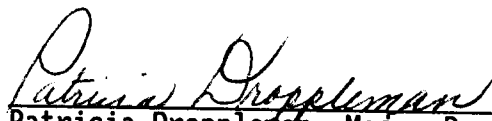
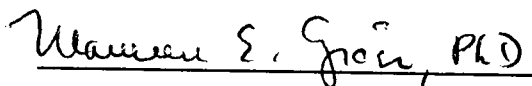


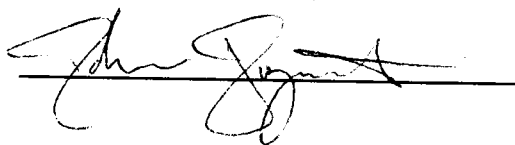
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Date November 25, 1987

**ATTITUDES, BEHAVIORS, AND KNOWLEDGE REGARDING
CONTRACEPTIVE USE AMONG ADOLESCENTS IN
LOUDON COUNTY, TENNESSEE**

**A Thesis
Presented for the
Master of Science in Nursing
Degree
The University of Tennessee, Knoxville**

Ramona Galyon Scott

December 1987

DEDICATION

To my father, Everett Galyon, who always was proud of me. I wish he could have lived to see this.

To my mother, Gaynelle C. Galyon, who taught me to always do my best. Her determination is a constant source of encouragement.

ACKNOWLEDGMENTS

To my committee:

Pat Droppleman deserves many thanks for her constant encouragement and support. Her red ink was never without constructive suggestions for improvement.

Maureen Groer gave valuable suggestions for method strategies when working with adolescents. Her research expertise was appreciated.

John Jozwiak was a stabilizing force with regard to data interpretation. His editorial precision was exceptional.

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The Lenoir City and Loudon County school boards are commended for their courage in supporting this study. Without their approval, this work would have still been an idea.

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Finally, inexpressible gratitude to my husband, Robin, for his patience, understanding, and domestic engineering assistance during the study.

ABSTRACT

The purpose of this study was to examine the current levels of attitudes, behaviors, and knowledge regarding contraceptive use among adolescents in Loudon County, Tennessee. A voluntary convenience sample (N=185) of teenagers, aged 13 to 18, enrolled in Loudon County public schools were given a 73-item questionnaire, excluding demographic data. The questionnaire was a compilation of two previously developed tools to measure attitudes, behaviors, and knowledge concerning contraceptive use.

The mean age of subjects was 15.2 years with 64 being male and 121 being female. Average age of initiation of intercourse in this sample was 14.1 years. Females were found to have significantly higher knowledge scores than males. Older adolescents were found to be significantly greater users of contraceptives than younger adolescents (70% vs. 48%). A moderately positive correlation was found between favorable attitudes toward contraceptive use and actual use of contraceptives. Peers were the main source of contraceptive information, but parents were the preferred source. There was no significant difference between male and female attitudes toward contraceptive use.

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CHAPTER I

INTRODUCTION

Fertility rates among United States teenagers under the age of 18 years ranked second only to Hungary among 30 industrialized countries in 1979/1980 (Westoff, Calot, & Foster, 1983). In Tennessee, teens accounted for one in five pregnancies in 1984 (Tennessee Department of Health and Environment, 1985). Various newspapers, news magazines, radio, and television networks have reported on the epidemic proportions of teenage pregnancy. Well-known institutions such as the Alan Guttmacher Institute have sponsored studies on the problem of teenage fertility in the United States compared to other countries. As a nation, we are concerned about "babies having babies."

Why are Americans so concerned about the problem of teenage pregnancy? Forrest (1986) cited several reasons for increasing consideration of this problem: (a) visibility of pregnant teenagers was increased after the Title IX amendment in 1972 made it illegal to bar pregnant teenagers from school; (b) although birth rates of teenagers declined, illegitimacy rose; (c) increased numbers of research studies dealt with adolescent sexuality, pregnancy, and contraception, making printed statistics available; (d) research studies also focused on economic and social consequences of teenage pregnancy which in turn led to research on prevention.

Should Tennesseans be concerned about the problem of teenage pregnancy? According to the State Center for Health Statistics (1984),

"the Tennessee teenage birth rate per 1000 female population exceeded the comparable United States rate for each year, 1950 to 1980" (p. 1). In 1985, for females aged 10 to 19, Loudon County led East Tennessee in teenage pregnancies with 54.4 per 1,000, the state average being 45.6 per 1,000 (State Center for Health Statistics, provisional data, 1986). It is not clear why a relatively rural state and predominantly rural county would have such rankings.

The following work is a baseline effort to examine attitudes, behavior, and knowledge regarding contraceptive use among teenagers in Loudon County, Tennessee. While previous research generated in the area of adolescence and contraceptive use has focused on female minorities located in large cities, this study had somewhat different distinguishing characteristics. The demographic characteristics of this sample included rural students, male and female participants in the same data set, and a majority of Caucasian subjects.

Overview of the Problem

The emergence of increased sexual activity among adolescents combined with absent or inconsistent use of contraceptives within this group has continued to support a nationwide adolescent pregnancy problem. Although the teenage pregnancy rate is lower now than in the last decade, statistics from the National Institutes of Health (1986) show that for every 1,000 sexually active teenagers in 1983, 231 (23.1%) became pregnant. Considering the literally millions of sexually active teenagers in the United States, the statistics would support Zelnik, Kantner, and Ford (1981) who state that there are "one

million pregnancies [occurring] annually to young women under the age of 20" (p. 19). In this context, the enormity of the problem of teenage pregnancy becomes clearer even in the light of declining pregnancy rates.

The maternal mortality associated with adolescent pregnancy has been estimated as nearly double the adult rate (Sacker & Neuhoff, 1982). Complications of pregnancy can be devastating for the mother as well as the fetus (Makinson, 1985). The specific problems associated with teenage pregnancy can be divided into the broad categories of medical, psychosocial, and economic concerns.

The most common medical problem in adolescent pregnancy is pregnancy induced hypertension (PIH). This disorder may contribute to further problems such as abruptio placenta, intrauterine growth retardation, and clotting mechanism dysfunction (Makinson, 1985; Stuart & Wells, 1982). Ryan and Schneider (1978) found PIH the most common medical complication of adolescent pregnancy, followed by premature labor.

Prematurity is the greatest contributor to neonatal mortality and occurs with higher frequency in teenage pregnancies. Makinson (1985) stated, "Both prematurity and low birth weight among the offspring of teenage mothers are associated with early childbearing and have long been considered the immediate causes in increased infant morbidity and mortality" (p. 135). A high incidence of fetal distress was noted among teenage mothers in an earlier study by Ryan and Schneider (1978). This fetal distress was thought to contribute to neonatal complications

resulting in a perinatal mortality rate of 54/1,000, "about twice that of the general population" (Ryan & Schneider, p. 1196).

Stuart and Wells (1982) stated that "up to two thirds of all female school dropouts cite pregnancy and/or marriage as the reason for leaving" (p. 127). Percentages of dropouts vary, but most authors cite figures closely approaching or exceeding 50% (Mott & Marsiglio, 1985; Singh, 1986). Educational limitations logically limit socioeconomic gains. It is disappointing to note that the dropout rate remains high despite landmark legislation (i.e., Title IX of the Educational Amendments of 1972 which prohibited federally funded schools from preventing pregnant girls from continuing to attend).

The socioeconomic ramifications of teenage pregnancy are multiple. Moore, Hofferth, Caldwell, and Waite (1979) analyzed national data from 5,000 women aged 14 to 24 and found, "Among mothers age 24 in the NLS [National Longitudinal Study of the Labor Market Experiences of Young Women] sample, those women who were 15 or younger at their first birth have an average of 1.25 more children than women who bore their first child at age 21 to 23" (p. 11). Moore and associates also analyzed data from the Panel Study of Income Dynamics (PSID) which surveyed 5,000 families. Women aged 35 to 52 in this sample who were 15 or younger at their first birth "have an average of three children more than women who were at least 24 when they became mothers" (Moore et al., p. 11). Again, when one considers the expense of raising even one child, the decline in pregnancy rates is overshadowed by the larger numbers of pregnancies occurring in those young women who were adolescent mothers.

Cost is another socioeconomic concern when considering the topic of adolescent pregnancy. Estimates by Burt (1986) indicated that in 1985 16.65 billion dollars were spent through three federal aid programs: Aid to Families with Dependent Children (AFDC), food stamps, and Medicaid for women who had given birth as teenagers. Burt further projected, "If all teenage births were delayed until the mother was 20 or older, the potential savings to the public would be \$5,560 for each birth delayed and \$2.06 billion for the entire cohort of teenagers who would otherwise have had a first birth in 1985" (p. 221). The dependence upon government funds continues as one-half of AFDC caseloads begin as the result of teenage births (Burt, 1986).

In addition to low economic status, children of adolescent mothers have been noted to have lower IQ scores (Hardy, Welcher, Stanley, & Dallas, 1978), more behavioral problems, and score below the mean percentiles for height and weight (Sacker & Neuhoff, 1982). Marital problems, separation, and divorce are likely consequences of adolescent marriage (Billy, Landale, & McLaughlin, 1986; Furstenberg, 1976; McCarthy & Menken, 1979). The increased stress of single parent childbearing and child rearing can contribute to abuse of children born to teenage mothers (Baldwin, 1976; Sacker & Neuhoff, 1982). Adolescent mothers also have a higher incidence of suicide than their non-parent peers (Gabrielson, Klerman, Currie, Tyler, & Jekel, 1970).

A final important socioeconomic consideration when exploring teenage pregnancy is the topic of illegitimacy. Although the rate of teenage pregnancy has declined nationally, the rate of illegitimacy has risen sharply in the last two decades. According to the Tennessee

State Center for Health Statistics (1984), "the percent illegitimate births to mothers of all ages increased almost four times from 5.8 in 1950 to 20.9 in 1982" (p. 7). Among teenagers, the numbers were much higher: "In 1950, 56.2 percent of births to mothers in that [10-14] age group were illegitimate. The corresponding percent in 1982 was 85.3. The proportion of illegitimate births for 15 to 19 year olds in 1982 was three times that proportion in 1950" (p. 7). Illegitimacy greatly compounds the previously discussed socioeconomic disadvantages of teenage pregnancy. In the words of Zelnik et al. (1981), "illegitimacy is to some extent a threat to the integrity and continuity of a society" (p. 169).

After reviewing some of the more common medical, psychosocial, and socioeconomic problems of adolescent pregnancy, it is clear that solutions must be aggressively researched. The present study explored potential means for prevention of pregnancy by surveying attitudes, behaviors, and knowledge about contraceptive use. By examining several variables that are potentially relevant, dominant themes regarding nonuse of contraceptives may emerge.

Factors involved in contraceptive use are multiple. There are physical, cognitive, psychological, social, and moral variables to be considered when exploring motives for use or nonuse of contraceptives. Psychological considerations are paramount in the evaluation of adolescent contraceptive use.

Elkind (1967) described adolescents as being of an egocentric nature. Simply stated, the teenager is absorbed in thoughts of self and how others react to him or her. The term imaginary audience is

used to describe the concept that the adolescent assumes others are as interested in him or her as he or she is in himself or herself. The belief that the adolescent is unique and invulnerable is described by the term personal fable (Elkind, 1965). Cvetkovich, Grote, Bjorseth, and Sarkissian (1975) stated that the imaginary audience and the personal fable were contributory to teenage contraceptive use and nonuse. For example, if the adolescent perceives himself or herself as being attractive to others and "immune" from pregnancy, that teenager most likely would participate in unprotected intercourse and be at risk for pregnancy.

Another factor to consider in relation to adolescent contraceptive use and nonuse is that of knowledge level. The results of a Gallup Youth Survey reported in 1979 by Family Planning Perspectives noted that 43% of teenagers aged 13 to 18 have had a sex education course in school (Family Planning Perspectives, Digest, 1979). Zelnik (1979) reported that "seven in ten never-married United States women aged 15 to 19 have had a sex education course, almost all of them in school" (p. 355). Orr (1982) provided the following: "36 percent of United States public high schools offer a sex education course, compared to 38 percent of Catholic high schools and 24 percent of other nonpublic schools" (p. 304). However, in 1980, only two states, Maryland and New Jersey, and the District of Columbia required sex education to be offered in school (Family Planning Perspectives, 1980). Orr noted that southern schools were less likely to have sex education courses than schools in other parts of the country, a finding substantiated by Zelnik (1979). Tennessee recently passed legislation that required

each school board to accept or reject the state family life curriculum (H. Duff, personal communication, April 1987).

Sex education courses contain a variety of information. Curriculum topics range from pregnancy and childbirth to sexual techniques (Orr, 1982). The most common topics covered in sex education classes are, in order of frequency taught, venereal disease, pregnancy and childbirth, changes at puberty, anatomy and physiology, drugs, alcohol, sex, teenage pregnancy, and dating (Orr, 1982). Despite educational emphases, Zelnik (1979) indicated only one-third of girls aged 15 to 19 who had taken a sex education course could correctly identify the fertile period of the menstrual cycle. It is unclear whether sexuality information is being taught poorly or whether adolescents fail to participate in or internalize sex education instruction.

Kirby (1985) cited reasons for the limited amount of knowledge gained in sex education courses. Youth have many sources of sex information, some correct and some incorrect. In light of the adolescent's need for acceptance and affiliation, it is not surprising that many teenagers obtain information from peers and may believe this information to be more correct than facts obtained from teachers or parents. The adolescent often has some basic knowledge regarding sexuality, however limited or correct, before taking a course.

Finally, there are many other possible reasons for adolescent pregnancy in addition to egocentrism and limited sexual and contraceptive knowledge. For example, consider a troubled family situation in which the teenager seeks a ready escape. Some teenagers

rebel against traditional values by becoming pregnant. Still others believe pregnancy is a means to an end of "getting their man." There are as many reasons for adolescent pregnancy as there are adolescents themselves, each case being distinctly individual. The fact remains, however, that of the one in 10 pregnant teenagers, aged 15 to 19 in 1981, "fewer than one in fifty intended to conceive" (Forrest, 1986, p. 40).

In order to understand factors that contribute to adolescent contraceptive use, it is necessary to examine adolescent attitudes about contraceptive use, assess adolescent knowledge levels regarding biological and psychological components of sexuality and possible outcomes of sexual activity, and assess adolescent levels of understanding of various methods, actions, and use of contraceptive techniques. Aspects of each of the above are addressed in the study. Comparisons are made between gender and ages with respect to these aspects of adolescent contraceptive use.

Problem Statement

The purpose of this study was to explore the current level of attitudes, behavior, and knowledge regarding contraceptive use among teenagers aged 13 to 18 enrolled in public schools in Loudon County, Tennessee.

Research Questions

1. Is there a significant difference between males and females with regard to contraceptive knowledge?

2. Is there is a significant difference between younger adolescents (age 13 to 15) and older adolescents (age 16 to 18) with regard to contraceptive use?
3. Are attitudes that place a high value on use of contraceptives consistent with a high use of contraceptives?
4. From what sources did adolescents receive the majority of their information regarding contraceptives?
5. For females who have been pregnant, is there an increased subsequent use of contraceptives?
6. What are the attitudes of males versus females with regard to contraceptive use?

Theoretical Framework

Dorothea Orem

Dorothea Orem (1985) provides a useful theory for nursing care of adolescents through a developmental approach to self-care. Every individual must accomplish self-care or have self-care provided if they are to survive. Self-care by Orem's (1985) definition is, "The production of actions directed to self or to the environment in order to regulate one's functioning in the interests of one's life, integrated functioning, and well-being" (p. 31).

Self-care is further divided by Orem (1985) into three categories: universal, developmental, and health-deviation self-care requisites. Universal self-care requisites are, by definition, those tasks which all persons must accomplish to survive. Developmental self-care requisites appear on a continuum from fetal life to death. Health-

deviation self-care requisites present as challenges to meet when the individual's state of health is impaired in some way.

Occasionally it becomes necessary for the individual to seek the help of a nurse in meeting his or her self-care requisites. Nursing, according to Orem (1985), is performed using one or more of three systems. The wholly compensatory nursing system is needed when clients are "socially dependent on others for their continued existence and well-being" (p. 154). The partly compensatory nursing system involves "situations where both nurse and patient perform care measures or other actions involving manipulative tasks or ambulation" (p. 156). The third nursing system is the supportive-educative system in which "the patient is able to perform or can and should learn to perform required measures of externally or internally oriented therapeutic self-care but cannot do so without assistance" (p. 156).

When caring for adolescents and their contraceptive needs, the supportive-educative nursing system was chosen as a framework for meeting developmental self-care needs. The developmental requisite of promoting progression to higher levels during the developmental stages of adolescence is of primary importance to the study. If this need for progression is met, the result "should contribute to the prevention of developmental disorders and promote development in accord with human potential" (Orem, 1985, p. 96).

In her discussion of developmental self-care requisites, Orem includes promotion of the process of development, "including adolescence and entry into adulthood" (p. 96). In other words, each person has responsibility for growth and development of himself and

others. This idea has important implications for parents and nurses. When raising a child, one cannot stop when the child is a teenager, nurturing must continue. If nurses assess difficulties, it is our function to aid in the promotion of development. This surely includes psychosexual development.

Nominal Definitions

1. Adolescent - an individual aged 13 to 18.
2. Attitude - "A state of mind or feeling with regard to some matter" (American Heritage Dictionary, 1982).
3. Behavior - an action or set of actions performed by an individual.
4. Knowledge - "The sum or range of what has been perceived, discovered, or learned" (American Heritage Dictionary, 1982).
5. Contraceptive - a method--medical, mechanical, or behavioral-- of preventing conception.

Assumptions

1. All questionnaires were answered honestly by the subjects.
2. The questionnaire is a valid and reliable tool for use with the population under study as it is a compilation of previously used tools developed for use with adolescents.

CHAPTER II

LITERATURE REVIEW

The topic of adolescent contraceptive use includes so many physical, social, psychological, and moral components that it is difficult to study without first reviewing relative themes. It is important to relate studies of individual aspects of adolescent contraceptive use to a "big picture." The following themes help to explain some of the whys and hows of contraceptive use and nonuse.

Themes

Kathryn Urnberg (1982) provided a problem-solving framework grounded in developmental theory. Urnberg asserted her belief in the importance of a useful theoretical framework that "must be able to specify the important variables, be applicable to both males and females, and be able to be applied developmentally" (p. 528). Five steps of problem solving were applied to contraceptive behavior (Urnberg, 1982). These steps follow in the sequence: (a) perception of the problem, (b) motivation, (c) generation of solutions, (d) decision making, and (e) implementation.

Each of the steps above is dependent on many variables. Recognition of the problem, the first step, depends on three variables: sexual self-concept, cognitive skills, and knowledge (Urnberg, 1982). Motivation involves vulnerability, confidence, and value of contraceptives. Generating multiple solutions is theoretically within

the realm of competencies of those individuals in the formal operational stage. Decision making involves intent or attitude and norms of the adolescent's reference group. Finally, to implement a plan requires assertiveness and self-confidence, qualities frequently in an immature stage in younger adolescents (Urnberg, 1982).

The problem-solving strategy is helpful in understanding the many reasons for nonuse of contraceptives. For example, denial of sexuality and accompanying feelings of guilt may prevent the teenager from recognizing the problem. Urnberg (1982) stated the ability for mature formal operational thought develops during adolescence, therefore younger teenagers may not associate today's activity with next month's consequences. Finally, the teenager may not have enough information or the right type of information to recognize the problem and possible solutions.

Locus of control is another important variable to be considered. As Urnberg (1982) aptly asserted, "If people do not believe that events in their lives are under their own control, they are not apt to take action to influence these events" (p. 533). The teenager with a high personal fable may not be motivated to seek solutions.

The importance of attitudes and norms in decision making cannot be overlooked. Using a model developed by Ajzen and Fishbein (1972), Urnberg (1982) defined intention as a "linear combination of attitudes and perceived normative pressures" (p. 535). As attitudes relate to teenage contraceptive use, the imaginary audience is an important consideration. The question, "What will everyone think?" should be

answered by health care providers before it is asked. To say that norms are extremely important to teenagers is an understatement.

To assist the teenager in using the problem-solving approach regarding contraceptive use, the health care provider must be aware of potential problems at each step. Knowledge is not enough. Availability of contraceptives is not enough. The answers are multifactorial and depend, in large part, upon assisting the adolescent to meet developmental self-care requisites as described by Orem (1985).

A second theme by Thomson (1982) involves two types of socialization for sexual and contraceptive behavior. They are moral absolutes versus relative consequences (Thomson, 1982). Each has merit although the approaches are different.

These strategies were first described by Christensen (1969) and have been expanded by Thomson (1982). In the moral absolutes socialization, "adolescent premarital sexual behavior is wrong, regardless of the circumstances or consequences of the behavior" (p. 104). From the relative consequences view, "the rightness or wrongness of adolescent premarital sexual behavior depends on the consequences of the behavior for adolescents and society" (p. 104).

Thomson (1982) surveyed 329 urban adolescents, ages 14 to 17 with an equal distribution of males and females, with regard to the aforementioned types of socialization. The results indicated the effectiveness of the moral absolutes strategy: "Adolescent premarital sexual behavior is inversely associated with exposure to moral absolutes socialization" (p. 121). The relative consequences strategy provided unclear effects, although "there is some evidence that

contraceptive attitudes and behavior may be positively associated with sex and contraceptive discussion" (p. 121).

Developmental theory is inseparable from the study of adolescents and contraceptive use. Howe (1986) stated, "development never ceases and individuals continue to be socialized" (p. 68). Adolescents are in a period of adjustment and change, perhaps the greatest they will ever face.

Jean Piaget's stages of cognitive development are of assistance in helping to explain contraceptive use and nonuse in adolescents. Piaget's stages of cognitive development are: (a) the pre-language sensori-motor stage, (b) the pre-operational stage (2 to 7 years), (c) the concrete operational stage (7 to 12 years), and (d) the propositional or formal operational stage (Campbell, 1976). The child moves through each of these stages by the process of "equilibration," which to Piaget (1985) "leads from a state near equilibrium to a qualitatively different state at equilibrium by way of multiple disequilibria and reequilibrations" (p. 3). The process of development is undergoing constant change and movement with milestones for each stage.

The last stage of cognitive development, formal operations, begins around age 12. The adolescent can begin to reason hypothetically and theoretically with a logical sequence of consequences (Campbell, 1976). This ability to think about the possibilities given a set of theoretical conditions is crucial to the ability of effective contraceptive use.

Piaget placed great importance on role acquisition during adolescence in relation to the formal operational stage. Each stage of cognitive maturation is reached by equilibration as previously mentioned. The cognitive stage of formal operations may or may not be reached by early teenage years. Complicating this cognitive development is the task of taking adult roles. As Piaget himself noted, "We take at the fundamental problem of adolescence the fact that the individual begins to take up adult roles" (Campbell, 1976, p. 60).

The adolescent tries out these adult roles from an egocentric point of view. He or she tries to make the world conform to these ideas and ideals. The task of maturation necessitates the adolescent be able to "decenter" himself or herself and see the world as others see it (Campbell, 1976).

When biological changes and hormone surges are added to the cognitive and affective tasks mentioned above, it is easier to appreciate the difficulty of growing into an adult. The adolescent may have biological maturity and lack cognitive and/or affective maturity. The teenager in this situation may have difficulty using contraceptives effectively.

Elkind (1981) linked cognitive structure and experiences that occur in adolescence. Firstly, the teenager is able to use "combinational logic" to see several solutions to a problem. Given the fact that they have this logic, it is not surprising that some adolescent reactions such as disagreements with parents about the solution to a problem occur (Elkind, 1981). Secondly, the adolescent has the cognitive ability to use "symbols for symbols" which allows him

or her to "take his own thought as an object which is to say that he can now introspect and reflect upon his own mental and personality traits" (Elkind, 1981, p. 100). Adolescents are often involved in self-conscious thought which can be uplifting or depressing to them.

Lastly, and most closely related to this study, is the adolescent's ability to construct ideals, as Elkind (1981) stated, "contrary-to-fact situations" (p. 101). This ability gives the teenager the means to think of the future and of the best possible or perfect situations. Life events coupled with their cognitive ability make take the form of rebellion and disillusionment with society. Ideal persons and situations exist in the mind of the teenager. Elkind (1981) gave the examples of the "adolescent crush" and feelings of superiority over adults. In short, the teenager believes he or she is always correct in thought and actions. The internalization of this concept is potentially dangerous, especially where contraceptive use is concerned.

Elkind (1967) described two components of adolescent egocentrism which may help to explain contraceptive nonuse. These are the imaginary audience and the personal fable. Egocentrism, by definition, involves a mindset where situations are "viewed or perceived from one's own mind as a center" (American Heritage Dictionary, 1982). The egocentrism of adolescence is a result of the child's entrance into formal operational thought in which the teenager not only conceptualizes his or her own thought, but the thoughts of others as well (Elkind, 1967). Developmentally, the adolescent has not reached a point at which he or she can "differentiate between objects toward

which the thoughts of others are directed and those which are the focus of their own concern" (Elkind, 1967, p. 1029). In short, the adolescent perceives others as sharing his or her own mental preoccupations. As Elkind (1967) stated, "It is this belief that others are preoccupied with his appearance and behavior that constitutes the egocentrism of the adolescent" (p. 1030).

Imaginary audience and personal fable describe two important traits of adolescent egocentrism. The imaginary audience involves the teenager's belief that others are as interested in him or her as he or she is. Many actions and reactions of adolescents can be explained when one realizes that the adolescent constructs this imaginary audience much of the time (Elkind, 1967). Self-consciousness, wishes for privacy, shame, self-criticism, and self-admiration are but a few behaviors or experiences that the imaginary audience can explain.

The complement to the imaginary audience is the personal fable. The personal fable is a "complex of beliefs in this uniqueness of his [the adolescent's] feeling and of his immortality . . . a story which he tells himself and which is not true" (Elkind, 1967, p. 1037). The adolescent regards himself or herself as special, unique, and invincible. How often the parents of a teenager hear the words, "You just don't understand!" Amusing as this concept may seem to an adult, the personal fable and imaginary audience have implications for understanding contraceptive use, or the lack of it, among adolescents. Elkind (1967) stated, "Many young girls become pregnant, because, in part at least, their personal fable convinces them that pregnancy will

happen to others but never to them and so they need not take precautions" (p. 1032).

Cvetkovich, Grote, Bjorseth, and Sarkissian (1975) as well as Pestrak and Martin (1985) used the developmental themes of David Elkind (1967) to study contraceptive use among adolescents. Both studies confirmed the importance of considering egocentrism when understanding adolescents' contraceptive behavior. Cvetkovich and colleagues suggested egocentric thought may be involved in contraceptive nonuse among adults as well as adolescents.

Pestrak and Martin (1985) applied the personal fable to adolescents who attempt to operate in society's sexual standard which says "love makes sex okay and beautiful" (p. 985). Remembering that the adolescent, in his egocentric thought, believes his or her thoughts to be unique, he or she feels in love because "no one else could have ever felt like this" (Pestrak & Martin, p. 985). Combined with their egocentric thought is a cognitive level which does not allow the teenager to correctly apply the laws of probability, another example of the personal fable.

In the midst of this cognitive and emotional struggle to understand themselves and their world, adolescents are confronted with a society of sexual permissiveness. Ramsey (1982) stated that our society "practically insists that teenagers become sexually active" (p. 233). A theory for sexual permissiveness was presented by Kelley (1978) which may provide understanding of sexual activity among teenagers. Kelley's theory stated that those individuals who find intercourse pleasurable, who are sexually attractive themselves, or

find sexually attractive partners make them more sexually permissive in the future. A great number of advertisements focus on making one's self more attractive and appealing. Being attractive physically has become somewhat of an obsession in the United States. Adolescents are hearing this message loud and clear in popular songs and contemporary movie and television situations. In their struggle to be like everyone else, adolescents may become more sexually permissive when one considers Kelley's theory.

A review of current literature regarding themes relative to adolescent contraceptive use would be incomplete without information on teenage sexuality. Erikson (1968) provided support for an egocentric component to teenage sexual behavior. The teenager is using the partner and being used to find himself or herself. Thus, the purpose of sexual behavior in adolescence, from Erikson's point of view, is a way to form one's identity and not a sharing of true intimacy. "The human youth is as yet unable either to love in that binding manner which only two persons with reasonably formed identities can offer each other, or to care consistently enough to sustain parenthood" (Erikson, 1968, p. 242).

Attitudes

Zabin, Hirsch, Smith, and Hardy (1984) spurred the author's interest in adolescent sexual attitudes and behavior in their study of some 3,500 inner-city male and female teenagers. Zabin et al. (1984) found inconsistencies between attitudes and behavior with regard to sexuality and contraceptive use. For instance, the majority listed an

ideal age for initiation of intercourse as older than their actual age at first intercourse. The teenagers seemed unable to translate attitudes into responsible contraceptive and sexual behavior.

Attitudes toward sexuality and contraceptive use vary with gender, age, and dating stage. Freeman et al. (1980) reported that for females, attitudes toward contraceptives became more positive with progressing grade of school while males showed no increase after grade 10. The males in this study believed females had correct information about contraceptives which would decrease male active participation in birth control. By late adolescence, however, the attitude toward shared contraceptive responsibility emerges (Sheehan, Ostwald, & Rothenbarger, 1986).

Roche (1986) found that attitudes toward proper premarital sexual behavior, actual sexual behavior, and perceived sexual behavior of others varied by dating stage. The stages of dating for the study numbered five, ranging from "dating with no particular affection" to "becoming engaged" (Roche, 1986). In the first three stages, males were more permissive in their attitudes toward intimate contact but by stage four, "dating one person only and being in love," males and females shared attitudes toward intimate contact (Roche, 1986, p. 109). For males and females, actual reported sexual behavior was more permissive than stated "proper" premarital sexual behavior, indicating yet another discrepancy between attitudes and behavior. Both genders perceived others to be more permissive than themselves, especially males (Roche, 1986), thus lending support to the attitude among adolescents that "everybody's doing it." Reflecting on the imaginary

audience, if the adolescent perceives that his or her peers are sexually permissive, personal sexual permissiveness may result.

Rural students in New York state (McCormick, Izzo, & Folcik, 1985) completed a forced-choice questionnaire to determine their sexual and contraceptive behavior, religious values, premarital sexual standards, and sex role attitudes. Those students with liberal premarital sexual standards were found to be more sexually intimate with dates yet were not more effective contraceptors than those with conservative views. While pro-feminist students were more sexually intimate in the McCormick et al. study, sex role attitudes accounted for only 3.2% of reported levels of intimacy. In other words, the sex role attitude of the student was not useful in predicting sexual intimacy, another indication that attitudes and behavior may not be consistent.

The attitudes of teenagers are influenced by the attitudes of others--parents, peers, and society in general. Jones et al. (1985) noted the contradictory nature of many adults in the United States: "Sex is romantic but also sinful and dirty; it is flaunted but also something to be hidden" (p. 59). As a nation we send conflicting messages regarding sexuality to teenagers who are already confused about their identities.

Lewis (1973) reported that among young college students (mean age 20.3 years), an inverse relationship existed between the amount of sex education received from parents and premarital and/or promiscuous sexual behavior. That is, the more information received from parents, the less likely that youth was to participate in premarital coitus or promiscuous behavior.

In a more recent report, Newcomer and Udry (1985) reported, "neither parental attitudes toward premarital sex nor parent-child communication about sex and contraception appear to affect teenagers' subsequent sexual and contraceptive behavior" (p. 169). The researchers compared responses of 950 Caucasian teenagers and their mothers with regard to attitudes toward sex and contraception over a two-year period. A dearth of information resulted when the teenagers were asked to predict their parents' attitudes; in fact, little congruence was found between actual parental attitudes and perceived parental attitudes (Newcomer & Udry, 1985). The teenagers did not correctly report their parents' attitudes, thus making analysis of the effects of parental attitudes on adolescent sexual behavior difficult at best. However, when mothers reported they had talked about sex with their daughters, those girls were found to be less likely to begin intercourse (Newcomer & Udry, 1985). These studies provide support for parental sex education. Unfortunately, many parents find it difficult to talk with their children about sex and contraception.

While sexual and contraceptive attitudes may be difficult to interpret, it is important to review key studies. These studies allow a glimpse into the thoughts of parents and teenagers regarding sexuality and contraceptive use. It is not enough, however, to explore attitudes; one must study adolescent sexual and contraceptive behaviors to understand possible reasons for nonuse.

Behavior

Data from the National Research Council (Hayes, 1987) indicated 42% of unmarried females aged 15 to 19 were sexually active in 1982. This represented a slight decline from 46% in 1979, but significantly higher than 28% in 1971. Historically, blacks account for a greater percentage of sexually active unmarried adolescents, and while this trend fell sharply between 1979 and 1982, the percentage remained 53% black as compared to 40% white (Hayes, 1987).

The percentages of sexually active teenagers rises with age. A study conducted by the Center for Human Resource Research at Ohio State University (Hayes, 1987) presented tabular results of sexual activity by age of initiation and gender. These results showed that 16.6% of males and 5.4% of females aged 15 had experienced sexual intercourse at least once. By age 19, 77.6% of males and 62.9% of females were sexually active. The percentages for black males varied the most from cumulative reports with 42.4% of 15 year old black males having had intercourse and 92.2% of black male 19 year olds having initiated sexual activity.

It is encouraging to note that more teenagers are using contraceptives in recent years. Hayes (1987) compared studies by Zelnik et al. (1981) and Mosher and Bachrach (1986) with regard to teenagers ever using a contraceptive method and found an increase from 66% in 1976 to 85% in 1982. The use of a contraceptive method, though on the increase, was not used 100% of the time by teenagers. In 1982, 37.2% of 1,922 teenagers (Bachrach et al., 1985) reported they used contraceptives "sometimes" but not always and 14.6% reported never

using a contraceptive method (Hayes, 1987). It is evident that a significant population remains at risk for pregnancy because a contraceptive method is reliable only to its degree of use.

Degree of use of a contraceptive method with first intercourse varies with different studies. Zelnik and Shah (1983) reported 48.9% of females and 44.1% of males had used a contraceptive method with first intercourse. Meikle, Peitchinis, and Pearce (1985) reported 53.9% of teenagers aged 13 to 18 in their study had used a contraceptive method with first intercourse. The use of a contraceptive with first intercourse is age dependent. Thirty-one percent of females less than 15 years of age used a method with first intercourse compared to 62% of 18 year olds and older (Zelnik & Shah, 1983). Thirty-four percent of males aged 15 or less compared to 59% of 18 year olds or older used a contraceptive with first intercourse (Zelnik & Shah, 1983).

The method of contraceptive also varies among teenagers with type of relationship and sexual experience. With first intercourse, the contraceptive method most frequently chosen is the condom (Meikle et al., 1985; Mosher & Bachrach, 1985). As the relationship matures, a trend toward medical methods of contraception, namely oral contraceptives is seen (Kisker, 1985).

There are many variables to consider when studying the use of contraceptives among adolescents. Physiological, psychological, and social reasons for sexual behavior and contraceptive use are reviewed briefly. Simple reasons for contraceptive use and nonuse are

practically nonexistent, rather a combination of factors must be considered.

The behavior of peers is noted to influence adolescent attitudes and behaviors (Billy & Udry, 1985; Shah & Zelnik, 1981). Smith, Udry, and Morris (1985) provided a complex explanation of the effects of peers on adolescent sexual behavior by using a biosocial approach. Physical maturation and libidinal effects of androgens were matched to the subjects' sexual behavior and the sexual behavior of their best friend. For females, the physical maturation and social effects were contingent; "at low levels of libidinal motivation, an adolescent girl is less likely to become sexually involved irrespective of the level of involvement of her friends; at higher levels of libidinal motivation a friend's sexual behavior is more important" (Smith et al., 1985, p. 190). In other words, if a female is biologically sexually immature, the amount of sexual activity of her best friend is less likely to influence her than if she were biologically sexually mature. For males, Smith et al. (1985) found a constant level of importance placed upon the sexual behavior of the best friend, regardless of biological sexual maturity.

Barriers to Contraceptive Use

Physiological barriers to contraceptive use include contraindications to contraceptive methods, physical aberrations, and discomforts experienced when using the method. Psychological variables may contribute to physiological barriers to contraceptive use. For instance, if a teenager is uncomfortable with touching her own body,

she may find methods such as a diaphragm difficult to insert and use (Kelley, 1983).

Most reasons cited by adolescents for nonuse of contraceptives have a predominantly psychological base. An interesting framework for contraceptive nonuse was presented by Miller (1986) as a balance "between her [the adolescent's] positive and negative feelings toward getting pregnant and between her positive and negative feelings about her current contraceptive method" (p. 27).

Zelnik and Kantner (1979) provided the following list of reasons for nonuse of contraceptives in descending order of reported frequencies: "Didn't expect to have intercourse, believed it was wrong or dangerous to use contraception, wanted to use something but couldn't under the circumstances, partner objected, sex wasn't much fun with contraception or contraception was too difficult to use, and didn't know about contraception or where to get it" (p. 291). These reasons closely follow those reported in an investigation by Meikle et al. (1985). The top three reasons for nonuse among that group were (a) unplanned intercourse, (b) ignorance of how to get/use birth control, and (c) thought intercourse occurred during a "safe" period.

Kisker (1985) conducted interviews with urban teenagers aged 16 to 19 to determine their reasons for nonuse of contraceptives. The results resemble those of earlier studies. Adolescents did not use birth control because intercourse was unexpected, "The first time, it was like, totally out of the blue . . . I mean, you don't know it's coming, so how are you to be prepared?" (p. 84).

In addition to psychological reasons for nonuse of contraceptives, social factors must be considered. Social reasons for contraceptive use or nonuse are influenced by one's family, friends, community, and fiscal resources. Attitudinal components of family and friends to sexual behavior and contraception have been previously discussed.

Allen (1980) noted differences between urban and rural communities with regard to the availability of contraceptives for adolescents. The teenager residing in a city may have many more courses for obtaining birth control than his or her rural counterpart. The type of community in which one lives has an effect on contraceptive use.

Source of education and information about contraceptives is a social variable in contraceptive use and nonuse. Meikle et al. (1985) reported 51.7% of adolescents in their study relied upon friends or classmates for contraceptive knowledge. School was the most frequently named source of contraceptive information in Kisker's (1985) investigation.

An increasingly important source of informal information about sexual behavior and contraceptive use is television. Strouse and Fabes (1985) reviewed several studies regarding the effects of television on adolescents. Leibert, Sprafkin, and Davison (1982) states that upon graduation from high school the average person has spent more hours watching television than attending school. Strouse and Fabes cited information from the National Federal for Decency in stating, "eighty-nine percent of all sex is presented outside of marriage" in television programs (p. 255). Contraceptive use, however, is virtually nonexistent among television characters with a few recent exceptions.

In summary, there are many influences on the sexual and contraceptive behavior of adolescents. Barriers to contraceptive use are multifactorial and involve physiological, psychological, and societal influences. The teenager is confronted with multiple, sometimes conflicting, opinions regarding sexual and contraceptive behavior from a variety of sources. Each of these sources has different degrees of importance to individual adolescents. Nursing has a responsibility to provide assistance in "sorting out" influences and information sources to assist the adolescent in achieving developmental self-care requisites.

Knowledge

This section of information is concerned with sex education in general and adolescent knowledge about contraceptives and their specific use. Volumes of literature have been generated in the areas of sex education and contraceptive knowledge. The studies most closely related to this research are reviewed.

Sex Education

Sex education is perhaps one of the most controversial topics in the United States today. Pro and con opinions abound. In support of sex education, Muraskin (1986) stated, "I believe that education about sexuality is information that students have a right and a need to know, just as they have a right and a need to know fractions or English grammar" (p. 173). After initiating a sex education program in the Pomona, California, schools, a "marked decrease" in adolescent pregnancy was reported (Jenkins, 1981). New Jersey legislators were so

convinced of the positive effects of sex education they issued a mandate for public schools K-12 to teach sex education (Darden, 1981).

Other groups and individuals are opposed to public school sex education. Cortese (1981) voiced his opinion succinctly, "what the local community does not want taught should not be taught--health teachers' convictions notwithstanding" (p. 676). Scales (1981) warned of the following common attitudes to opponents to sex education: "(1) jingoistic patriotism that insists America can do no wrong; (2) 'muscular Christianity'; (3) paranoia over imagined conspiracies intent on radically changing society; and (4) an extreme fear of sexuality and information about sexuality" (p. 300).

Attitudes may not be the only threat to sex education. Richardson and Cranston (1981) revealed demographic characteristics of communities that opposed sex education. Farm and open country communities were more opposed to sex education and had greater control over course content in schools (Richardson & Cranston, 1981). Those persons employed in blue collar positions were more opposed to sex education than their white collar counterparts (Richardson & Cranston, 1981).

While both negative and positive opinions exist regarding sex education, the majority of Americans favor a course to teach children about sexuality and contraception (Byrne & Fisher, 1983; Hayes, 1987; Scales, 1981). Courses in sex education show trends toward increasing in numbers. Orr (1982) reported data from a 1977 survey of high school principals which indicates 36% of United States public high schools offered a sex education course. In a 1982 survey of 179 school districts in large cities, 75% provided a sex education course in high

school (Hayes, 1987). Schools mandating a course in sex education in 1980 included the District of Columbia, Maryland, and New Jersey (Family Planning Perspectives, 1980).

A wealth of literature exists on the effects of sex education. Similar to opinions about the topic, authors disagree as to the extent of the effects of sex education in increasing knowledge. Both sides of the issue are examined briefly.

Furstenberg, Moore, and Peterson (1985) found "the overall reported prevalence of sexual intercourse is over 50% higher among youth who did not have a course in sex education [26% vs. 17%]" (p. 133). This trend held true for each group except black males who begin sexual activity at an early age so that sex education courses are offered too late (Furstenberg et al., 1985). The percentage of sexually active 15 to 16 year olds who did not receive sex education and did not talk to parents about sex was 31% compared to 15.8% of teenagers who had a sex education course and talked with parents about sex (Furstenberg et al., 1985). Meikle et al. (1985) found more sexually active adolescents had not had a sex education course.

In a longitudinal study of young rural students in South Carolina, Thomas et al. (1985) reported a significant increase in knowledge and knowledge retention after exposure to a sex education course. Darabi, Jones, Varga, and House (1982) also reported "significant knowledge gains" among young teenagers in New York City after they had attended a sex education clinic. The geographic orientation makes little difference in knowledge gains comparing these studies. Increases in knowledge occurred regardless of the state of school location. Eighth

graders in Canada revealed more knowledge about birth control when the teacher discussed methods in depth than those who had little or no instruction (Cull-Wilby, Alcoe, & Taylor, 1985).

Other authors have not been so optimistic in their evaluation of the effects of sex education on adolescents and behavior. Kirby (1985) stated that sex education had no measurable impact on sexual behavior or contraceptive use. Kirby noted that various studies reveal results which conflict with one another regarding the amount of influence sex education has in reducing the pregnancy rate. The major reason for limited knowledge gains, according to Kirby, is that youths have multiple sources of knowledge, correct and incorrect, about contraceptives. The teenagers are unsure of the correct information and may choose not to use any method. Zelnik (1979) found that among teenage girls aged 15 to 19 who stated they knew the greatest risk period of the menstrual cycle for pregnancy, 42.8% answered a menstrual cycle question incorrectly. Eisen and Zellman (1986) found the amount of sex education did not accurately predict a greater knowledge of sexually transmitted diseases and pregnancy.

Despite controversy over whether or not to teach sex education and disputes regarding its effectiveness, adolescents themselves want sex education. In a Gallup poll (Family Planning Perspective, 1980), a large majority of students found their courses helpful. The same survey revealed 59% of teenagers felt birth control should be available to them.

Sexual Abuse

Finally, in reviewing literature regarding adolescents' attitudes, behaviors, and knowledge about contraceptive use and sexuality, information on sexual abuse cannot be excluded. Sadly, the incidence of sexual abuse in the United States seems to be rising (DePanfilis, 1986). Not all teenagers are sexually active by choice.

The National Center on Child Abuse and Neglect (DePanfilis, 1986) offered the following definition of child sexual abuse:

Contacts or interactions between a child and an adult when the child is being used for the sexual stimulation of the perpetrator or another person. Sexual abuse may also be committed by a person under the age of eighteen when that person is either significantly older than the victim or when the perpetrator is in a position of power or control over another child. (p. 2)

The adolescent may be, by definition, either the abused or the abuser. Either case represents a sexual deviation that deserves attention with regard to adolescents.

Estimates of the incidence of child sexual abuse vary from year to year and study to study. Frude (1986) stated, "It appears that about one in ten girls, for example, is subjected to abusive sexual contact of some sort before the age of fourteen" (p. 302). DePanfilis (1986) noted an increase in sexual maltreatment of 54% between 1983 and 1984 with prevalence rates between 6% and 62% for females and 3% and 31% for males.

The perpetrator of child sexual abuse is known to the victim in 75% of cases (DePanfilis, 1986; Frude, 1986; Khan & Sexton, 1983). Of particular interest to this study was a report by DeJong, Emmett, and

Hervad (1982) which indicated that about half the perpetrators in their study were less than 20 years old.

Girls are most often reported as the victims of child sexual abuse (DeJong et al., 1982; DePanfilis, 1986; Khan & Sexton, 1983). For male victims, underreporting is a problem (DePanfilis, 1986), presumably because they are not often referred to and seen in the emergency department of hospitals or in other health care settings (Khan & Sexton, 1983). Median age of victims as reported by DeJong et al. (1982) was 10 for females and 7 for males, a finding substantiated by Frude (1986) and DePanfilis (1986). It is reasonable then to assume that of those children who are sexually abused many enter the troubled period of adolescence with confusion about sexuality and what is normal and abnormal.

Would children choose to have sexual intercourse before adolescence? Swan (1985) stated, "It is possible that children may act in a way to precipitate a sexual interchange whether that is motivated from sensuous inclination, poor self-image, attention getting, or power striving" (p. 70). Most authors, however, disagree with this stance (Khan & Sexton, 1982; Zelnik et al., 1981). The prevailing attitude toward child sexual abuse is that the child is truly a victim and under normal circumstances would not choose to have sexual intercourse (Khan & Sexton, 1982).

Summary

Relevant literature concerning the attitudes, behaviors, and knowledge regarding contraceptive use has been presented. Many more

investigations are being conducted and new statistics are constantly updating earlier results. The study of adolescent contraceptive use is expanding with end results hopefully leading to a better understanding of use and nonuse so that strategies aimed at increasing contraceptive utilization can be developed.

CHAPTER III

METHODOLOGY

A description of the design and methodology employed in this investigation is presented in the following sections: (a) research design, (b) hypotheses, (c) operational definitions, (d) subjects, (e) characteristics of the sample, (f) instrumentation, and (g) procedures.

Research Design

The research design utilized in this study was a non-experimental descriptive correlational model. Data were collected over a five-week period of time from a convenience sample of male and female adolescents aged 13 to 18 who agreed, with their parents' consent, to participate in the study. All adolescents were enrolled in public schools in Loudon County, Tennessee, in the spring of 1987. The independent variables were age, gender, and pregnancy status. The dependent variables were attitudes, behaviors, and knowledge regarding contraceptive use.

Hypotheses

1. Females will have significantly higher scores than males in the area of contraceptive knowledge.

2. There will be a significantly higher rate of contraceptive use among older adolescents (ages 16 to 18) as compared with younger adolescents (ages 13 to 15).

3. There will be no significant correlation between attitudes and use of contraceptives.

4. Most adolescents will have received the majority of their contraceptive knowledge from peers.

5. There will be no difference in the use of contraceptives among previously pregnant adolescents and never pregnant adolescents.

6. Males will have significantly less positive attitudes about contraceptive use than females.

Operational Definitions

1. Positive contraceptive attitude--A score between the 70th and 99th percentile on the attitudinal component of the questionnaire.

2. Negative contraceptive attitude--A score between the 1st and 29th percentile on the attitudinal component of the questionnaire.

3. Neutral contraceptive attitude--A score between the 30th and 69th percentile on the attitudinal component of the questionnaire.

4. Contraceptive knowledge--Information held by the adolescent regarding methods of birth control.

5. Contraceptive use--Behavior involving the utilization of a method of birth control.

6. Previously pregnant--A female who has ever had a pregnancy, regardless of the outcome of the pregnancy, and who is not pregnant at the time of completion of the questionnaire.

Subjects

The subjects involved in this study were 13 to 18 year old male and female adolescents who were predominantly Caucasian (97.8%). The adolescents ($N = 185$) were enrolled in six public schools in Loudon County, Tennessee. The mean age of subjects was 15.2 years ($SD = 1.2$). A total of 196 subjects returned questionnaires; however, 7 were under 13 years of age and 4 were found to be unsuitable due to incomplete or totally inappropriate responses.

Nine hundred consent forms (see Appendix A) were distributed among homeroom classes in an attempt to obtain the most representative sample possible. One principal did not wish to distribute consent forms in homerooms and chose to give forms only to students in eighth grade science classes. A total of 197 consent forms, or an equivalent written consent on paper, were returned for a return rate of 21.9%. One student who had returned a consent form was not present on the day of data collection. One school in the county did not wish to participate in the study, therefore no consent forms were returned.

The consent form provided the subjects and their parent(s) with a brief explanation of the study. Subjects were assured that participation was voluntary and individual responses would be anonymous. The researcher provided a phone number so that subjects with questions could contact her for further explanations. No calls were received.

Characteristics of the Sample

Sixty-four males and 121 females aged 13 to 18 returned usable questionnaires. The mean age of the subjects was 15.2 years ($SD = 1.2$). The percentage of Caucasian subjects was 97.8 which was reflective of the general population of the county. Most of the subjects were never married (98.4%) and living with one ($n = 43$) or both ($n = 142$) parents. The mean age at initiation of intercourse for this sample was 14.1 years. Mean number of times of intercourse for the past six months, excluding those subjects reporting a frequency of greater than 25 times for the past six months, was 6.6. Of the 83 subjects who had ever had intercourse, 33 were male (51% of males) and 50 were female (41% of females).

Distribution of subjects by school grade is presented in Table 1. The greatest percentage of subjects was in the eighth grade due to a 39% response rate from one middle school. Information regarding the number of family members of subjects is given in Table 2.

Table 1. Distribution of subjects by class.*

Class	Number	Percent	Cumulative Percent
Grade 7	19	10.3	10.3
Grade 8	61	33.2	43.5
Freshman	22	12.0	55.5
Sophomore	19	10.3	65.8
Junior	43	23.4	89.2
Senior	<u>20</u>	<u>10.8</u>	100.0
Total	184	100.0	

*One subject failed to list a class standing.

Table 2. Family composition of subjects (N = 185).

Family Member in Household	Number of Subjects	Percent
Mother	166	89.7
Father	151	81.6
Older sister(s)	34	18.4
Older brother(s)	41	22.2
Younger sister(s)	44	23.8
Younger brother(s)	50	27.0
Grandmother	12	6.5
Grandfather	3	1.6
Other	18	9.7

The questionnaire used for the collection of data was a compilation of two previously used instruments. Slight modifications were made in each tool in order to make the final questionnaire more easily understood by all subjects. Examples of these changes are discussed later. No copyright is held on either tool.

Parts II and III of the questionnaire, which measured attitudes and behaviors regarding contraceptive use, were a modification of the Premarital Contraceptive Attitude Evaluation Instrument developed by Parcel (1975). Verbal permission to use this tool with modifications was given by Dr. Parcel to the researcher. The tool in previous use had a coefficient alpha of .91. In use with the sample in this study, the attitude section of the tool had a coefficient alpha of .86. The mean attitude score for high school students in Parcel's original study was 95. No modifications in the Likert scale portion of the tool were made. The behavioral section of the tool was modified to allow the researcher to calculate percentage of times birth was used rather than

relying on subjects to report a percentage themselves. It was felt this change would make the questionnaire easier to understand and complete, particularly for younger subjects.

The last section of the questionnaire, Part IV, is the Sex Knowledge Questionnaire, developed by Reichelt and Werley (1975). The tool has been used successfully with adolescents as young as age 13. Content validity has been established through review by health profession experts. The authors of the tool suggested reliability data be developed. Jack (1985) calculated a Cronbach's alpha of .79 in her use of the tool. Questions ($n = 4$) regarding the intrauterine device (IUD) were omitted because it is no longer available as an option to adolescents in family planning clinics and physicians no longer offer clients this option.

A copy of the entire questionnaire as used is presented in Appendix B. Part I asks for demographic information. Parts II and III are concerned with the subjects' attitudes and behaviors toward premarital contraceptive use. The attitudinal component consists of a 25-item, 5-point Likert scale with responses ranging from "strongly agree" to "strongly disagree." Part IV has 38 statements to which the subject responded true, false, or don't know.

Procedures

The researcher obtained permission to pursue the study from the University of Tennessee Human Subjects Committee (Appendix C), and the Loudon County (Appendix D) and Lenoir City (Appendix E) school boards. Letters of support for the study were written by a local pastor and two

concerned Loudon County physicians (Appendix F). Members of the school boards were given a brief written explanation of the study and given the opportunity to ask questions.

After permission was granted by the University of Tennessee and local school boards, consent forms were distributed to subjects by their teachers and/or principals and given to the researcher on the days of data collection. Days of data collection were mutually agreed upon by the researcher and principals.

Data were collected during a five-week period in April and May of 1987. Subjects who returned consent forms met in a single room at each school. The subjects were asked to leave space between themselves and their peers in the room and a brief explanation of the study and questionnaires was given. Emphasis was placed on the fact that the responses were anonymous and voluntary. Questionnaires were then distributed by the researcher and completed in an average of 20 minutes by the subjects who returned the completed tool, face-down, to the researcher. Teachers and/or principals were present during data collection in three of six schools to help monitor the subjects. The majority of subjects, interestingly, were very cooperative and quiet during data collection.

After all data were collected, the questionnaires were coded for data management purposes. The data were then entered into the VAX Cluster computer system at the University of Tennessee. Using the Statistical Analysis System (SAS) program, data were tested by t-tests, Pearson product moment tests, and frequency distributions. Results of these analyses are described and discussed in Chapter IV.

CHAPTER IV

RESULTS

This chapter presents the results of the study as analyzed by statistical procedures. Each hypothesis is stated and followed by information on statistical testing and results. Tables are included to illustrate the findings of this study.

Testing of the Hypotheses

As stated in Chapter III, this was a descriptive, nonexperimental study. The data were treated statistically as interval level and analyzed by parametric techniques to test hypotheses. In addition to independent samples t -tests, Pearson product moment correlations and frequency distributions were also used.

Data were analyzed using the Statistical Analysis System (SAS). A significance level of $p = .05$ was chosen for use with all statistical analyses. It was felt this level was appropriate given the nature of the study.

Hypotheses and Results

Hypothesis 1

Hypothesis 1 stated: Females will have significantly higher scores than males in the area of contraceptive knowledge. An independent samples t -test was used to test this hypothesis. The analysis revealed that in this sample females had higher scores on the

contraceptive knowledge portion and this was statistically significant at $p = .05$ level. Table 3 provides the results of this test for hypothesis 1.

Table 3. t-test procedure for gender differences in knowledge.

Gender	Number	Mean Correct	SD	Range	p
Male	64	16.4	6.5	3-33	.023
Female	121	18.8	6.9	3-34	

While females exhibited significantly greater number of correct answers, there was no statistically significant difference between males and females with regard to lack of information (i.e., "don't know" answers). Thirty-seven was the highest possible score for Part IV regarding contraceptive knowledge. Table 4 presents information about the number of questions answered "don't know."

Table 4. t-test procedure for gender differences of questions answered "don't know."

Gender	Number	Mean Don't Know	SD	Range	p
Male	64	14.7	7.9	0-32	.42
Female	121	13.8	7.2	0-32	

Neither males nor females scored highly on number of correct answers. Percentage of correct answers for males, computed from the

mean, was 43%. For females the percentage was 51. There is still much to be learned by these adolescents due to the fact that 40.5% of male and 38% of female answers were "don't know." These percentages clearly indicate a lack of information regarding contraceptive use and nonuse.

Age of subjects and knowledge about contraceptive use were analyzed by an independent samples t -test. Results were significant for number of answers right and wrong when the younger adolescents (ages 13-15) were compared to the older adolescents (ages 16-18). Table 5 reveals that younger adolescents answered fewer questions correctly and more questions incorrectly than older adolescents. No significant differences, however, were noted on the number of "don't know" answers.

Table 5. t -test procedure for age differences on questions answered right or wrong.

Age	Number	Mean Correct			Mean Incorrect		
		%	SD	p	%	SD	p
13-15	109	16.6	6.5	.0010	5.6	3.3	.0023
16-18	76	19.9	6.8		4.1	2.8	

Further analysis with regard to contraceptive knowledge was made by using a one-way ANOVA. A statistically significant difference ($p = .018$) in correct answers was noted between virgins and nonvirgins. Virgins answered a mean of 16.7 questions correctly compared to a mean of 19.3 correct answers for nonvirgins. The post hoc Tukey's

studentized range test revealed this difference to be significant at $p = .05$.

Finally, in response to the question, "I don't know as much as I would like to know about birth control," 115 subjects answered true. It is significant that 62.2% of this sample indicated they wanted to know more about contraceptives.

Hypothesis 2

Hypothesis 2 stated: There will be a significantly higher rate of contraceptive use among older adolescents (ages 16-18) as compared to younger adolescents (ages 13-15). An independent samples t -test was used to test this hypothesis. As Table 6 reveals, older adolescents used a method of birth control 7 out of 10 times in the last six months. Younger adolescents used a birth control method less than half the time for intercourse reported in the last six months. Certainly this analysis causes concern for younger adolescents with regard to pregnancy risk and subsequent complications.

Table 6. t -test procedure for percentage of contraceptive use in the past six months.

Age	Number	Mean	SD	Range	p
13-15	24	0.48	0.45	0-1.0	.0335
16-18	44	0.71	0.38	0-1.0	

Respondents were asked if they had ever participated in unprotected sexual intercourse in the past six months. Forty-nine subjects (58.6%) gave a positive response to this question: "In the past six months, have you sometimes had sexual intercourse without using any means of contraception?" The two most frequent reasons given for nonuse of contraceptives were (a) "Didn't expect to have sex when it happened" (41.9%) and (2) "I just didn't plan ahead of time" (16.3%).

Total percentage of adolescents ages 13 to 18 in this sample who used a method of contraception with first intercourse is much less than the present history of 63% of times a contraceptive was used in the last six months. For those adolescents who reported ever having had sexual intercourse ($n = 83$), only 41% used any birth control method with first intercourse. When the analysis is further divided into age at initiation of intercourse of 15 or less, the percentage of contraceptive use with first intercourse drops to 35%. In this sample, 83 subjects reported ever having had sexual intercourse; 63 of those were 15 or younger at first intercourse.

Finally, in discussing age, sexual activity, and contraception, an addendum is in order with regard to age at first intercourse. The mean age at initiation of intercourse for this sample was 14.1. Of the 83 subjects who had ever had intercourse, 14 were 12 years old or younger at first coitus. This result was disturbing because children 12 and younger have not been traditionally represented in the literature as having initiated coitus.

Hypothesis 3

Hypothesis 3 stated: There will be no significant correlation between attitudes and use of contraceptives. The Pearson product moment correlation was used to test this hypothesis. A moderately positive correlation was found between contraceptive attitudes and contraceptive use by adding the Pearson correlation ($r = .41$).

It would appear that with this sample, increasing positive attitudes would increase the percentage of contraceptive use. Further testing of this hypothesis was carried out by a one-way ANOVA comparing currently sexually active adolescents' attitudes and percentage of contraceptive use. A frequency distribution of this group was divided into three parts by percentages. The lower 30% of attitude scores was classified as negative, the middle 40% of attitude scores was classified as neutral, and the remaining upper 30% of attitude scores was classified as positive. Significant differences were noted between positive and negative groups and neutral and negative groups with regard to contraceptive use as tested by the Tukey's studentized range test. Table 7 provides a visual analysis of attitudes and birth control percent.

Table 7. Attitudes toward contraceptive use and percent who use birth control.

Attitude	Number	Birth Control Percentage
Negative	20	29.5
Neutral	27	80.2
Positive	21	72.7

Hypothesis 4

Hypothesis 4 stated: Most adolescents will have received the majority of their contraceptive knowledge from peers. A one-way frequency distribution was used to explore this hypothesis. Visual inspection of the results indicated that nearly twice as many adolescents received information about contraceptives from peers as compared to parents, the next most frequent source of contraceptive information. Table 8 reveals the actual sources of contraceptive information for this sample. Hypothesis 4 was accepted.

Table 8. Actual sources of contraceptive information.

Source	Frequency	Percentage
Parents	37	20.2
Friends	71	38.8
Sister/Brother	3	1.6
Church	0	0.0
Books/Magazines	30	16.4
Doctor	5	2.7
Nurse	3	1.6
Teacher/School	26	14.2
Other	8	4.4

The adolescents were then asked, "From which sources would you prefer to receive the most information about contraceptives? (choose only one)." Parents were the number one choice (35.1%), followed by friends (20%) and physicians (17.3%). Church was chosen only one-half of 1% as a preferred choice and not reported at all as an actual source.

Hypothesis 5

Hypothesis 5 stated: There will be no difference in the use of contraceptives among previously pregnant adolescents and never pregnant adolescents. The researcher was unable to answer questions regarding this hypothesis. Only three subjects reported ever having been pregnant at the time of the study.

Hypothesis 6

Hypothesis 6 stated: Males will have significantly less positive attitudes about contraceptive use than females. Again, an independent samples t -test was used to compare mean attitude scores for males and females. Attitudes regarding contraceptive use were not statistically different between male and females. Hypothesis 6 was rejected. Attitudes did differ, however, between younger and older adolescents. Older adolescents had significantly more positive attitudes toward contraceptive use as Table 9 reveals.

Table 9. t -test procedure for age differences in attitudes toward contraceptive use.

Age	Number	Mean Attitude	SD	Range	p
13-15	109	90.14	11.9	47-113	.0049
16-18	76	95.67	14.5	50-122	

The first four research hypotheses of this study were tested and accepted. Research hypothesis 5 could not be answered due to the lack of subjects who reported having ever been pregnant. Research

hypothesis 6 was rejected since no statistically significant difference in attitudes was found to exist between males and females in this sample. Chapter V will discuss the results of this study and present recommendations for future study.

CHAPTER V

DISCUSSION

This study had as its purpose to accurately describe current attitudes, behaviors, and knowledge regarding contraceptive use among teenagers in Loudon County, Tennessee. Much has been learned about a select group from this population. Some results are consistent with national data while other results are conflicting. This chapter will discuss the findings of this study, list limitations, and make recommendations for future study.

Testing of hypothesis 1 found that females did indeed answer more questions correctly than their male peers. These findings are consistent with all major studies done on the topic of contraceptive knowledge (Byrne & Fisher, 1983; Davis & Harris, 1982; Freeman et al., 1980).

Possible reasons for increased knowledge among females have been suggested (Davis & Harris, 1982). Females are the recipient of pregnancy, planned or unplanned. They may, because of this fact, be more knowledgeable about contraceptives. In our society contraception traditionally has been the task of the female, evidenced by practically all methods being designed for females. Males may assume that contraceptive knowledge is "girl stuff" (Freeman et al., 1980).

It is significant to note, however, that even though females answered more questions correctly than did males, neither gender scored extremely high: 43% for males and 51% for females. The 40.5% and 38%

of questions answered "don't know" for males and females, respectively, indicates a need for further education. This sample was indicating their lack of information about contraceptives by giving a "don't know" response. A wrong answer would indicate misinformation. The subjects under study were not grossly misinformed; they were simply lacking in information.

Kantner and Zelnik (1972) along with Eisen and Zellman (1986) stated that sexually active adolescents fared no better on contraceptive knowledge tests than virgins. The present study found that nonvirgins knew significantly more about contraceptives than did virgins. Possible reasons for this finding are (a) virgins feel they do not need to know about something they do not need to use and (b) nonvirgins are becoming more aware of their need for protection against pregnancy.

Perhaps the least surprising but most disconcerting finding associated with hypothesis 1 was that younger adolescents knew much less than older adolescents ($p = .001$). This finding supports results reported by Davis and Harris in their 1982 study. Given that 76% of the current sample began having sexual intercourse at age 15 or younger, the need for younger adolescents to know about contraceptives is readily apparent. Pregnancy risks and maternal/fetal complications are inversely related to age until after age 35. Age is no sure predictor of fecundity; pregnancies have occurred before menses in some cases (Reeder, Mastroianni, & Martin, 1980). It is imperative that younger adolescents be given more information about contraceptives in the hope of decreasing their pregnancy risk.

Testing of hypothesis 2 revealed that older adolescents were more effective contraceptors than younger adolescents. The reasons for nonuse, as given by the subjects, were related to the sporadic and spontaneous nature of adolescent sexual intercourse. The problem of nonuse of contraceptives is multidimensional, involving attitudes, knowledge, and physical and psychological capability (Kisker, 1985; Miller, 1986; Zelnik & Kantner, 1979). McCormick, Izzo, and Folcik (1985) proposed low frequency of coitus as a reason for nonuse of contraceptives. Their sample showed a mean frequency of coitus of two times per month which was similar to the sample in the current study where frequency of coitus was 6.6 per last six months (disregarding respondents whose reported frequency was greater than 25).

The problem with nonuse of contraceptives can be life-threatening for mother and fetus, as mentioned earlier. This sample was no different from others with regard to contraceptive use among younger adolescents (Zelnik & Shah, 1983). An effective way to encourage young teenagers to use birth control must be found.

Use of a contraceptive method with first intercourse in this sample corresponds to data reported by Zelnik and Shah (1983). In their study only 31% of females and 34% of males aged 15 or younger used a contraceptive method with first intercourse. The present study found 35% of subjects who began coitus at age 15 or younger used a contraceptive method with first intercourse. The younger the adolescent at first intercourse, the more likely that intercourse will be unprotected. The mean age at first intercourse in this sample was

14.1, much younger than the optimal age for first pregnancy with regard to age-related pregnancy problems (Bobak, 1987).

The testing of hypothesis 2 confirmed a major problem among adolescents with regard to age and contraceptive use. The age category (13-15) that is in the most need of effective contraception is the group that uses it least. Zabin, Kantner, and Zelnik (1979) stated the scope of the problem this way:

Because of early age at initiation of intercourse and associated non-use of contraception, half of first premarital pregnancies to teens occur in the first six months after they begin coitus; one-fifth occur in the first month. Programs to prevent adolescent pregnancy will not succeed unless they reach young people before they begin sexual activity. (p. 215)

Paths to reverse this trend must be explored. The facts merely confirm our knowledge.

Many authors have indicated that adolescent attitudes and behavior toward contraceptive use are inconsistent (Freeman et al., 1980; McCormick et al., 1985; Sheehan, Ostwald, & Rothenberger, 1986; Zabin et al., 1984). The rejection of hypothesis 3 in this study contradicts these findings. In this sample of teenagers, attitudes did seem to make a difference in their behavior.

Of those students who were sexually active in the past six months ($n = 68$), attitudes toward contraceptives were mirrored in their behavior. Those students with negative attitudes used contraceptives only 29.5% of the times they had intercourse. In contrast, those with positive attitudes used birth control 72.7% of the time. These findings have significant implications for sex education. It would

seem beneficial, with this sample at least, to assist students to gain more positive attitudes toward contraceptives in an attempt to increase their use.

In line with earlier findings about younger adolescents was the discovery that those teenagers aged 13 to 15 had significantly less positive attitudes than older teenagers ($p = .005$). Younger adolescents perceived the risks of birth control to outweigh the benefits. Contraceptives are too difficult, embarrassing, or risky to benefit this group according to their answers. Of course, if the attitudes in this sample are consistent with behavior, a negative attitude precedes nonuse in the age group needing the most protection.

The accolades of sex education have been mentioned (Darabi et al., 1982; Darden, 1981; Jenkins, 1981; Muraskin, 1986; Schaffer, 1981), yet, in this sample, formal sex education played a minor role as an information source for these adolescents (14.2%). Peers were the major source of information, a fact noted by Davis and Harris (1981). One can only speculate about the accuracy of contraceptive information given by peers. While this sample answered few contraceptive knowledge questions incorrectly, it revealed large information gaps by the large numbers of questions answered "don't know," as previously discussed.

When asked about their preference of sexual and contraceptive information sources, 35.1% of subjects chose their parents. This answer was somewhat surprising to the researcher. Parents seem to be perceived by this group as the preferred authorities and teachers of contraceptive knowledge. Newcomer and Udry (1985) found that females whose mothers talked with them about sex were less likely to initiate

coitus. Certainly, health professionals have opportunities and responsibilities to foster sharing of knowledge in the family unit.

Friends (20%) and physicians (17.3%) were the second and third preferred sources of contraceptive information in this sample. The combination of parents, friends, and physicians allows for diversity in the providing of contraceptive information. The data suggest that for this sample a combination of programs for parental support, peer "rap sessions," and medical and/or nursing guest lectures in the community would increase knowledge about contraceptive use.

Unfortunately, hypothesis 5 could not be tested since only three subjects reported ever being pregnant. The lack of females who had ever been pregnant may be viewed in one of two ways. First, many girls who become pregnant while enrolled in school subsequently drop out and would not have been in school at the time of data collection. Second, and more encouraging, is the possibility that the pregnancy rate among this group continued to decrease, making fewer pregnant females available for study.

Finally, in discussing hypotheses testing, the rejection of hypothesis 6 is interesting. Some researchers (Freeman et al., 1980; Sheehan et al., 1986) indicated males had less positive attitudes toward contraception than females. In this sample, however, no difference was found between males and females with regard to their attitudes toward contraceptive use. The only difference in attitudes was mentioned earlier between younger and older adolescents.

This sample revealed no differences in contraceptive attitudes between males and females regardless of their sexual activity status.

Contraceptive use was equally important; an encouraging fact in light of the positive correlation between attitudes and behaviors in this group.

In summary, this sample of adolescents was comparable to other national samples in the areas of contraceptive knowledge and behavior. There were differences noted between this sample and others with regard to attitudes and behavior correlations. While this was not a probability sample, approximately 8% of the total public school population in Loudon County middle and high schools was represented. Therefore, it is felt that these results are useful preliminary indicators for the target population.

Limitations

The results of this study must be interpreted carefully. While the findings supported some previous research and contradicted others, some weaknesses in methodology must be noted. It is important to consider limitations when evaluating statistical analyses of hypotheses regarding this sample.

First, care must be taken not to generalize the results to other populations. The sample was one of convenience; those who agreed to participate in the study with their parents' permissions. There was no feasible or ethical way to obtain a random sample of the population. As mentioned previously, however, the sample did represent 8% of the population of adolescents in Loudon County public schools, yet no assurance can be made regarding representation of the population as a whole in this sample.

Another issue related to the generalizability of results was that school representation was unequal. The most rural middle school chose not to participate in the study. Another middle school had less than 2% of its students complete questionnaires. These uneven percentages of participants decrease the generalizability of results in those schools with low participation.

A major limitation of the study was the inability to test hypothesis 5 regarding previously pregnant girls. It was hoped that trends in contraceptive use among females who had been pregnant would have been found. It was unfortunate this hypothesis could not be explored.

Another bothersome limitation of the study was the fact that only 37% of this sample was currently sexually active. The percentage, while encouraging from the standpoint of adolescents at risk for pregnancy, was somewhat small to glean extensive information on currently sexually active teenagers. Care must be taken in interpreting results obtained from 68 individuals.

Lastly, while the questionnaire was formed from previously used tools, pilot studies were not conducted prior to its administration. There is a possibility that a more reliable and valid tool could be developed for use with this population.

Conclusions

Much research has concentrated on adolescents and their contraceptive behavior and knowledge. Some of these studies have evaluated contraceptive and sexual attitudes as well. The findings of

the present study are supportive of some studies and contradictory to others.

The study supports the observations of previous researchers with regard to developmental tasks. Older adolescents demonstrated more knowledge, more positive attitudes, and more consistent use of contraceptives than their younger counterparts. It is the author's belief that these age differences represent an inability to fully master the developmental requisites that sexual activity would create.

Attitudes may be stronger markers for behavior among this sample than earlier studies would indicate. The concept of the imaginary audience may influence this finding. The adolescent's behavior is influenced by the anticipated response of the audience. If the adolescent perceives the attitude of his or her audience to be supportive of contraceptive use, he or she may be more likely to use a contraceptive method.

Adolescent sexual activity is beginning at earlier ages. Reasons for this must be explored in an attempt to influence responsible behavior. Physical, psychological, and emotional dangers of early initiation of intercourse are becoming more apparent as more research is conducted. This sample is at risk for these dangers.

The following conclusions are presented on the basis of the present research findings.

1. Older adolescents have more knowledge, positive attitudes, and consistent use of contraceptives than younger adolescents.
2. Females are most knowledgeable of contraceptive methods than are males.

3. Attitudes can have a significant effect on behavior with regard to contraceptive use.

4. Attitudes toward contraceptive use show no significant gender differences.

Suggestions for Future Study

After reviewing the results of this research, several recommendations and implications for future study can be made. The recommendations point to education as being an important preventive variable. Implications for future study involve more extensive investigation of variables associated with contraceptive use. The recommendations and implications are as follows:

1. Increase educational efforts regarding sexuality and contraceptives at early adolescence and include parents and medical and/or nursing personnel in the planning.

2. Explore programs to promote a decrease in sexual activity among younger adolescents in particular, due to the fact that this group has a poor history of contraceptive use.

3. Use developmental theory to develop programs of sex education. Adolescents need to be assisted to realize pregnancy can happen to them.

4. Utilize adolescents as teachers to their peers. This approach may help to decrease the personal fable among teenagers.

5. Conduct research in the area of contraceptive attitudes and their correlation with contraceptive behavior.

6. Males need to be involved in future studies in greater numbers.

7. Conduct additional research to pinpoint the most salient features of contraceptive behavior.

8. Conduct in depth interview studies to explore reasons for nonuse of contraceptives.

This study confirmed the need for a developmental approach to the understanding of adolescent contraceptive behavior. Nursing has a responsibility to adolescents as individuals and as a group to assist them in meeting developmental self-care. It is important that nurses find ways to foster growth during the turbulent years of adolescence. Protecting and promoting sexual health and responsibility is a task which is oriented toward future health childbearing.

In conclusion, it is hoped that a greater understanding of a select population has been gained. With this knowledge, the researcher hopes that continued improvements in adolescent health care can be made. Encouragement is given to parents, health care professionals, educators, and adolescents themselves in the developmental journey toward self-care.

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APPENDICES

APPENDIX A

LETTER OF CONSENT

Dear Parent and Student:

You are invited to allow your son or daughter to participate in a research study which is a part of a nursing master's thesis. The purpose of the study is to discover the current level of knowledge, attitudes, and behaviors toward contraceptives (birth control) among teens in Loudon County.

Participation will involve completion of a questionnaire that will measure knowledge, attitudes, and behavior regarding contraception. The questionnaire is expected to take about thirty (30) minutes or less to complete and will be taken in homerooms.

No negative effects are expected to result from participation in the study. While no positive effects are guaranteed, insight may be provided regarding ways to help reduce the incidence of teen pregnancy in Loudon County.

ALL DATA WILL BE OBTAINED ANONYMOUSLY! The researcher will in NO WAY be able to identify individual responses. The data consent forms will be stored separately from the questionnaires in a locked filing cabinet in the researcher's home.

Participation in the study is entirely VOLUNTARY and consent may be withdrawn at any time by the participant.

I have read and understand the above statements. I give my consent to allow my son or daughter to participate in this study under the above conditions.

Parent _____

I have read and understand the above statements. I agree to participate in this study under the above conditions

Student _____

If you would like to receive a copy of the final findings of this study, please give you address below. Results are expected to be completed by December, 1987.

Thank you.

Ramona G. Scott, RN
UTK Master's Candidate
588-5205

APPENDIX B

QUESTIONNAIRE

PART I

Please answer the following questions by checking the appropriate space or filling the blank.

1. What is your age? _____
2. What is your race?
 - ____ 1. White
 - ____ 2. Black
 - ____ 3. Oriental
 - ____ 4. American Indian
 - ____ 5. Mexican-American
 - ____ 6. Other
3. What is your class standing?
 - ____ 1. Eighth grade
 - ____ 2. Freshman
 - ____ 3. Sophomore
 - ____ 4. Junior
 - ____ 5. Senior
4. What is your marital status?
 - ____ 1. Never-married
 - ____ 2. Married
 - ____ 3. Separated or divorced
5. What is your gender?
 - ____ 1. Male
 - ____ 2. Female
6. For females: Have you ever been pregnant?
 - ____ 1. No
 - ____ 2. Yes, and I had the baby
 - ____ 3. Yes, but I had an abortion
 - ____ 4. Yes, but I had a miscarriage or stillbirth
7. For males and females: From which source have you received the most information about contraceptives (birth control)?
(Choose only ONE)
 - ____ 1. Parents
 - ____ 2. Friends around my age
 - ____ 3. Sister or brother
 - ____ 4. Church
 - ____ 5. Books, magazines
 - ____ 6. Doctor
 - ____ 7. Nurse
 - ____ 8. Teacher, school
 - ____ 9. Other, Please specify _____

8. From which sources would you prefer to receive the most information about contraceptives? (Choose only ONE)
- ☐ 1. Parents
 - ☐ 2. Friends around my age
 - ☐ 3. Sister or brother
 - ☐ 4. Church
 - ☐ 5. Books, magazines
 - ☐ 6. Doctor
 - ☐ 7. Nurse
 - ☐ 8. Teacher, school
 - ☐ 9. Other, please specify _____
9. On the average, how many times per month do you attend church?
10. From the list below, check the members of your family with which you live.
- ☐ 1. Mother
 - ☐ 2. Father
 - ☐ 3. Older sister, how many? _____
 - ☐ 4. Older brother, how many? _____
 - ☐ 5. Younger sister, how many? _____
 - ☐ 6. Younger brother, how many? _____
 - ☐ 7. Grandmother
 - ☐ 8. Grandfather
 - ☐ 9. Other, please list _____

PART II

Directions: The following statements are meant to explore some of your feelings toward the use of contraceptives (means of preventing pregnancy). It is not meant to test what you know. Read each item carefully and circle the corresponding number of the option which best expresses your feeling about the statement. For each statement, use the following code.

1. STRONGLY AGREE 2. AGREE 3. UNCERTAIN 4. DISAGREE 5. STRONGLY DISAGREE

-
- | | |
|---|-----------|
| 1. It is important to me to plan ahead of time for contraception in the event a relationship leads to sexual intercourse (having sex). | 1 2 3 4 5 |
| 2. The use of contraceptives outside of marriage cannot be justified (right). | 1 2 3 4 5 |
| 3. The use of contraception should be an accepted practice for non-marital sexual relations. | 1 2 3 4 5 |
| 4. Abstinence (not doing) from premarital sex is preferable to artificial methods of contraception. | 1 2 3 4 5 |
| 5. Any form of contraception which will aid in the achievement of a fuller sexual relationship should be used and encouraged. | 1 2 3 4 5 |
| 6. Contraception is just too much trouble to bother with in non-marital sexual relations. | 1 2 3 4 5 |
| 7. The risks of using artificial methods of contraception are worth the benefits they provide. | 1 2 3 4 5 |
| 8. The use of contraception distracts from the quality of the relationship. | 1 2 3 4 5 |
| 9. There is nothing wrong religiously or morally with the use of contraception. | 1 2 3 4 5 |
| 10. The use of any contraceptive that interferes with natural body functions is unacceptable | 1 2 3 4 5 |
| 11. I consider learning how to use and knowing where to obtain methods of contraception an important part of responsible sexual behavior. | 1 2 3 4 5 |
| 12. How anyone not married can use contraceptive is beyond me. | 1 2 3 4 5 |
| 13. Effective contraception is essential to achieving sexual freedom. | 1 2 3 4 5 |

1. STRONGLY AGREE 2. AGREE 3. UNCERTAIN 4. DISAGREE 5. STRONGLY DISAGREE

- | | |
|--|-----------|
| 14. I feel that it would be wrong for me to make plans ahead of time to use a contraceptives | 1 2 3 4 5 |
| 15. Anyway you look at it, it is right to use some form of contraception in non-marital sexual relations. | 1 2 3 4 5 |
| 16. The use of contraception makes sexual intercourse seem dirty. | 1 2 3 4 5 |
| 17. The results from using contraception are good. | 1 2 3 4 5 |
| 18. I would rather risk pregnancy than use an artificial method of contraception. | 1 2 3 4 5 |
| 19. Using a contraceptive to prevent unwanted pregnancy is a good thing to do. | 1 2 3 4 5 |
| 20. Physical and psychological dangers would keep me from using any form of artificial contraception. | 1 2 3 4 5 |
| 21. Contraception is a positive aspect of sexual relations. | 1 2 3 4 5 |
| 22. I would reject the use of contraception on the basis that it disrupts the spontaniety (spur of the moment) of sexual behavior. | 1 2 3 4 5 |
| 23. I would feel guilty going into a drugstore and buying contraceptives. | 1 2 3 4 5 |
| 24. I would not make prior plans for using contraceptives because that would mean I was planning on having sex. | 1 2 3 4 5 |
| 25. I believe all means of contraception should be available to anyone who wants them. | 1 2 3 4 5 |

PART III

The purpose of this part of the survey is to determine how often you or your partner have used any of the various methods of contraception (birth control). To help in understanding birth control practices, it is important to ask some personal questions about your sexual behavior. Please answer these questions as honestly and completely as you can. Remember, all answers are anonymous and no names will ever appear on these forms. (Note: Sexual intercourse refers to male-female intercourse; having sex)

1. How old were you when you first had sexual intercourse?

1. _____ years old.

2. _____ I have never experienced sexual intercourse.

NOTE: If you have never experienced sexual intercourse,
STOP HERE for this section. Go on to PART IV.

If you have experienced sexual intercourse, please
CONTINUE with this section, then go to PART IV.

2. Did you or your partner use any method of contraception the first time you had sexual intercourse?

1. _____ No

2. _____ Yes

3. If yes to number 2, indicate the method you used the first time you had sexual intercourse. (Check only one.)

1. _____ Birth control pill

2. _____ IUD (intrauterine device)

3. _____ Condom (rubber)

4. _____ Spermicidal foam

5. _____ Spermicidal cream or jelly

6. _____ Diaphragm

7. _____ Diaphragm with foam/cream/jelly

8. _____ Condom with foam/cream/jelly

9. _____ Rhythm method

10. _____ Withdrawal (coitus interruptus)

11. _____ Other (Please specify) _____

4. With how many partners have you had sexual intercourse in the past 6 months.
_____ partners

5. In the past 6 months (not including the first time you had intercourse), have you sometimes had sexual intercourse without using any means of contraception?

1. _____ Yes

2. _____ No.

6. If yes to number 5, indicate the major reason for not using birth control.
- ☐ 1. It is against my religious beliefs to use birth control.
 - ☐ 2. I didn't know where to get birth control.
 - ☐ 3. I didn't know enough about birth control.
 - ☐ 4. I left it up to my partner.
 - ☐ 5. I just didn't plan ahead of time
 - ☐ 6. Intercourse was during periods of time when I felt safe.
 - ☐ 7. Didn't expect to have sex when it happened.
 - ☐ 8. Didn't want to appear overly prepared.
 - ☐ 9. Sex should be spontaneous (just happen).
 - ☐ 10. Too embarrassed to get birth control.
 - ☐ 11. Other (please specify) _____
7. From the above list, what is the second major reason?
Reason number _____ Other _____
8. What is the total number of times you have had sexual intercourse in the past 6 months? (please estimate)
_____ times
9. Of the times listed in number 8 above, how many times did you use some type of birth control? (please estimate)
_____ times
10. In the list below, please check the method of birth control you most often use. If you or your partner use more than one method, please give the approximate times each method was used in the last six months.
- | | |
|---|-------------|
| 1. Birth control pill | _____ times |
| 2. IUD (intrauterine device) | _____ times |
| 3. Condom (rubber) | _____ times |
| 4. Sperm-killing foam | _____ times |
| 5. Sperm-killing cream or jelly | _____ times |
| 6. Diaphragm | _____ times |
| 7. Diaphragm with foam/cream/jelly | _____ times |
| 8. Condom with foam/cream/jelly | _____ times |
| 9. Withdrawal (pulling out) | _____ times |
| 10. Rhythm method | _____ times |
| 11. Didn't know if partner used any birth control | _____ times |
| 12. Other _____ | _____ times |
| 13. Nothing | _____ times |

PART IV

The following are all statements concerning human sexuality. For EACH statement answer TRUE or FALSE or DON'T KNOW by circling the T or F or DK in front of the statement.

-
- T F DK I don't know as much as I would like to know about birth control.
- T F DK Rhythm is a highly effective method of birth control.
- T F DK A girl can get pregnant the first time she has intercourse.
(makes love)
- T F DK Douching after intercourse is a highly effective birth control method.
- T F DK Sperm can live in the female's reproductive system for about 72 hours (3 days).
- T F DK Oral-genital sex (mouth-sex organ contact) is a common practice.
- T F DK If a woman does not have an orgasm (climax) during intercourse, she can't get pregnant.
- T F DK Withdrawal (pulling out) is a high effective method of birth control.
- T F DK Swallowing sperm can make a woman pregnant.

Sexually Transmitted Diseases (STD) or Venereal Disease (VD)

- T F DK Many cases of VD are caught by contact with toilet seats, drinking fountains, and swimming pools.
- T F DK If the symptoms of VD disappear by themselves, no treatment is needed.
- T F DK Once you've had VD, you can't get it again.
- T F DK VD is not really dangerous to your health.
- T F DK Minors can be treated for VD in Tennessee without permission from their parents.

Menstruation (monthly period)

- T F DK Menstruation is a clearing of the uterus (womb) to prepare again for possible pregnancy.
- T F DK A woman's fertile time (when she is most likely to get pregnant) covers the middle of the interval between her menstrual periods.

The Birth Control Pill

- T F DK The pill must be stopped every year for three months.

- T F DK The pill is generally dangerous to use.
- T F DK The pill may be taken along with other medications without decreasing its effectiveness.
- T F DK The pill may be taken by a girl who uses alcohol and/or drugs.
- T F DK The pill may not be taken if the woman has a history of certain illnesses.
- T F DK The pill is the most effective method of birth control

The Diaphragm

- T F DK The diaphragm must be worn at all times.
- T F DK A diaphragm should be used only after having been fitted for it by a doctor or nurse practitioner.
- T F DK The effectiveness of the diaphragm is increased when used with a cream or jelly.
- T F DK The diaphragm cannot be felt by either the man or woman when properly in place.

The Condom (rubber)

- T F DK Using a condom can help prevent the spread of venereal disease.
- T F DK A condom should be tested before use.
- T F DK Condoms break easily.
- T F DK The condom should be held around the base of the man's penis when withdrawn.

Foams, Creams and Jellies

- T F DK They should be inserted just before each intercourse.
- T F DK They work by killing sperm.
- T F DK They can be bought without a prescription in any drug store.
- T F DK When used with a condom, they are a highly effective birth control method.
- T F DK They should be washed out with a douche immediately after intercourse.

Abortion

- T F DK An abortion can be done safely and easily by a doctor during the first 12 weeks of pregnancy.
- T F DK Having an abortion will make the woman sterile (unable to have children in the future).
- T F DK Anyone can tell if a girl has had an abortion.

APPENDIX C

LETTER OF PERMISSION

THE UNIVERSITY OF TENNESSEE
KNOXVILLE



Office of
Research
Compliance

April 8, 1987

Ramona G. Scott, RN
3100 Lake Brook Blvd., Apt. 219
Knoxville, TN 37909

Dr. Patricia Droppleman
College of Nursing
CAMPUS

Dear Ms. Scott and Dr. Droppleman:

As Chairperson of the Committee on Research Participation I have reviewed your project, "Attitudes, Behavior, and Knowledge Regarding Contraceptive Use Among Teens in Loudon County, Tennessee," CRP #2346. The project qualified for expedited review and has been approved.

This approval is for a period ending April 9, 1988. Please make timely submission of renewal or prompt notification of project termination (see item #3 below).

Responsibilities of the investigator during the conduct of this project include the following:

1. Obtain prior approval from the Committee before instituting any changes in the project.
2. Retain signed consent forms from subjects for at least three years following completion of the project.
3. Submit a Form D to report termination, to renew approval, or to report changes in the project at 12-month or less intervals.

The Committee wishes you every success in your research endeavor.

Sincerely,


L. B. CeBik, Chair
Committee on Research Participation

cc: Dr. Thomas C. Collins, Vice Provost for Research
Dr. Sylvia E. Hart
Dr. Maureen Groer

404 Andy Holt Tower / Knoxville, Tennessee 37996-0140 / (615) 974-7697

APPENDIX D

LETTER OF PERMISSION, LOUDON COUNTY BOARD OF EDUCATION

Loudon County Board of Education

A. EDWARD HEADLEE, SUPERINTENDENT

P. O. DRAWER D

LOUDON, TENNESSEE 37774

PHONE 615-458-5411

BOARD OF EDUCATION

Paul H. Rogers, Chairman
David A. Cole
Felix R. Daniels
Charles M. Giles



BOARD OF EDUCATION

Joe L. Malone, Vice Chm.
Bob S. Smith
Leroy Tate
Fredella E. Walker
Chester W. Watts

April 24, 1987

Ms. Ramona Scott
3100 Lake Brook Boulevard
Apt # 219
Knoxville, TN 37909

RE: Teenage Pregnancy Survey

Dear Ms. Scott:

At their regular meeting in March, 1987 the Loudon County Board of Education gave unanimous approval to your request to conduct a survey in the Loudon County School System dealing with the problem of the rising teenage pregnancy situation in our area. This approval will give you admission to any county schools that you need in order to conduct your research. We look forward to the results of your findings.

Respectfully yours,


A. Edward Headlee

Superintendent

An Equal Opportunity Employer

APPENDIX E

LETTER OF PERMISSION, LENOIR CITY SCHOOLS

Lenoir City Schools

104 A STREET
P. O. BOX 469
LENOIR CITY, TENNESSEE 37771
(615) 986-8058

April 10, 1987

Ms. Ramona Scott
3100 Lake Brook Blvd., Apt. 219
Knoxville, Tennessee 37919

Dear Ramona,

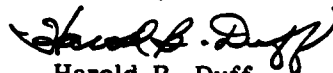
The Lenoir City Board of Education meeting in regular session on April 9, 1987, approved your request to conduct a survey using selected students, with parental consent, in the Lenoir City School System.

It is our understanding a random selection of students from the Homerooms will be made in grades eight through twelve, on the premises of the Lenoir City Schools'.

We look forward to your sharing the results of the survey with the Lenoir City Board of Education. If we may be of further assistance in this matter, please contact us.

Good Luck!

Sincerely,


Harold B. Duff,
Superintendent

HBD/bke

APPENDIX F

LETTERS OF SUPPORT

PLEASANT HILL BAPTIST CHURCH

ROUTE 1

LENOIR CITY, TENN. 37771

March 19, 1987

Dear Board Members,

I am writing to verify my knowledge of and approval of Ramona Scott's proposed survey in our local schools. Ramona is a Registered Nurse employed by Fort Sanders Hospital in Knoxville, and a member of Pleasant Hill Baptist Church, Eaton's Crossroads, where her husband is on the staff. This project, which has the endorsement of local physicians, will form the basis of a thesis she will write as part of the requirements for a Master's Degree at The University of Tennessee.

In addition, the information gained from this survey could be valuable in another way. The Loudon County Ministerial Association is currently investigating the need and the possibility of a Crisis Pregnancy Center for Loudon County. Statistics from Mrs. Scott's survey could help determine the extent of need for such a center. Since Federal funding is available for a C.P.C. when sufficient need is shown, the results from her project could be very helpful in procuring government assistance.

I can assure you that if permission is granted for the carrying out of this survey, it will be done according to the highest ethical standards, with utmost respect for the individuals involved. Any assistance you may give Mrs. Scott will be greatly appreciated.

Sincerely,

Glenn Gamble
Glenn Gamble, Pastor
Pleasant Hill
Baptist Church

Loudon Pediatric Clinic
James P. (Bud) Guider, M.D., F.A.A.P.

Infants
Children
Adolescents



804 Mulberry Street
Loudon, Tenn. 37774
Telephone 458-5666

March 19, 1987

Loudon County School Board
Drawer D
Loudon, Tennessee 37774

RE: Research proposal by Ramona G. Scott, R.N.

Dear Members:

I am extremely concerned about the problem of teenage pregnancy in Loudon County. I feel that it is very important to address this problem.

Ramona G. Scott has discussed her concerns as well and as part of a masters research program has proposed a study to explore in detail attitudes toward contraception in Loudon County teenagers. I feel this is an excellent way to evaluate one aspect of the teenage pregnancy problem.

I would urge you to allow Mrs. Scott to pursue her research proposal. However, I would also urge the members of the Loudon County School Board to explore other avenues and techniques of sex education in the Loudon County School System so that we might decrease the percentage of teenage pregnancies.

If I can be of any help, please let me know.

Sincerely,

A handwritten signature in cursive script, appearing to read "Bud Guider".

James P.(Bud) Guider, M.D.

JPG/jcl

ARUN D. DEEAN, M.D.

OBSTETRICS AND GYNECOLOGY
LOUDON MEDICAL ARTS BUILDING
111 CLYDE STREET
LOUDON, TENNESSEE 37774
—
TELEPHONE - (615) 458-5418

March 17, 1987

Loudon County Board of Education
River Road
Loudon, Tennessee 37774

Re: Ramona Scott, R.N.

Dear Sir:

I am writing to you regarding Ms. Ramona Scott's proposal to perform a study regarding the level of knowledge, attitude and behavior towards contraception among our teenagers in Loudon County.

I believe this to be a very appropriate and a timely subject to be studied in our community since we have the highest teen pregnancy rate in the state.

I recommend and hope that Ms. Scott be allowed to conduct the survey in our school systems.

Sincerely,

Arun Deean

Arun D. Deean, M.D.

ADD:pdm

ARUN D. DEEAN, M.D.

OBSTETRICS AND GYNECOLOGY
LOUDON MEDICAL ARTS BUILDING
111 CLYDE STREET
LOUDON, TENNESSEE 37774
TELEPHONE - (615) 458-5418

March 17, 1987

Lenoir City School Board
104 "A" Street
Lenoir City, Tennessee 37771

Re: Ramona Scott, R.N.

Dear Sir:

I am writing to you regarding Ms. Ramona Scott's proposal to perform a study regarding the level of knowledge, attitude and behavior towards contraception among our teenagers in Loudon County.

I believe this to be a very appropriate and a timely subject to be studied in our community since we have the highest teen pregnancy rate in the state.

I recommend and hope that Ms. Scott be allowed to conduct the survey in our school systems.

Sincerely,

Arun Deean

Arun D. Deean, M.D.

ADD:pdm

VITA

Ramona Galyon Scott was born in Sweetwater, Tennessee, on December 12, 1960. She graduated from local elementary and secondary schools. Her Bachelor of Science degree in nursing was granted from Tennessee Technological University in 1983.

Mrs. Scott married her husband Robin in August 1983 and moved to Louisville, Kentucky, so that her husband could pursue a Christian Education degree from The Southern Baptist Theological Seminary. While in Louisville Mrs. Scott worked in medical oncology, intensive/coronary care, and labor and delivery. She and her husband then moved to Knoxville, Tennessee, so Mrs. Scott could begin study toward a Master's degree in nursing.

While enrolled in the maternal and child nursing tract of the Master's program, Mrs. Scott was employed by Fort Sanders Regional Medical Center as a post partum staff nurse. The Master of Science degree in nursing was award to Mrs. Scott on December 11, 1987. She is a member of Sigma Theta Tau, the national nursing honor society.