialist. Dissatisfaction with certain body parts may be associated more with lower contraceptive decision making than others. As more empirical data is collected, it may be possible to identify a range of associations not currently known. This information could be disseminated quickly utilizing computer

networks between universities.

The FCNS is in an ideal position to develop a rapport with the adolescent client due to the ongoing nature of the primary care relationship. Continuity is important with adolescents and allows for continued assessment in areas that may impact contraceptive use. In an area such as body image, the adolescents perception may change. It is important that the Clinical Nurse Specialist be aware that the nurse's perception and the adolescent's perception may differ greatly, and it is extremely important that the nurse utilizes a tool that elicits the adolescents perceptions so that nursing intervention is based on the adolescents perceptions.

In addition to using tools to assess the adolescents cognitive development, and satisfaction with body image, the FCNS must also assess the adolescents ability to make decisions. While the goal of the nurse and the adolescent may be that of preventing an unwanted pregnancy, this goal may be achieved by assisting the adolescent with clarification of values. The Clinical Nurse Specialist should not impose personal values but needs to help the adolescent to clarify attitudes and values that influence the decision-making process.

In the planning and implementation stage the nurse and the adolescent together design a plan of care that will facilitate the obtainment of mutually agreed upon goals. This project has many implications for interven-

tions directed at prevention of unwanted pregnancy in adolescent females. Strategies to assist adolescents in contraceptive decision-making may be implemented immediately after completing the initial assessment and goal setting session.

Utilizing Mercer's framework, the adolescent may be taught the steps in the decision-making process,leading to better decision-making skills. The Clinical Nurse Specialist in a primary care setting can structure the environment, and help the adolescent see the inherent steps in each decision,regardless of where that decision takes place. By learning the steps involved in a decision, the adolescent can begin to practice these skills in everyday decisions, not just those that involve contraceptives.The adolescent is assisted initially in identifying and selecting options that with help reach the desired goal. The ability to select an effective option in the decision-making process helps to build self-esteem in the adolescent and also makes the adolescent a more active participant in their own health care.

Another strategy that may be implemented to assist adolescents in improving their decision-making skills is for the FCNS to begin by practicing decisions that are non-threatening to the adolescent. After the adolescent is finished analyzing simple decisions,more complex ones such as those involving contraceptives may

be introduced.

In practicing these skills, it is important for the Clinical Nurse Specialist to group adolescents with similar cognitive development into groups. That is, concrete thinkers should be grouped with other concrete thinkers and be given concrete examples to analyze. With on going assessment, this group could then be provided with more abstract situations as the cognitive level increases with increased exposure to stimuli and the decision-making strategy. Adolescents who are already utilizing formal operational thought would be placed in groups comprised of other formal operational thinkers and would analyze complex abstract situations prior to moving on to situations related to contraceptives.

Yet another strategy that may be employed by the FCNS would be to assist the adolescent in completing developmental tasks that impact the decision-making process. One appropriate strategy is using group activities that enhance self esteem and promotes increased satisfaction with body image.By providing a safe environment in which the adolescent may voice concerns and perceptions about the rapid changes that she is experiencing, the nurse can help the adolescent clarify feelings and beliefs in regard to the adolescents body image. In addition, the adolescent is able to share this experience with other females who are also experiencing the same rapid growth. By participating in the

group activity and achieving satisfaction with body image, the adolescent may be more likely to seek care regarding contraceptives. It is evident that the Family Health Clinical Nurse Specialist is in a unique position to assist the adolescent in the goal of self-care by assisting the adolescent in not only decision-making skills, but also by assisting the adolescent in the developmental process itself to improve the skills the adolescent brings to the decision-making process.

The FCNS uses the role of the educator when implementing strategies aimed at prevention of unplanned pregnancy. Three methods used to provide information to the adolescent are individual,group and audio-visual. Individual teaching can be done by the FCNS and this also provides the FCNS with the opportunity for continued assessment. During the group sessions, information on the decision-making process can be supplied by two nurses or a nurse and a health educator. The nurse can also serve as a role model for the adolescent females during the group sessions, demonstrating how the decision-making process is used in different situations.

The FCNS in the role of the educator can also use various audio-visual techniques to enhance the learning process. Films or slide/tape presentations,followed by an question and answer period, are used in many settings. Computers could also be utilized to help present information and provide immediate feedback for adoles-

cent females on contraceptive use, decision-making and completion of developmental tasks.

The FCNS should also be an advocate for expanding education regarding sexuality to both adolescents and members of the community. In order for anyone to make an informed decision, knowledge is necessary to evaluate all of the possible options available to solve a problem. Thus the FCNS has a key role in facilitating adolescents to obtain contraceptive knowledge as well as how to use that knowledge.

Adolescents are usually seen in the primary care practitioner's office because of an acute illness. A consideration for primary care nursing practice is how to provide comprehensive health services to the adolescent population. Primary Care needs to be community oriented and coordinated with the other health services system of the community. The decision as to where the services are accessible to the adolescent population must take into account not only what is best for the adolescent, but must also take into account what is feasible and realistic for the community.

The FCNS could also be instrumental in development of a task force that brings together both professional and community members to identify and address issues regarding adolescent sexuality. By gathering wide support in the community, the FCNS can make decision-making for adolescents something that is not perceived as a threat by parents or special interest groups. By

addressing concerns before formal intervention begins, the FCNS can gain acceptance for the decision-making intervention. Education of the adolescent could then take place in junior highs or in the upper elementary grades, in community groups, or even at the local church.

The FCNS can also offer expertise to community and school groups when curriculum for sex education is being developed. Sex education could start in the elementary schools with simple concepts that would promote self esteem regarding body image. In the upper grades, specific information regarding sexuality could be introduced. While some parents argue that sex education promotes sexual activity, to date there has been no evidence to substantiate that claim. Currently, only 10 percent of American secondary schools offer any form of sex education. While knowledge is not sufficient to prevent pregnancy, knowledge is needed for contraceptive decision-making.

The FCNS can use the assessment tool to gather initial data on the adolescent, and use the developed framework as a guide to clinical practice. However, with repeated exposure to adolescent clients, with theory based education, the Clinical Nurse Specialist can transcend the constraints of formal procedures at the expert level of nursing practice. At the expert level, the Clinical Nurse Specialist can make rapid

decisions based upon concrete examples, having developed a set of perceptual distinctions that are not possible to learn or to grasp conceptually. When dealing with the adolescent population, the Clinical Nurse Specialist can become an expert not only on an assessment level that transcends the information gathered with instruments, but also on the intervention level. By documenting cases where a profound difference was made by intervention, the Clinical Nurse Specialist by narrative example can share examples of expert level functioning with other health care providers. These examples could include cases where the adolescent successfully contracepted due to the Clinical Nurse Specialist's intervention, and also cases where the adolescent did not successfully contracept, but her life was still profoundly changed due to the intervention. An example of this might be a pregnant adolescent who manages to stay in school.

By documenting narrative descriptions of expertise in primary care practice, the Clinical Nurse specialist can share this information with other nurses and add to the database on how a nurse can progress from novice to an expert level.

Implications for Nursing Education

This project can increase understanding of the role of cognitive development, and how this influences contraceptive decision-making in adolescents, and therefore be valuable in recommendations for nursing education.

Nursing education programs should view the family as the unit from which the adolescents comes . Viewing the adolescent as an distinctive individual coming from a family unit that has its own set of rules and traditions is important at any point in the nursing process. For this reason, nursing education must include curriculum on family development and family interaction,as well as development of the individual over the life cycle. In addition, it is important that nursing education programs address the controversial nature of adolescent sexuality and the physical, psychological, social and economic sequellae of adolescent pregnancy. Since many people have strong feelings about these issues, it is important for nursing education programs to address these issues on the undergraduate level. Nursing education programs need to emphasis how these feelings can impact the care of the adolescent, and the importance of not passing judgment, nor imposing one's value system on another.

Nursing education programs should also include the components of the decision-making process so that

nurses can assist clients of all ages to make effective decisions. Nurses must also be educated on the many nursing interventions that can be used to increase the individuals' ability to make effective decisions, in cluding assessing the client for cognitive level, and then tailoring the presentation of the information to meet the clients' cognitive level.

Nursing education programs must include specific information on cognitive and psychosocial development of the adolescent and how this influences adolescent decision-making. Nurses must also be educated to the many nursing interventions that can impact decision-making and increase the use of contraceptions in adolescent females. Further studies can demonstrate the role of decision-making strategies in reducing the incidence of pregnancy in the adolescent population. Nursing curriculum should use the findings from such studies in the continued development of the role of the nurse as an educator.

Nursing curriculum should also include the effects of other variables that can impact the contraception decision-making process. It is important to know information about the family and the family value system . It is useful to have information on the adolescents' ethnic background, age , and educational background when developing nursing management plans.

In graduate education, the FCNS also needs clini-

cal experience with the adolescent. The FCNS can assist the adolescent to make effective contraceptive decisions by teaching adolescents how decisions are made. In addition, the FCNS can assist maturational development by assisting the adolescent to complete developmental tasks by promoting acceptance and comfort with body image and promoting independence from parents.

In graduate education, the FCNS also needs to learn models that provide concepts that differentiate between what can be taught by anther and what must be learned experientially to reach to expert level in nursing practice with adolescents.

Implications for Future Nursing Research

The topic of adolescent pregnancy has been studied and researched for many years and will probably be a topic of interest for many years to come. Decision-making is also a topic that has been extensively studied, as well as the topic of cognitive development. However, the effect of cognitive development,completion of developmental tasks and how this influences the contraceptive decision-making process has not been examined in previous research. Thus, it is recommended that the instrument developed in this project be administered at some point in time to address the following research questions:

1. What is the effect of cognitive development on

contraceptive decision-making and future contraceptive behavior?

2. What is the effect of satisfaction with body image on contraceptive decision-making and future contraceptive decision-making?

3.Is there a difference between adolescents who receive contraceptive decision-making training and those who do not in terms of future contraceptive behavior?

4. Are there specific demographic variables that influence the use of contraceptives in early adolescent females? What are the findings of a prospective study to determine the differences between the cognitive, developmental and contraceptive decision-making abilities of those who successfully contracept, do not contracept but continue to maintain school, and those who do not contracept and drop out of school.

In addition, by using the instrument developed for this study in an actual research project, the instrument could be improved and shortened for use in actual clinical practice.

Recommendations for future research include use of the instrument on various populations of adolescents,including older adolescents to examine the differences between contraceptive decision-making in these groups. Adolescents from various social and ethnic groups could also be studied to examine the differences between these groups

In addition, a longitudinal study examining how contraceptive decision-making might change over time would also be of interest and add to the knowledge base on which nursing interventions are based. One example would be to assess if contraceptive decision-making correlates to actual behavior over time.

Another useful study would be to examine the satisfaction of the adolescents towards the interventions to increase contraceptive decision-making. Questions addressing why the adolescent took part in the educational session ,appropriateness of the material, and whether or not the adolescent actually was able to utilize the information and make better decisions could be included.

Another useful study would be to operationalize and research the effect of each of Mercer's developmental tasks on the contraceptive decision-making process. Assessment and identification of "at risk " adolescents might be assisted by examining each developmental task separately.

In addition to nursing practice, this project has implications for other disciplines as well. School officials, health educators,psychologists and physicians should also be aware of the effects of cognitive and developmental factors on contraceptive decision-making. There is a need for future research that addresses how cognitive development and developmental tasks affect decision-making in other areas of the

adolescents' life, such as career choices,whether to stay in school,whether to take drugs, to name a few.

Summary

In summary then, this project has provided a conceptual framework, review of literature and development of a tool designed to assess cognitive and developmental factors and how they influence the use of contraceptives in early adolescent females. Data collection is needed to fully determine the usefulness of the tool. A longitudinal study is needed to correlate contraceptive decision-making and actual contraceptive behavior. This chapter provided a summary, recommendations, implications for nursing practice,nursing education,and future research.

APPENDIX A

QUESTIONNAIRE

PART A

BACKGROUND INFORMATION

The following questions ask general things about you. Please answer all the questions as best as you can. Remember all information will remain confidential. No one will be told how you answered the questions.

1. When were you born?

_____
month day year

2. What grade are you in?

_____

3. What kind of school do you attend?
- Check one-

_____ public high school
_____ private high school
_____ alternative high school
_____ other (write in)_____

4.What is your ethnic background?
-Check one-

_____ black
_____ white
_____ native American
_____ Hispanic American
_____ other

5. Do you hold a job?
-Check one-

_____ unemployed
_____ 5-10 hrs a week
_____ 10+hrs a week

6. What is your religious background?

_____ no religious background
_____ Protestant

_____ Catholic
_____ Jewish
_____ other

7. Do you consider yourself a religious person?

_____ yes
_____ no

8. Prior to coming here today, which of the following conditions did you have?
(Check those that apply)

_____ heart disease
_____ diabetes
_____ respiratory disease
_____ obesity
_____ cancer
_____ kidney disease
_____ epilepsy
_____ none of the above

9.With whom are you now living with?
(Check all that apply)

_____ parent or parents
_____ brothers, sisters, aunt or uncle
_____ friend or friends
_____ boyfriend
_____ any other person
write in _____

10. Do you smoke?

_____ yes
_____ no

11. How much beer,wine or alcohol do you drink?
(Check one)

_____ never drink
_____ currently drink-if so how much?
write in amount_____

12. Do you have a steady boyfriend?

_____ yes
_____ no

13. Have you ever had sexual intercourse?

_____ yes
_____ no

14.How would you describe your grades in school?

_____ A-B
_____ C-D
_____ F

15. What occupation would you like to engage in as an adult?
(Write in)

_____

16. What is your position of birth in your family?

_____ youngest
_____ middle
_____ oldest

YOU ARE NOW FINISHED WITH THIS PORTION OF THE QUESTIONAIRE.
PLEASE GO TH THE NEXT SECTION.

_____

APPENDIX A
Part II

Suppose you had these four numbers to make a license plate, with four digits. There are many different plates you can make with these numbers.

See how many you can arrange and record here. Remember, try to follow a plan. The numbers are:

1. 2. 3. 4.

APPENDIX A, PART III

Most adolescents have some feelings about how they look and how their bodies work. The total of all your feelings and attitudes about your body is called body image. The following is a list of fifty (50) body parts or functions. Please check the feeling that best describes how you feel about that item.

	Strong Negative Feelings	Moderate Negative Feelings	No Particular Feelings	Moderate Positive Feelings	Strong Positive Feelings
1. Hair	( )	( )	( )	( )	( )
2. Facial complexion	( )	( )	( )	( )	( )
3. Appetite	( )	( )	( )	( )	( )
4. Hands	( )	( )	( )	( )	( )
5. Distribution of hair over your body	( )	( )	( )	( )	( )
6. Nose	( )	( )	( )	( )	( )
7. Fingers	( )	( )	( )	( )	( )
8. Elimination	( )	( )	( )	( )	( )
9. Wrists	( )	( )	( )	( )	( )
10. Breathing	( )	( )	( )	( )	( )
11. Waist	( )	( )	( )	( )	( )
12. Energy level	( )	( )	( )	( )	( )
13. Back	( )	( )	( )	( )	( )
14. Ears	( )	( )	( )	( )	( )
15. Chin	( )	( )	( )	( )	( )
16. Exercise	( )	( )	( )	( )	( )
17. Ankles	( )	( )	( )	( )	( )

	Strong Negative Feelings	Moderate Negative Feelings	No Particular Feelings	Moderate Positive Feelings	Strong Positive Feelings
18. Neck	( )	( )	( )	( )	( )
19. Shape of head	( )	( )	( )	( )	( )
20. Body Build	( )	( )	( )	( )	( )
21. Profile	( )	( )	( )	( )	( )
22. Height	( )	( )	( )	( )	( )
23. Age	( )	( )	( )	( )	( )
24. Buttocks	( )	( )	( )	( )	( )
25. Thighs	( )	( )	( )	( )	( )
26. Width of shoulders	( )	( )	( )	( )	( )
27. Arms	( )	( )	( )	( )	( )
28. Chest	( )	( )	( )	( )	( )
28. Eyes	( )	( )	( )	( )	( )
30. Digestion	( )	( )	( )	( )	( )
31. Hips	( )	( )	( )	( )	( )
32. Skin texture	( )	( )	( )	( )	( )
33. Lips	( )	( )	( )	( )	( )
34. Legs	( )	( )	( )	( )	( )
35. Forehead	( )	( )	( )	( )	( )
36. Teeth	( )	( )	( )	( )	( )
37. Feet	( )	( )	( )	( )	( )
38. Sleep	( )	( )	( )	( )	( )
39. Voice	( )	( )	( )	( )	( )
40. Heart	( )	( )	( )	( )	( )
41. Knees	( )	( )	( )	( )	( )
42. Sex (male or female)	( )	( )	( )	( )	( )
43. Posture	( )	( )	( )	( )	( )
44. Face	( )	( )	( )	( )	( )
45. Weight	( )	( )	( )	( )	( )
46. Back of Head	( )	( )	( )	( )	( )
47. Mouth	( )	( )	( )	( )	( )
48. Abdomen (stomach)	( )	( )	( )	( )	( )
49. Sex organs	( )	( )	( )	( )	( )
50. Muscle tone	( )	( )	( )	( )	( )

YOU HAVE NOW FINISHED THIS PORTION OF THE QUESTIONAIRE.
PLEASE GO TO THE NEXT PORTION

Appendix A. Part IV.

Means End Stories

IN THIS PROCEDURE, WE ARE INTERESTED IN YOUR IMAGINATION. YOU ARE TO MAKE UP SOME STORIES. FOR EACH STORY YOU WILL BE GIVEN THE BEGINNING OF THE STORY AND HOW THE STORY ENDS. YOUR JOB IS TO MAKE UP A STORY THAT CONNECTS THE BEGINNING THAT IS GIVEN TO YOU WITH THE ENDING GIVEN YOU. IN OTHER WORDS, YOU WILL MAKE UP THE MIDDLE OF THE STORY. WRITE AT LEAST ONE PARAGRAPH FOR EACH STORY.

Adolescent couple is having regular intercourse, but want to avoid pregnancy. Story ends six months later with unchanged sexual activity and no pregnancy.

Alternate Thinking

IN THIS PROCEDURE, WE ARE INTERESTED IN HOW MANY RELEVANT OPTIONS YOU CAN MAKE UP. FOR THE STORY YOU WILL BE ASKED TO IDENTIFY THE WAYS THE COUPLE COULD REACH THE GOAL OF AVOIDING REPRODUCTION.

Adolescents are considering sexual intercourse, reproduction and contraception. Identify all the ways they could avoid reproduction.

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