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THE RELATIONSHIP BETWEEN LOCUS OF CONTROL
AND UNINTENDED TEENAGE PREGNANCY

A Thesis
Presented for the
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ABSTRACT

The purpose of this study was to determine if there was a relationship between locus of control and unintended teenage pregnancy. Two groups of teenage girls, pregnant and nulliparous were compared. The final sample consisted of sixty adolescents (30 nulliparous, 30 pregnant), ages 13-18. All subjects were white and low income (family income less than \$10,000/year).

Rotter's Internal-External Scale was used to measure locus of control of the two groups of teenagers. A questionnaire developed by the researcher assessed sociodemographic characteristics.

Analysis of Variance was applied to the data to inspect the differences between groups. There were significant differences between the groups in relation to locus of control and age. Pregnant adolescents were older and more likely to hold external locus of control beliefs than nulliparous adolescents. There was no significant interaction between locus of control and age.

Implications for future research and for nursing interventions to alter locus of control were discussed. Prospective studies may help to identify the teenager at risk for unintended pregnancy.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION.	1
Purpose of the Study.	2
Problem Statement	2
Theoretical Framework	3
Nominal Definitions	12
Assumptions	12
Research Questions.	13
Summary	13
II. REVIEW OF LITERATURE.	14
Locus of Control.	14
Adolescence	19
Summary	32
III. METHODOLOGY	34
Research Design	34
Research Questions.	34
Subjects.	35
Instruments	36
Operational Definitions	37
Data Collection	37
Analysis.	39
Summary	40
IV. RESULTS	41
Descriptive Statistics for the Nulliparous Subjects	41
Descriptive Statistics for the Pregnant Subjects.	43
Locus of Control and Age.	43
Summary	48
V. CONCLUSIONS AND IMPLICATIONS.	49
Limitations of the Study.	50
Comparison to Similar Investigations.	51
Implications for Nursing Interventions.	52
Implications for Future Research.	54
Summary	55
REFERENCES.	57

CHAPTER	PAGE
APPENDIXES.	63
Appendix A.	64
Appendix B.	65
Appendix C.	66
Appendix D.	67
Appendix E.	69
Appendix F.	70
Appendix G.	71
Appendix H.	72
Appendix I.	73
VITA.	74

CHAPTER 1

INTRODUCTION

More than one million teenagers become pregnant each year. In 1983 there were 554,000 babies born to teenagers and of these pregnancies, 56% were unintended. Eleven thousand of these mothers were younger than 15, and 203,000 were between 15 and 17 (Smith, 1985). Today there are about 1.3 million children living with teenage mothers, about half of whom are unmarried (Vernon, 1983). Teenage pregnancy is more likely to adversely affect the teenager than any other socio-medical event. In order to help prevent unintended teenage pregnancy, it is necessary to identify the potentially alterable psychological factors that are predictive of pregnancy. In retrospective studies, antecedent factors predictive of teenage pregnancy include low self-esteem, low religiosity, parent conflict, and alcohol and drug abuse (Roosa, 1984). Prospective studies are critical in identifying the teenager at risk for pregnancy, if we hope to prevent the problem.

Personality factors may influence which teenager will choose to become sexually active, and of equal importance, which teenager will employ the use of contraceptives if sexually active. One factor associated with the refusal by teenagers to utilize birth control if they are sexually active is locus of control. A teenager who is

sexually active but does not utilize contraceptives is more likely to be externally controlled than one who conscientiously uses contraceptives (Ralph, Lochman, Thomas, 1984) Locus of control (LOC) is a construct used to predict which people internalize responsibility and which people feel that responsibility belongs to anything or anyone other than themselves. Researchers disagree as to whether it is generally preferable to be "internally" controlled or "externally" controlled (Bradley & Webb, 1976).

No research was found that studied locus of control of pregnant and nulliparous adolescents. Some research has been done on LOC and contraceptive use by adolescents. If LOC is found to be a predictive factor in teenage pregnancy then it may be significant, because LOC can be influenced by counseling or other interventions (Galejs & Hegland, 1982).

Purpose of the Study

The purpose of this study was to determine if there was a relationship between LOC and unintended teenage pregnancy. Two groups of teenage girls, pregnant and nulliparous, were compared.

Problem Statement

Does a relationship exist between a teenage girl's LOC and unintended pregnancy?

Theoretical Framework

Orem's Self-Care Conceptual Model, Rotter's Social Learning Theory, and Piaget's Theory of Cognitive Development provided conceptual frameworks for this study.

Orem's Self Care Theory

According to Orem's (1985) self-care theory, individuals are responsible for their own health. Each individual is a self-care agent with self-care as a prerequisite for human development, well-being and health. Individuals learn through human interaction to nurture and care for themselves in an ongoing and purposeful manner. The nurse's relationship to that individual exists to maintain, restore or enhance the person's ability to care for himself/herself. In order to promote self-care the nurse must involve the individual in his/her care. The result of this is maintenance and promotion of health. The theory has three related constructs: self-care, self-care deficits, and nursing systems. The first construct, self-care, is a deliberate action that when effectively practiced, regulates general human functioning and human development. Examples that promote health and assist in preventing health problems are: annual physical exams and proper nutrition, and may include, alterations in lifestyle such as cessation of cigarette smoking and weight reduction. Self-care varies according to motivation, family, education, experience and illness. The theory of self-care deficits explains when and

why nursing is required. The third construct, nursing systems, explains nursing practice and how persons are helped through nursing (Orem, 1985). Teenagers who participate in unprotected intercourse seemingly do not understand or lack the motivation for self-care. The teenager who either actively elects not to participate in sex or who utilizes birth control demonstrates purposeful self-care.

Universal self-care requisites are identified by Orem as: 1) air, 2) water, 3) food, 4) elimination, 5) activity and rest, 6) interaction and solitude, 7) prevention of disease and 8) normalcy. Neither the self-care requisites of prevention of disease or normalcy are met by the pregnant adolescent. Both the teenager and her infant are at risk when teenage pregnancy occurs. About six percent of first babies born to girls under age 15 die in their first year--a rate 2.4 times higher than babies born to women in their 20's. Sixteen percent of babies born to mothers under 15 are of low birth weight. Low birth weight is not only a major cause of infant mortality but of a host of other childhood illnesses and birth injuries, such as neurological defects which may involve lifelong mental retardation. The death rate from complications of pregnancy, birth, and delivery is 60 percent higher for women who become pregnant before they are 15. Also teenage mothers are likely to begin childbearing without having had the opportunity to acquire necessary skills to care for their infants (McGanity, 1981).

Developmental self-care requisites include maintenance of living conditions that support growth and development and provision

of care to prevent adverse conditions that affect growth and development. Neither of these developmental requisites are met when teenage pregnancy occurs. The pregnant teenager usually becomes educationally deprived and socially maladapted. As a result of this, her human potential is not reached.

Inability of the individual to provide adequate self-care because of lack of knowledge, skill or motivation may indicate a need for nursing intervention. Decisions made by adolescents may be a product of the adolescent's socialization. The adolescent may not fully understand the reasons she made some decisions. The nurse and the adolescent need to discuss past and current decisions so that the adolescent can make deliberate choices to promote health. Nursing interventions include guiding, teaching, and supporting. Within the educative-developmental system the adolescent is taught to assume responsibility in order to implement self-care. This is done by teaching and reinforcing the importance of birth control to the sexually active adolescent male and/or female. For the pregnant teenager the nurse can emphasize the responsibility the teenager has to keep prenatal appointments as well as to prevent future unwanted pregnancies.

Rotter's Concept of Locus of Control

Locus of control is a concept from Rotter's Social Learning Theory, which was developed in the 1950s. Social Learning Theory operates under the assumption that individuals enter situations with certain expectations about the outcome of the behaviors they will

exhibit in that situation. If individuals have experienced similar situations in the past, and their behavior brought forth a positive outcome, then individuals should want to repeat that same behavior. If the situation they encounter is novel, individuals then should rely upon all past experiences and behave in a manner which they feel will bring about the most positive outcome or reinforcement. When individuals deal with similar experiences, they can have some assurance that certain behaviors will yield certain outcomes; these are known as specific expectancies. General expectancies must be used when an individual encounters a new situation. The final behavior will be based on the previous outcomes of various life experiences (Rotter, 1975).

The concept of locus of control (LOC) evolved because Rotter found discrepancies between behaviors he saw persons exhibit and what he felt they should exhibit. First, Rotter discovered that predicting the probability of a person's behavior in a given situation could only be done if that person accepted responsibility for the outcome of the behavior. If the person felt the outcome of his/her behavior was due to fate or luck, then the person would not necessarily repeat the behavior in a similar situation. Therefore, prediction of a person's behavior would become more difficult. Secondly, when individuals were given an ambiguous task to complete and the outcome could truly be due to chance, Rotter found that some still saw themselves as responsible for the outcome of task; others repeatedly attributed the outcome of the task to chance or luck (Fanelli, 1977).

From these discrepancies, Rotter (1975) defined the concept of locus of control:

When reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of forces surrounding him. When the event is interpreted in this way, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control (p. 57).

Piaget's Formal Operational Stage

Piaget's (1950, 1973) theory is an explanation of cognitive development from infancy through adolescence. Three concepts that Piaget uses to explain cognitive development are cognitive structure, cognitive function, and cognitive content. Cognitive structures are underlying variables that control intelligence at any developmental level. Cognitive functions include organization and adaptation. Organization is the process whereby individuals maintain continuity during life and adaptation is responsible for cognitive changes. Adaptation has two underlying principles of assimilation and accommodation. Assimilation occurs when information is made to fit one's current cognitive organization level. Accommodation is the process of

assimilating new forms of information (Piaget, 1973). Cognitive contents are the specific acts of intelligence that characterize the stages of development. The stages of development include sensorimotor stage (infancy), preoperational stage (early childhood), concrete operational stage (middle childhood), and formal operational stage (adolescence).

Piaget (1950, 1973) characterized the cognitive shift of adolescence as a movement from concrete to abstract reasoning. As development progresses, the cognitive structures defining earlier stages become hierarchically integrated with those of later stages. The highest level of reasoning, the formal operations stage, emerges in adolescence. One component of this stage is the ability to utilize old experiences to solve new problems. This allows the adolescent to think beyond the present; the empirical world is viewed as only one of many possibilities. Formal thought, according to Piaget (1973), provides the adolescent with a framework for envisioning possible relations among a set of elements. Formal operations, according to Erikson, (1963) provides the adolescent with the cognitive tools to develop identity since "from among all possible and imaginable relations, he must make a series of ever narrowing selections of personal, occupational, sexual and ideological commitments" (p.245).

During the period of formal operations, ages 11-15 years, the child develops the capacity to solve problems through logical operations. Piaget (1973) believes that thinking reaches its peak at this time. During the years necessary for formal operations to become

established, three patterns emerge. These are, hypothetico-deductive reasoning, scientific reasoning and reflective abstraction.

Hypothetico-deductive reasoning refers to any type of reasoning that goes beyond the confines of our everyday experience to things of which we have no experience. It extends beyond the boundaries of perception and memory. Such reasoning involves deducing conclusions from premises which are hypotheses rather than from facts verified by the adolescent. Deductive reasoning is from general to specific and is commonly described as reasoning from premises to conclusions. Scientific (inductive) reasoning emerges in the formal operational stage. According to Inhelder and Piaget, (1958) adolescents confronted with complicated problem-solving situations formulate hypotheses about what may be going on. Rather than concentrate on immediate facts, adolescents formulate hypotheses which allow them to systematize facts, and then they experiment. After adolescents study a problem and experiment, they may find a solution. They then develop theories which may be partially responsible for the turmoil of this era. In adolescent thought, the criterion for making judgments becomes what is logical to the adolescent. Adolescents feel that the world should submit itself to idealistic schemes rather than to reality. Inhelder and Piaget (1958) write:

. . . when the cognitive field is again enlarged by the structuring of formal thought, a . . . form of egocentrism comes into view. This egocentrism is one of the most enduring features of adolescence. . . . The adolescent not only

tries to adapt his ego to the social environment but, just as emphatically tries to adjust the environment to his ego.

. . . The result is a relative failure to distinguish between his point of view . . . and the point of view of the group which he hopes to reform. . . . But we believe that, in the egocentrism found in the adolescent, there is more than a simple desire to deviate; rather, it is a manifestation of the phenomenon of lack of differentiation The adolescent goes through a phase in which he attributes an unlimited power to his own thoughts so that the dreams of a glorious future of transforming the world through ideas seems to be not only fantasy but also an effective action which in itself modifies the empirical world (p. 308).

Reflective abstraction is a consequence of hypothetico-deductive and scientific reasoning. It is the process of formulating rules in advance of the facts. Since laws are not confirmed in practice, they are according to Piaget, reflective abstractions.

The attainment of formal operational thought is a necessary precondition for the resolution of the identity crisis of adolescence. In order to evaluate life alternatives and ideological assumptions the adolescent should be able to think in terms of possibility, reason hypothetically and construct theories which are logically coherent. As Erikson (1963) noted, formal operations provide the adolescent with the tools to develop a sense of identity.

It is through experimentation that one begins to develop an internal locus of control. We tend to view adolescence as a period of experimentation. It is from experimentation that the boundaries of one's potential are learned. Over time, as the adolescent becomes older, certain roles are rejected and others assumed. Also, with increased age, the sense of control and limits of influence are internalized and the need to continually validate them through testing behavior diminishes. From this perspective, it would seem that the younger adolescent would be more external than the older adolescent. That is true if in their past experiences the older adolescent's actions were seen to have an impact on the course of events in their life. As the adolescent progresses in the formal operational level, correct behavior begins to be defined in terms of general individual rights and standards that have been agreed on by society.

According to Piaget, adolescents are capable of scientific reasoning and formal logic. They do not actually have to experience a situation to solve a problem or imagine the outcome. One component of adolescence is the ability to extrapolate--to draw upon old experiences to solve new problems not previously encountered (Piaget, 1973). They can imagine the possible, i.e. college and occupational possibilities, future change, and the consequences of their actions. Therefore, they should be able to understand the full ramifications of unprotected intercourse. Utilizing an LOC perspective one can anticipate that the more externally focused the teenager, the more likely an unintended pregnancy will be viewed as unlucky or an act of fate.

Repeatedly, pregnant teenagers, in the clinical practice of the investigator, state that they cannot believe that they are pregnant, yet they readily admit having frequent unprotected intercourse.

Nominal Definitions

1. Unintended teenage pregnancy - An unplanned unwanted pregnancy of an adolescent girl.
2. Low Income - An annual family income of less than \$10,000.
3. Nulliparous - A female who has never been pregnant.
4. Locus of Control - "deals with individual interpretations of the causality of behavioral outcomes or reinforcements" (Arakelian, 1980, p. 26).
5. Internal Locus of Control - a belief that reinforcement is contingent upon one's own behavior or one's own permanent characteristics (Rotter, 1966).
6. External Locus of Control - a belief that reinforcement is "a result of luck, chance or fate as under the control of powerful others, or as unpredictable" (Rotter, 1966, p. 1).

Assumptions

1. The instruments in this study were valid and reliable measures of the constructs.
2. Responses of the participants were honest and accurate.

Research Questions

There were three primary questions addressed in this study:

1. Is there a significant difference between pregnant and nulliparous teenagers in locus of control?
2. Is there a significant difference between pregnant and nulliparous teenagers in age?
3. Is there a significant interaction between locus of control and age?

Summary

Chapter I described the research problem, presented the justification for the study, and outlined the research questions. Theoretical constructs developed by Orem, Rotter and Piaget were presented. A review of relevant literature is included in the following chapter.

CHAPTER II

REVIEW OF LITERATURE

This Chapter reviews the literature related to the concept of locus of control, adolescent developmental theory, teenage pregnancy, teenage contraceptive use and sex education. Empirical research focusing on unintended pregnancy and suggestions for prevention of pregnancy were included.

Locus of Control

Since Rotter introduced the locus of control concept, numerous studies have been done to determine characteristics of persons with an internal or external LOC. An article written by Fanelli (1977) reviewed studies demonstrating that parental characteristics were important in establishing their child's LOC. An internal LOC was developed when parents were supportive and accepting of their children and fostered their independence. Parents whose children had an external LOC were characterized as hostile, punishing and rejecting. Preschool children were tested for LOC and their interactions with teachers were subsequently observed by Galejs and Hegland (1982). These authors found no difference between internal and external LOC children with regard to how much time they spent with their teachers, peers, or by themselves. The differences found between "internals" and "externals" was that "internal children elicit less physical and

verbal comfort from teachers, involve teachers more, and . . . get more information from teachers than do external children" (p.299). The authors felt that this study supported findings by others that external children were seen by teachers as requiring more attention and having more difficulty interacting with their teachers than internal children. The internal children asked more questions and pursued answers longer.

In 1972, Bryant found that teachers described external LOC students as having more negative characteristics than internal students. External students saw their teachers in a more negative light than internals did. Externals were also found to have more misunderstandings about various classroom content and felt that they were misunderstood more often. It was concluded that relationships between teachers and external students were more uncomfortable than relationships between teachers and internal students.

High school students were tested for LOC and its relationship to future career plans. Lokan and Biggs (1982) found that internal LOC students had made more definite plans for their future and were more aware of what was involved in obtaining their desired career goals. Because of their achievement level in high school and their decision-making ability, internal students were thought to be more likely candidates to succeed in their desired careers.

Four years following his national longitudinal study of high school seniors, Richards (1983) conducted a follow-up study to determine if goals set by these students had been realized. It was

hypothesized that students with an internal LOC would be more likely than students with an external LOC to achieve their stated goals. Goals were set with regard to future educational plans, career goals, marriage, and number of children expected. A self-esteem inventory was utilized to determine how adolescents felt about themselves. Richards found correlations highest between students with a high self-esteem, an internal LOC, and accomplished educational goals. He did not find high correlations between LOC and the accomplishment of other stated goals.

Valecha (1972) examined persons' LOC to various work variables. These subjects were males ranging in age from sixteen through twenty-six years of age. He found that persons with an internal LOC had the following characteristics: they were employed in professional and white collar occupations; they possessed a better grasp of knowledge required in the world of work; they were promoted more often; their jobs allowed greater amounts of freedom to exercise their own judgment; they had a lower attrition rate in their jobs and fewer sick days were taken; they had greater incomes; they were involved in more continuing education programs which allowed for progression in their jobs.

There have been a number of studies by nurses that demonstrate that locus of control orientation leads to different health-related behaviors. Many of these studies have focused on geriatric populations. Articles critiquing nurses' application of this construct are valuable additions to LOC literature and can be generalized to

an adolescent population. A discussion of three relevant articles follows.

Arakelian (1980) discussed the fact that internally-controlled people are more motivated to assimilate information regarding health maintenance than externally-controlled people. They are more likely to accept warnings related to toxins, smoking, and alcohol and to incorporate these warnings into their lifestyle. Externally-controlled individuals do not believe that their actions will make a difference. This may explain refusal to wear seat belts or take other precautionary measures by some.

Arakelian summarized negative behavioral responses of patients in regard to compliance by categorizing them in terms of reluctance, reactance, and recidivism. Reluctant patients are those who do not show up for medical appointments or do not schedule needed appointments. Reactance is defined as the reluctance or refusal of patients to comply with medical advice. Recidivism is back-sliding by patients who, at the beginning of treatment, are willing to participate in their care. According to Arakelian, "People judge their chances for success by accessing immediate situations (situational expectancy), but they also draw upon what they have learned from past experiences that seem similar to present experiences (generalized expectancy). Because such generalized expectancies also influenced perceptions and meanings given to present situations, the importance of the role of generalized expectancies in determining behavior becomes apparent" (p. 26). Locus of control is developed over time and because "changes in

expectancies can be brought about by introducing new experiences that alter previous patterns of success and failure, the potential always exists for changing a person's locus orientation" (p. 27).

Shillinger (1983) reviewed research demonstrating the utility of locus of control in understanding health behaviors. She expanded Orem's self-care model to explain the relevance of locus of control to self-care. She encouraged the assessment by nurses of individuals' locus of control in order to understand and predict health behaviors. She concluded that with internally-oriented patients the self-care approach was most appropriate, while externally-oriented patients would benefit from the direct approach. She also discussed methods of increasing patient participation via contracting with extreme externals to help them learn to apply decision-making skills while maintaining therapeutic alliances with them.

Thomas (1983) examined the relationship between selected predictor variables and the health status of Americans in middle adulthood. The subjects were 251 individuals from 32 states. Findings included the fact that internal locus of control was the strongest predictor of good health. This research has relevance for the present adolescent study because the parents of most of the adolescents surveyed fall in the middle adulthood age range (35-55). It is logical to assume that parental beliefs may influence the beliefs of their children.

In summary, if the adolescent female sees herself as having control over her life rather than viewing her fate as predetermined

she is more likely to establish future goals and understand her responsibility in meeting these goals. Completion of the psychological developmental tasks and internalization of responsibility are crucial for adolescents who are making sexual decisions. The evidence provided in the previous studies supports this researcher's investigation of LOC as a factor in adolescent decision-making.

Adolescence

The process of becoming an adult is seldom simple; gender identity, sexual role development, and acquiring a capacity for intimacy are among the tasks of adolescents (Thomas, 1982). Psychosocial theory holds that the developmental crisis of adolescence leads to the formation of a sense of identity (Erikson, 1963). Adolescents come to see themselves as distinct individuals, unique and separate from other individuals. Some authorities see the central conflict of identity vs. role diffusion of adolescence as being resolved in two stages (Newman & Newman, 1979). The early period begins with puberty and extends to relative physical and emotional stability at or near high school graduation. During this time the adolescent is faced with the crisis of group identity vs. alienation. In the next period the adolescent hopes to develop a sense of personal identity. Group identity is essential as a prelude to personal identity. During adolescence the peer group may help provide self assurance, but if an adolescent is rejected by peers, or rejects peers, he/she, then, may compensate by assuming the adult role (Sapala & Strokosch, 1981).

Sex role identity is a component of self-concept. Every culture has sex role standards, and individuals view themselves and often form their sex role identities in relation to these norms. Several basic questions evolve: are males and females typed according to their sexes; do they select certain sex roles depending on cultural standards; or are there inherent gender differences?

Erikson's stages of development for adolescents, identity and intimacy, are reversed for females according to research by Douvan and Adelson (1966). The task for males is to achieve an identity while the task for females is to achieve intimacy. Adolescent boys are engaged in preparing for vocational goals while adolescent girls are more occupied in seeking love relationships. Boys are more likely to identify themselves in terms of vocational accomplishments, and girls identify themselves in terms of close relationships. This may help to explain why girls are willing to engage in unprotected intercourse. They may view this as the way to meet their need to be loved. Boys, conversely, place less emphasis on these intimacy needs.

Thomas, Shoffner, and Groer (in press) conducted a study of gender differences in stress factors in 323 freshman high school students. Included in their study were 172 females and 150 males with a mean age of 15.5 years. Life stress of these students was measured by the Adolescent Life Change Event Scale. This scale assesses occurrence of 38 life events salient to the developmental tasks of adolescents. The adolescents were also provided an opportunity to write in additive stressful events which occurred in the

past year. Their results revealed that though there was little difference between boys and girls in incidence of frequently reported stressors, i.e., hassling with parents, hassling with siblings, and making friends. However, there were gender differences in other types of stressors. Stress scores for females were higher, and females were more concerned with self-concept and interdependence, e.g., problems with their mothers, problems with their boyfriends, being talked about. Males were shown to be more concerned with role function issues, e.g., pressure to excel in sports, job-related problems. Boys did not express concern about family or sexual relationships. The researchers suggested that nurses need to consider gender differences when working with adolescents. Recommendations included conducting separate sessions for males and females to discuss gender specific concerns, while conducting joint sessions for common concerns. They also encouraged the use of male leaders to create an atmosphere where boys felt free to talk about relationships.

In a study by Duncan (1985), the relationship between sexual maturational timing, body image, school behavior and deviance was investigated. Data were obtained from the National Health Examination Survey 1966-1970. This was a national probability sample of 5735 children between the ages of 12 and 17 years. Instruments were utilized to determine the development of each subject's secondary sex characteristics, body image satisfaction and school-related deviant behavior. In conclusion the author determined that variation in the timing of pubertal maturation may result in behavioral differences

among early, mid and late maturers. In terms of body image, the early maturing males were the group most satisfied with height and weight. The early maturing females were most dissatisfied with weight: sixty-nine percent wanted to be thinner. The author theorized that normal developmental processes were being viewed negatively by females and positively by males. This study highlights an area of concern for pregnant adolescents. If sixty-nine percent of teenage girls studied wished to be thinner, then a significant number of teens perceived themselves as fat and are troubled by their body images. Pregnant teens are appreciably larger and possibly already fragile in regard to self-perception. Being pregnant further impacts negatively on body image and self-perception.

Hanson and Mullis (1985) examined the relationship between empathy and flexibility of moral reasoning. One hundred seventy-seven adolescent males and one hundred fifty-five females completed a flexibility of moral judgment index and an emotional maturity scale. Findings indicated that emotional empathy and flexibility of moral reasoning were not related. There was a significant main effect for sex, with females demonstrating higher emotional empathy than males. It was concluded that the nature of peer influence, the type of life situation to which one is exposed, and experiences with moral conflict may be significant factors in determining how adolescents make decisions about moral situations. This study leads to speculation by this author regarding behavior observed in a labor and delivery clinical setting. Adolescent males often appear insensitive to, and

lacking in, empathy toward their laboring girl friends. It may be that they have not yet developed the capacity for empathy. It may be that the situational crisis of pregnancy, superimposed on the developmental crisis of adolescence, acts as barriers to delay empathy development, especially in adolescents who are psychologically immature and who have little or no social support.

Many studies have investigated gender differences in terms of academic achievement. Males were often characterized as being superior in terms of mathematic ability while females were superior in the arts. A recent study by Matheny, Dolan, and Krantz (1980) analyzed information about adolescent interests, responsibilities and vocational goals as reported by parents of 86 white female and 62 white male, 15 year-olds. Females were found to be more interested in domestic and social pursuits; males were more interested in manual arts and outdoor pursuits. For both sexes, academic achievement in areas traditionally associated with gender were reported by parents in this study. Parents of females felt that their daughters scored higher in the arts while their sons scored higher in the sciences. This study supports the theory that a functional relation exists between the intellectual and the personal-social aspects of development. The data were gathered from the parents rather than from the adolescents. This researcher questions the gathering of data from parents only. Also, no descriptive information was provided about the participants in this study.

Influences on Sexual Behavior

The influences most frequently mentioned in the literature on sexual behavior of the adolescent include peer groups, the media, adolescent-family relationships, and the adolescent's personal characteristics. The peer group is an important factor in stimulating sexual permissiveness and providing information about contraceptives (Vandewiele, 1981). During early adolescence the peer group begins to communicate expectations regarding heterosexual relationships. Conformity with peers is very important to adolescents. The need for conformity extends to sexual maturation and behavior; any perceived deviance is a cause for concern and may be a source of anxiety (Murray & Huelskoetter, 1987). Peer group pressure is associated with early sexual experimentation. Both males and females may succumb to this pressure in adolescence rather than risk being different. Nearly all studies examining sources of sex information show that peers are rated as the most frequent source (Edwards, Steinman, Arnold, & Hakanson, 1980). In a study conducted by Billy and Udry (1985) it was found that virgin white females whose best friends were sexually active were almost certain to have intercourse during the two years of their study. However, a study by Darling and Hicks (1982) suggests that peer groups have diminished in importance while the media have increased in degree of influence on adolescent mores.

The National Federation for Decency (1977) reported that on prime time television, 89% of all sex is presented outside the marriage;

it is most often presented as an overwhelming uncontrollable physical desire. American parents do not play a major role in presenting information on human sexuality to their adolescent children. Scales (1981) comments "Family sexual communication is generally characterized by silence, rule-making, and the excess of authority more than by the explanation of values in a verbal atmosphere of cooperative disagreement," (p. 558).

Turmoil is a characteristic of adolescence. Changes in emotional control and response accompanied with changes in physical appearance will produce conflicting messages. Teens vacillate between considerable maturity and childlike behavior (McCandless & Coop, 1979). Adolescents engage in sexual relationships for pleasurable sensations, to satisfy sexual drives, to satisfy curiosity, as a conquest, as an expression of affection or from inability to withstand pressure to conform. Often a girl's urge to belong will provoke intimate physical contact with a boy friend. Eventually sexual intercourse may become established as a pattern and a method for ensuring social participation, and the adolescent does not seem to be able to discontinue the relationship (McCandless & Coop, 1979).

Cvetkovich (1975) found that many adolescents entertain a "personal fable of sterility" and do not comprehend the probabilistic relationship between intercourse and pregnancy. Very closely related to levels of cognitive development are levels of moral development. Sexual choices seem to be influenced by an individual's level of moral reasoning. This development of reason in adolescents should

make it possible "to elect, to perform, to remember, to anticipate whatever behavior, sexual or otherwise is to be engaged in."

(Calderone, 1979, p. 685). Turmoil is also created by conflicting messages regarding sex. Some messages tell teenagers that having sex is a way to show deep concern for another person. Other messages say that having sex outside of marriage is immoral (Leppink, 1979).

An exploratory descriptive study done by Carlson and Kaiser (1984) investigated the relationship of personal characteristics and family and social support to decision making in adolescents. While the results were not statistically significant, the greater the social and family support the more likely the teenager was to make responsible personal decisions.

The Coopersmith Self Esteem Inventory was administered to 874 teenage women enrolled in two high schools in North Carolina. It examined the relationship between self-esteem and teenage pregnancy. The data showed no significant association of self-esteem and pregnancy. The average self-esteem score for young women who became pregnant was 66.7 vs. 65.3 for all other women (Vernon, 1983). This study implies that perhaps many pregnant adolescent girls do not perceive their pregnancy as a negative life experience--at least initially. Some adolescent girls desire pregnancy and feel "special" because they are pregnant.

Some research has been done on the relationship the pregnant teenager had with her mother. Cicirelli (1980) reported that 62% of 257 unwed mothers identified their mother as being the dominant

personality in the home. Of 100 unwed mothers studied by Olson and Worobey (1984) it was concluded that a smothering relationship with the mother prevented the daughter from developing important peer relationships. Based on these studies, it would appear that the adolescent is adopting socially deviant behavior in order to escape from the relationship with her mother. Neither of these studies considered other variables that have been identified as impacting on unintended teenage pregnancy.

Contraceptive Use

Birth control and contraceptive behaviors are inadequate among adolescents. The Alan Guttmacher Institute reported in the Knoxville News-Sentinel that almost one-fifth of all American girls have sex before their 16th birthdays and 73 percent of all teenagers are sexually active by age 19 ("One Fifth," 1987). Only about 33% claim to use any form of birth control (Zelnik & Kantner, 1980). About 40% of these depend on male methods of contraception. There has been a shift in the 80's from the use of the very effective birth control pill to the less effective male withdrawal method (Diepold & Young, 1979). This is associated with the emphasis the media have placed on the dangers of oral contraceptives. Even among those who were motivated to obtain family planning services, only one half of the 14 year olds and two thirds of the 15 year olds used contraception (Scharff & Silber, 1980).

There are a number of reasons cited in the literature associated with failure to use contraceptives. Mindich and Oscamp, (1982)

categorized these variables in three groups: 1) demographic variables, which include being under 18 years of age, single, and of low socio-economic status; (2) situational variables, which include sporadic intercourse, not having a steady relationship with someone, lack of parental-child communication, and not having experienced a pregnancy; and 3) psychological variables, which include powerlessness, desiring a pregnancy, low ego, low self-esteem, and fatalistic attitudes.

Lindemann's (1974) study established three stages of contraceptive use by the teenager. The first stage is the "natural" stage and is characterized by the belief in spontaneity and little awareness of the possibility of pregnancy. The second stage or "peer prescription" is characterized by discussing birth control with friends; the prevailing problem is misinformation. The third stage, the "expert" stage, includes contacting a professional for a prescribed, proven birth control method. Adolescents in this stage are more developmentally mature and are committed to sexual behavior.

Some adolescents who have information about and access to contraceptives simply choose not to use them; these adolescents become pregnant intentionally. Cohen (1983) identified several factors that contribute to intentional teenage pregnancy. These factors include depression, poor school performance, lack of love in parent-adolescent relationships, a desire to be loved, fear of abandonment by boyfriend, and the need to affirm female identity. In a study by Reichelt (1979) it was found that in a majority of cases studied, contraception was not discussed prior to first intercourse.

Of teenagers who became pregnant, Vernon (1983) reported 23% had intended pregnancy, yet only one in five of those who did not wish to become pregnant used contraception. Approximately half of the contraceptive non-users who became pregnant did not consider pregnancy a likely outcome of unprotected intercourse. This researcher questions the significance of this study because there was no mention of assessment of contraceptive knowledge level of the adolescents. Similar patterns of thinking exist for adolescent males regarding contraceptive use. Carlson and Kaiser (1984) reported that while 90% of adolescent males acknowledged the efficacy of condoms, only 15% regularly used them. Withdrawal, on the other hand, considered an effective contraceptive method by 70% of males surveyed, was regularly used by 30%. In a study by Blum and Resnick (1982), one aspect of sexual decision-making was examined, i.e., developmental factors among sexually active adolescents which distinguish between those who are successful contraceptors and those who become pregnant. In this study contraceptors were found to have higher levels of ego development and more modern sex-role orientation.

The obvious result of unprotected intercourse is unintentional pregnancy. The Supreme Court decision in 1978 to legalize abortion has established abortion as a form of birth control among affluent adolescents. In 1977, half of the pregnant 15 year olds or younger in the United States chose abortion (Baldwin, 1980). Most pregnant teenagers who carry pregnancy to term also choose to keep their baby. The consequences of irresponsible sexual behavior by teenagers,

whether they decide to abort or to keep their babies, are multidimensional and include medical, psychological and economic ramifications.

Sex Education

Although advocates of sex education have become more committed in the last two decades, fewer than 10 percent of today's youth receive a comprehensive sex education program (Strouse & Fabes, 1985). Eighty percent of Americans polled favor sex education in schools and 70 percent favor the availability of contraceptives. Research has shown that more knowledge encourages more responsible sexual behavior (Gordon & Scales, 1977). Today, many states are in the process of adopting approved family life curricula that include information about sexuality and birth control. However, only 10 states require sex education in the schools; therefore many adolescents do not receive sex education except from parents, peers or the media. School officials cite two reasons why sex education is not offered: 1) lack of qualified teachers, and 2) fear of public reaction (Strouse & Fabes, 1985).

In a study by Maslach & Kerr (1983) 88 interviews with adolescents revealed that there were three areas in need of revision in the sex education course taught in their school. These three areas were identified as curriculum, format and lecturer. The students surveyed thought that their questions were not adequately answered and that the lecturer was too "old fashioned." The researcher in this study developed some guidelines regarding the implementation of sex education programs. These guidelines included advising that course

format and presentors' views be consistent with the social and cultural norms of the audience. It is recommended that the instructor be informed of the students' specific questions prior to class and be willing to answer them honestly. These suggestions can be useful for the nurse who is teaching sex education in the school.

Roosa (1984) did a study evaluating teenagers' knowledge of sexuality and pregnancy. He showed that school-based programs have a positive effect upon teenagers knowledge level and that increased knowledge level is a factor in preventing undesirable teenage pregnancies. Zelnik and Kim (1982) found that although sex education courses do not influence whether or not the teenager engages in sexual activity, they may have a positive effect on contraceptive use.

In light of the evidence presented in the literature, sex education in public schools is inadequate. Follow up studies are needed to provide a broader data base in order to assist health educators in devising sex education curricula that will give students the information they need to prevent unintended pregnancy.

Suggestions for Prevention of Unintended Pregnancy

The reviewed literature revealed that reasons teen pregnancies occur are multidimensional. The goal of health educators is to encourage teenagers to postpone or prevent unintended pregnancy.

McGee (1982), in a study of services available to teenagers, urged the following measures in preventing unintended pregnancy:

1. Investigate incentives for the prevention of pregnancy.

2. Experiment with interventions which seemingly have an effect on social situations in which adolescents make decisions.
3. Help parents and schools assist adolescents in making career choices and appropriate decisions about sex and contraceptive use.
4. Make family planning accessible, low cost, and individualized.
5. Support public policies that encourage teens to postpone parenthood.

Moore and Burt (1982) included similar suggestions. In addition they encouraged the development of new contraceptive methods which would be appropriate for the adolescent's irregular sexual patterns. Also they suggested follow up studies on the various methods of final resolution of the unintended pregnancy, i.e., abortion, relinquishing the baby for adoption and keeping the baby, and the effects these choices have on teenage parents, the infant, and the families.

Summary

In summary, research studies related to contraceptive use by adolescents, sex education and influences on sexual behavior, as well as some suggestions for prevention of teenage pregnancy, were reviewed. The literature emphasizes teaching teenagers the techniques of rational decision-making and the advantages of avoiding unintended pregnancy. It also demonstrates that some teenagers fail to act sexually responsibly because of their life situations or feelings

about their own destinies and the part each plays in determining his/her future. This researcher feels that some teenagers do not have long-term goals related to education, vocation, economic and parental success. According to the literature reviewed, some teenagers do not internalize responsibility and this is the reason that they participate in irresponsible sexual behavior. In light of this, the internally controlled adolescent seems less likely to become pregnant than the externally controlled adolescent. Teenage pregnancy is a growing concern in our society. It is imperative to identify some predictive personality factors in order, possibly, to alter these factors in an effort to prevent the social, medical, and economic epidemic of unintended teenage pregnancy.

CHAPTER III

METHODOLOGY

Chapter III includes information about the subjects, their selection, instruments used, data collection procedures and the data analysis.

Research Design

This was a non-experimental study. Data were collected at one point in time from a convenience sample of adolescent females in west Tennessee in the spring of 1987. The independent variables were age and locus of control. The dependent variable was pregnancy status.

Research Questions

The research questions in the study were:

1. Is there a significant difference between pregnant and nulliparous groups in locus of control?
2. Is there a significant difference between pregnant and nulliparous groups in age?
3. Is there a significant interaction between locus of control and age?

Subjects

The subjects for this study were white, low family income female teenagers, ages 13-18. The pregnant subjects (N=30) were in their 2nd and 3rd trimester and were receiving prenatal care at the West Tennessee Public Health Department. The nulliparous subjects (N=30) were students enrolled in the Family Life course taught at Tigrett Jr. High School in Jackson, Tennessee. From the total sample of nulliparous subjects (N=178) the researcher grouped the subjects according to age and then randomly selected participants from each age represented. All white, pregnant subjects receiving prenatal care at the health department met the criteria of single and low income.

The researcher obtained permission from the principal (Appendix A) of Tigrett Jr. High, a parent of the teenager (Appendix B), and the teenager (Appendix C) to collect data through the use of Rotter's I-E Scale (Appendix D). Also a demographic data sheet was completed by each nulliparous subject (Appendix E). Permission was obtained from Dr. Mueller, Director, West Tennessee Public Health Department (Appendix F), the parent of the pregnant teenager (Appendix G) and the pregnant teenager (Appendix H). Also a demographic data sheet was completed by each pregnant subject (Appendix I).

Instruments

Rotter's Internal-External Scale

Rotter's (1966) Internal-External Scale (I-E Scale) was used to measure the locus of control of two groups of teenagers (pregnant and nulliparous). The instrument is a 29-item forced choice scale that seeks to determine a person's belief about how reinforcement is controlled. Internal statements are paired with external statements. One point is given for external statements selected. Scores can range from 0 (most internal) to 23 (most external). A median score is obtained for the group tested; those scores falling below the median are considered internal. Those above the median are considered external (Rotter, 1966).

Test-retest reliability is consistent and acceptable ranging between .72 for 60 college students after one month and .55 for 117 college students after two months (males, $R = .60$; females, $R = .83$). The test-retest reliability indicates that the scale is a stable instrument that would produce similar results when readministered (Rotter, 1966). Reliability and homogeneity were demonstrated with an internal consistency coefficient of .70 which was obtained from a sample of 400 college students (Rotter, 1966). Convergent validity studies for this instrument are numerous. The Rotter's scale is sensitive to differences in perception about one's control over one's destiny. Discriminant validity reported by Rotter (1966) included correlations with the Marlow-Crowne Desirability Scale ranging from

-.70 to -.35 and correlations with measures of intelligence range from .03 to -.22.

The location, description and instructions for the scale can be obtained from Psychological Monographs, 1966, 80 (whole No. 609). The scale is self-administered and can be completed in about 15 minutes. A copy of Rotter's Scale may be found in Appendix D.

Demographic Questionnaires

The instruments were developed by the researcher for this study. These questionnaires obtained standard demographic information about age, income, grade in school, and living situation. The instrument developed for the nulliparous subject differed slightly from the instrument developed for the pregnant subject. A copy of these instruments appears in Appendixes H & I.

Operational Definitions

Locus of control was operationalized as the subject's score on Rotter's Locus of Control scale.

Data Collection

The study was conducted over a four week period. Dr. Mueller, Director, West Tennessee Public Health Department was contacted by the researcher and asked to allow patients from the Health Department to participate in this study. He was shown Rotter's I-E Scale and the purpose of the study was briefly explained. Dr. Mueller agreed to allow the use of the facility and patients for the study. The

researcher attended prenatal care clinic at the Health Department. Each subject who met the subject selection criteria was asked to participate in the project. The purpose of the study was explained as a research project designed to assess personality characteristics of teenage girls. If patients agreed to participate they were asked to have their parent(s) sign a consent form. Follow-up phone calls were made by the researcher to remind the patients to return their consent forms. When subjects returned their consent forms from their parent(s), they too were asked to sign a consent form. At this time patients were administered the Rotter's I-E Scale in a private office. They were instructed to answer the questions honestly. They were informed that there were no right or wrong answers. Every subject was informed that participation was voluntary and that no incentives for inclusion were offered. All subjects were told that their identities would be protected by using codes instead of their names.

Tommy Allen, principal, Tigrett Jr. High School, was contacted by the researcher and a meeting was scheduled to discuss the research project. Mrs. E. Smith, the guidance counselor, Mr. Allen and the researcher attended the meeting. The purpose of the study was explained and copies of Rotter's I-E Scale were distributed. Mr. Allen and Mrs. Smith agreed to allow their students to participate in the study. Nulliparous subjects who were enrolled in a Family Life class were asked to participate in the project. The purpose of the study was explained. The subjects were told that this was a project

that would examine personality characteristics of teen-age girls. Every subject who agreed to participate was asked to return a signed consent form from her parent(s) during the following week. The researcher made two visits to the school during that week to remind the students to return their consent forms. Every participant was asked to sign a consent form also. The Rotter's I-E Scale was administered during the Family Life course. It was explained that participation was voluntary and no incentives for inclusion were offered.

Debriefing sessions were held for both groups of teenagers. An explanation of their results of the locus of control scale was given. It was during this session that some nulliparous teenagers admitted engaging in unprotected intercourse.

Analysis

Initial Examination of Data

Descriptive statistics examined the variables of age, pregnancy status and locus of control. Variables of income and race were eliminated by limiting the subjects to white and low income. Internal locus of control was positively skewed for nulliparous subjects and negatively skewed for pregnant subjects. Age was negatively skewed for nulliparous subjects and positively skewed for pregnant subjects.

Statistical Procedures

Statistical analysis of the data was performed using a two-way analysis of variance (ANOVA). The two-way ANOVA partitions the model sum of squares according to the two main effects and the interaction. The first two research questions of the two-way ANOVA were concerned with the main effects of the two factors (age and LOC). The third research question was concerned with the possible existence of an interaction between the two factors. A significance level of 0.05 was chosen as the criterion for use with this statistical test.

Summary

The thirty nulliparous subjects were classified by age and selected randomly from each age represented. The first thirty pregnant subjects who returned their consent forms were selected to participate in this study. Variables were controlled by limiting the subjects to white, single, low income and age 13-18. Identification of the subjects was protected by utilizing code numbers only. The two-way Analysis of Variance procedure was utilized to answer the research questions.

CHAPTER IV

RESULTS

The results of this study are presented in two sections. The first section contains descriptive data about the nulliparous and pregnant sample. The second section answers the research questions.

Descriptive Statistics for the Nulliparous Subjects

Sociodemographic characteristics of the nulliparous subjects are presented in Table 1. There were thirty subjects. The mean age was 14.8 years. A majority (90%) lived with their parent(s) with twenty (67%) of these living in single-parent homes. Seven (23%) lived with both parents and three (10%) lived with someone other than their parents. The marital status of the parents revealed that twelve (40%) of the subjects' parents were married and eighteen (60%) were single or divorced. All but six (20%) had siblings or other relatives living in their homes. All nulliparous subjects were enrolled in school. The sample was restricted to Caucasian and low income (less than \$10,000 per year).

Table 1. Percentage Distribution of Sociodemographic Variables of Nulliparous Sample.

Variable	N	Percentage
Living Arrangement:		
Live with both parents	7	23%
Live with one parent	20	67%
Other	3	10%
Marital Status of Parents:		
Parents married	12	40%
Parents not married	18	60%
Only Child in Home	6	20%
Siblings or Others in Home	24	80%
Attend School	30	100%
Age:		
13 years	2	7%
14 years	8	26%
15 years	9	30%
16 years	6	20%
17 years	2	7%
18 years	3	10%
Yearly Family Income:		
\$10,000	30	100%

ie Statistics for the Pregnant Subjects

ic characteristics of the pregnant subjects are

2. There were thirty subjects. The mean age was
 17.4 years. Seventy (67%) lived with their parent(s) with sixteen
 in single-parent homes. Four (13%) lived with both
 parents. Three (3%) lived with someone other than their parents.
 The marital status of the parents revealed that ten (33%) of the
 mothers were married and twenty (67%) were single or divorced. All
 subjects had siblings or other relatives living in their home.
 The pregnant subjects were enrolled in school at the
 time of this study. This sample was restricted to Caucasian and low
 income (less than \$10,000 per year).

Locus of Control and Age

The questions being addressed in this study were: (1) Is there a
 significant difference between pregnant and nulliparous teenagers and
 their locus of control? (2) Is there a significant difference
 between pregnant and nulliparous groups and age? (3) Is there a
 significant interaction between locus of control and age?

Data were analyzed according to a two-way analysis of variance
 (ANOVA). The design included locus of control and age (three cate-
 gories) as factors and the pregnancy status as the dependent variable.
 An interaction term was included to check for a significant

Th 93, J635
 Th 87, W333

Table 2. Percentage Distribution of Sociodemographic Variables of Pregnant Subjects.

Variable	N	Percentage
Living Arrangement:		
Live with both parents	4	13%
Live with one parent	16	54%
Other	10	33%
Marital Status of Parents:		
Parents married	10	33%
Parents not married	20	67%
Only Child in Home	3	10%
Siblings or Others in Home	27	90%
Attend School	18	60%
Do Not Attend School	12	40%
Age:		
13 years	0	0%
14 years	6	20%
15 years	8	27%
16 years	11	37%
17 years	4	13%
18 years	1	3%
Yearly Family Income:		
\$10,000	30	100%

interaction between the two factors, age and locus of control on the pregnancy status.

The General Linear Models Procedure of the SAS statistical package was used for analysis of the data. The design was balanced with thirty subjects in each group (pregnant and nulliparous). A significance level of 0.05 was used with all statistical tests. The results of the Analysis of Variance disclosed that there was a significant difference between pregnant and nulliparous locus of control scores with pregnant adolescents scoring higher (more external) than nulliparous adolescents, $F = 3.32$, $df = 12$, $P = 0.0026$. There was a significant difference between the pregnant and nulliparous groups in terms of age with pregnant subjects being older than nulliparous subjects, $F = 4.39$, $df = 2$, $P = 0.0197$. The study also revealed that there was no significant interaction between age and locus of control on pregnancy status, $F = 0.86$, $df = 9$, $P = 0.5710$. Caution is encouraged in the interpretation of the results of this study due to the skewness of the data. Table 3 addresses the research questions.

Specific scores on Rotter's I-E Scale are presented in Table 4. The LOC mean for the nulliparous adolescent was 8.36; the LOC mean for the pregnant adolescent was 12.23 (higher scores are associated with externality).

Table 3. Results of Analysis of Variance.

Source	DF	Sum of Squares	Mean Square	F Value
Model:	23	9.1547	0.3980	2.45
Age (A)	2	1.425	0.7125	4.39*
LOC (B)	12	6.477	0.5397	3.32*
AxB	9	1.251	0.139	0.86
Error	36	5.845	0.1623	
Total	59	15.000	0.5603	

*p<0.05.

Table 4. LOC Score and Pregnancy Status.

Locus of Control Score	Pregnancy Status	
	Nulliparous Subjects	Pregnant Subjects
18		3
17		1
16		1
15		
14		4
13	2	7
12	1	1
11	3	3
10	2	4
9	5	3
8	6	1
7	3	1
6	6	1
5	2	

The LOC mean for the nulliparous adolescent was 8.36; the LOC mean for the pregnant adolescent was 12.23 (high scores are associated with externality).

Summary

There was a significant difference in locus of control of pregnant and nulliparous subjects. Pregnant subjects were shown to score more external than nulliparous subjects. Age was also shown to be a factor differentiating pregnant and nulliparous groups with pregnant subjects being older. There was no significant interaction between age and locus of control on pregnancy status.

The sociodemographic data revealed some additional differences in the two groups. As one would expect, many (40%) of the pregnant subjects were not enrolled in school. Another difference was that ten (33%) of the pregnant subjects lived with someone other than their parents, while only three (10%) of the nulliparous subjects reported that living arrangement.

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

Chapter V presents a discussion of the findings. Limitations of the study and a comparison to previous similar studies are included. Nursing implications and recommendations for additional research are offered.

This study has examined the relative importance of considering locus of control when assisting adolescents with sexual behavior decisions. The data collected from 60 adolescent females--30 of whom were pregnant, 30 of whom were not pregnant-- support the conclusion that pregnant adolescents are operating from a more external locus of control than nonpregnant adolescents. Therefore the pregnant adolescent feels less responsible for the outcome of behavior and prefers situations that enable her to rationalize failure. Locus of control has been found to be an effective predictor of a wide variety of behavior (Shillinger, 1983). In the context of this study one would expect that internally controlled adolescents are more likely to elect not to participate in unprotected intercourse, whereas externally controlled adolescents feel that getting pregnant may be an unavoidable situation related to bad luck.

Findings with respect to age of the pregnant and nulliparous group are consistent with other reports that an older adolescent has had more sexual exposure than a younger adolescent. The Alan

Guttmacher Institute report ("One Fifth," 1987), found that one-fifth of girls have sex before they turn sixteen, compared to an estimated 14% in the early 1970s. The Guttmacher Institute which examines family planning issues, estimated that 73% of all teenagers are sexually active by age nineteen.

This investigation also revealed that no significant interaction occurred for locus of control and age. It can be speculated that the age of the adolescent does not guarantee insight or internality. The older adolescent may have the capacity for internalization of control but may not have developed these capacities.

Limitations of the Study

One limitation of the study was that some students classified as nulliparous were engaging in unprotected intercourse yet had not become pregnant. The study would have been improved if information about the adolescents' sexual behavior and contraceptive use had been included on the sociodemographic data questionnaire or in a personal interview.

A major limitation in the interpretation of the results of this study is the fact that the adolescents' locus of control may have changed as a result of the pregnancy.

The final limitation of this study was a lack of assessment by the researcher of the adolescents sexual reproductive knowledge. This limitation was somewhat controlled by limiting the study to one school system where relevant sex education courses were taught. A pretest to

measure sexual reproductive knowledge for the pregnant and nulliparous adolescent would have made this study more valid.

Comparison to Similar Investigations

No studies were found comparing locus of control of pregnant and nulliparous adolescents. Four studies comparing locus of control of contraceptive users and non users were found. Ralph, Lochman and Thomas (1984) reported that only one in five of the adolescents in their study who were sexually active utilized any form of birth control. These contraceptive users were also found to be more internally controlled than non users of contraceptives.

Brown (1982) found that 43.2% of adolescent males felt that contraception was the females responsibility. However, that study did not actually measure locus of control of the subjects but presented statements made by the subjects that indicated external locus of control, i.e., "If she gets knocked up it is not my fault," and "There wasn't really nothing I could do about it," or "Like it really didn't matter what I thought because it was her, not me" (p. 3). One can make the assumption from statements made in this study that these males were not feeling responsible for the pregnancy of their girl friends.

In a 1970 study, MacDonald demonstrated that 62% of single, sexually-active female college students who had internal locus of control as measured by Rotter's I-E Scale, utilized contraception, while 37% of those who were identified as having external locus of

control did not. In a study by Lundy (1972) of sexually-active college females, it was found that contraceptive users were more internal than nonusers. LOC was estimated by utilizing Rotter's I-E Scale.

Implications for Nursing Interventions

Results of the present study provide some evidence that in adolescents locus of control should be a considered factor. It is in the area of education and health promotion that the nurse can make the greatest impact on unintended pregnancy.

Education

Based on Orem's self-care theoretical care construct, self-efficacy (belief that one can perform necessary behaviors to promote positive health outcomes) is the achievable goal in patient education (Redman, 1985). Self efficacy is related to Orem's self-care theory and Piaget's cognitive development theory. Self efficacy postulates that different influences alter behavior by strengthening expectations of personal efficacy. Reinforcement is believed to affect behavior by creating expectations that behaving in a certain way will produce benefits. Adolescents who are taught to internalize responsibility are also taught self-care and self efficacy.

The responsibility of nursing is to assist adolescents in their self-determination concerning their life outcomes. Perception of control over their life is increasingly recognized as an important

determinant of behavior (Orem, 1985). Nurses must assess the self-care capacity and deficits of the teenagers they are teaching. A careful assessment of the teenager will include the personality characteristic of locus of control.

Health Promotion

There is evidence that persons with internal locus of control engage in health seeking behaviors such as information seeking and utilizing contraceptives. With the focus of nursing as the promotion of health, an understanding of human behavior is essential to facilitate adolescents level of health practice. Piaget provided the framework for an understanding of the adolescent's stage of reasoning. This researcher, however, upon questioning teen mothers, has found that they have little conceptualization of the future. They seem less aware of the future implications of child-rearing, and they have a tendency toward passivity. Nurses of pregnant adolescents must place an emphasis on self-care and self-control with the teenager taking the major responsibility for her future.

Externally controlled teenagers may benefit from contracting with the nurse. First the teenager can be asked to set personal goals and can then be expected to participate in meeting them. If the teenager can identify the problem, unintended pregnancy, and set goals to avoid the problem, she is learning to become more involved in her own care. These adolescents will require a close interpersonal relationship with the nurse in an accepting environment which encourages openness and self-care strategies.

Arakelian (1980) discussed currently accepted methods to promote internality: (1) reconstrual of stimuli (e.g., altering perspectives so that a teenager sees himself/herself as a controller of others' reactions rather than a victim); (2) an action-oriented approach (e.g., teaching a patient problem-solving skills); and (3) a counseling approach (e.g., challenging externally-oriented verbalizations and rewarding internally-oriented ones).

It is imperative for the nurse to identify how important being in control of their life might be to the adolescent. Identification of the locus of control of the teenager you are teaching, sharing this information with the teenager, and utilizing different strategies that promote self-care, may assure better outcomes related to unintended pregnancy.

Implications for Future Research

Most research to date on teenage pregnancy has focused on medical and economic outcomes. The focus of this study was on the personal variable of locus of control as a factor in unintended teenage pregnancy. A prospective longitudinal study with measurements of LOC at several points in time is needed to determine if LOC changes over time, how it changes and the relationship of LOC to unintended pregnancy.

Knowledge of current societal mores will assist practitioners in viewing teenage pregnancy in a realistic light. According to the literature reviewed, sex education is inadequate. One approach which

should be studied is the wider use of media for relevant sex education directed at both parents and teenagers. Inclusion of the adolescent father in future studies would be beneficial. Little has been written about adolescent male sexual decision-making. Adolescent males should be exposed to self-care activities including responsible sexual decision-making.

Present knowledge about adolescent sexuality is somewhat limited due to many problems in the investigation of what people consider a very sensitive issue. More research that considers the present and future lives of adolescents, including the sexual aspects of their lives, are needed.

Future research should address the area of cognitive development of the adolescent. Age and locus of control yielded no significant interaction in regard to pregnancy in this study. To assume that all 15 year-olds have the advanced cognitive skills described by Piaget may be an assumption that will impede reaching teenagers in an effort to provide needed sex information. Once we understand how the individual processes information and makes decisions we will be better able to meet his/her needs at an appropriate developmental level.

Summary

This study supported the conclusion that pregnant adolescents are operating from a more external LOC than nulliparous adolescents. Nurses who work with adolescents need to assess LOC of these adolescents. Locus of control can be somewhat altered by encouraging

the adolescent to become involved in self-care. This may be accomplished by asking the adolescent to set goals and objectives to meet these goals. Further research is needed to identify the other factors possibly associated with teenage pregnancy. Adolescent fathers must be considered in future studies of adolescent decision-making.

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APPENDIXES

APPENDIX A



I. B. TIGRETT JUNIOR HIGH SCHOOL

Tommy W. Allen, Principal

716 Westwood Avenue • Telephone 422-2342
Jackson, Tennessee
38301

Dear Research Committee:

Ms. Webb has my permission to administer Rotters I/E scale to our students. I understand that our students will be identified by number only and the data collected by Ms. Webb will be accessible to the research team only.

Sincerely,

Tommy W. Allen, Principal

APPENDIX B



I. B. TIGRETT JUNIOR HIGH SCHOOL

Tommy W. Allen, Principal

716 Westwood Avenue • Telephone 422-2342
Jackson, Tennessee
38301

Dear Parent or Guardian:

Your signature below indicates your willingness for your teenage daughter to participate in a study being conducted by Nelda Webb, R.N. Instructor of Nursing at Union University and a graduate student of the University of Tennessee, Knoxville, College of Nursing. The major faculty advisor is Pat Droppleman, R.N., Ph.D. The purpose of the study is to assess personality traits of teenagers.

Your daughter will be asked to complete a 29-item written scale during Family Life Class time. Completion of the scale will take about 20 minutes.

There will be no physical discomfort or risks and all information received will be kept confidential in a locked file cabinet in the investigator's office and shared only with the research team. Your daughter will be identified by a number only. Participation in this study is voluntary. You can withdraw from the study at any time by notifying the investigator.

Permission has been granted by Tommy Allen, Principal to use Tigrett as a facility to gather data.

I am available to answer any questions. You may call me at work (668-1818) or at home (668-1798).

Please check the box below and include your address if you would like me to send you a summary of the results of the study.

Thank you,

Nelda Webb

Nelda Webb

Signature of Parent or Guardian _____ Date _____

[] Check here for summary and include your address.

APPENDIX C

Informed Consent for Students in

Family Life Class

Dear Student,

You are invited to participate in a study developed to assess personality factors of teenagers.

No negative effects will result from your participation in this study. Your co-operation will help provide researchers with insight about teenage personality factors.

All data will be confidential. You will be coded by a number only. Your participation in this project is voluntary and your consent for participation may be withdrawn at any time.

I have read and understand the above statements. I consent to participation in this project.

Signed _____

Date _____

If you have questions, please contact:

Nelda Webb, RN *Nelda Webb*

Union University

Jackson, TN 38301

APPENDIX D

Instrument: Rotter's Internal-External Locus of Control Scale

- 1.a. Children get into trouble because their parents punish them too much.
b. The trouble with most children nowadays is that their parents are too easy with them.
- 2.a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
- 3.a. One of the major reasons why we have wars is because people don't take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.
- 4.a. In the long run people get the respect they deserve in this world.
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
- 5.a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
- 6.a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
- 7.a. No matter how hard you try, some people just don't like you.
b. People who can't get others to like them don't understand how to get along with others.
- 8.a. Heredity plays the major role in determining one's personality.
b. It is one's experiences in life which determine what they're like.
- 9.a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
- 10.a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
- 11.a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
b. Getting a good job depends mainly on being in the right place at the right time.
- 12.a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power, and there is not much the little guy can do about it.
- 13.a. When I make plans, I am almost certain that I can make them work.
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

- 14.a. There are certain people who are just no good.
 - b. There is some good in everybody.
- 15.a. In my case getting what I want has little or nothing to do with luck.
 - b. Many times we might just as well decide what to do by flipping a coin.
- 16.a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
 - b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
- 17.a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
 - b. By taking an active part in political and social affairs the people can control world events.
- 18.a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
 - b. There really is no such thing as "luck."
- 19.a. One should always be willing to admit mistakes.
 - b. It is usually best to cover up one's mistakes.
- 20.a. It is hard to know whether or not a person really likes you.
 - b. How many friends you have depends upon how nice a person you are.
- 21.a. In the long run the bad things that happen to us are balanced by the good ones.
 - b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
- 22.a. With enough effort we can wipe out political corruption.
 - b. It is difficult for people to have much control over the things politicians do in office.
- 23.a. Sometimes I can't understand how teachers arrive at the grades they give.
 - b. There is a direct connection between how hard I study and the grades I get.
- 24.a. A good leader expects people to decide for themselves what they should do.
 - b. A good leader makes it clear to everybody what their jobs are.
- 25.a. Many times I feel that I have little influence over the things that happen to me.
 - b. It is impossible for me to believe that chance or luck plays an important role in my life.
- 26.a. People are lonely because they don't try to be friendly.
 - b. There's not much use in trying too hard to please people, if they like you, they like you.
- 27.a. There is too much emphasis on athletics in high school.
 - b. Team sports are an excellent way to build character.
- 28.a. What happens to me is my own doing.
 - b. Sometimes I feel that I don't have enough control over the direction my life is taking.
- 29.a. Most of the time I can't understand why politicians behave the way they do.
 - b. In the long run the people are responsible for bad government on a national as well as on a local level.

APPENDIX E

ID No. _____

Demographic Data for Students

Directions: Please answer the following questions.

1. How old are you? _____
2. What is your total family income?
 - A. More than \$25,000 per year
 - B. \$10,000-\$25,000 per year
 - C. Less than \$10,000 per year
3. What grade are you in school? _____
4. Are your parents married?
5. Do you live with: a) both parents, b) one parent
c) someone else? Circle the correct answer.
6. Who lives in your house (ex. mother, father, brothers, etc.)?
7. Race _____

APPENDIX F

JACKSON-MADISON COUNTY
HEALTH DEPARTMENT

745 West Forest • Jackson, Tennessee 38301 • Telephone 901-423-3020

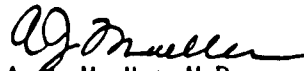
A. J. MUELLER, M.D.
Director

To Whom It May Concern:

Nelda Webb has my permission to administer the personality test to patients at this clinic.

She has discussed the purpose of her study with me.

Sincerely,


A. J. Mueller, M.D.

OPERATED IN COOPERATION WITH THE TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

APPENDIX G

JACKSON-MADISON COUNTY HEALTH DEPARTMENT

745 West Forest • Jackson, Tennessee 38301 • Telephone 901-423-3020

A. J. MUELLER, M.D.
Director

Dear Parent or Guardian:

Your signature below indicates your willingness for your teenage daughter to participate in a study being conducted by Nelda Webb, R.N. Instructor of Nursing at Union University and a graduate student of the University of Tennessee, Knoxville, College of Nursing. The major faculty advisor is Pat Droppleman, R.N., Ph.D. The purpose of the study is to assess personality traits of teenagers.

Your daughter will be asked to complete a 29-item written scale during prenatal visit to the Health Department. Completion of the scale will take about 20 minutes.

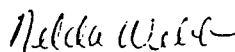
There will be no physical discomfort or risks and all information received will be kept confidential in a locked file cabinet in the investigator's office and shared only with the research team. Your daughter will be identified by a number only. Participation in this study is voluntary. You can withdraw from the study at any time by notifying the investigator.

Permission has been granted by Dr. Mueller Director, to use West Tennessee Public Health Department as a facility to gather data.

I am available to answer any questions. You may call me at work (668-1818) or at home (668-1798).

Please check the box below and include your address if you would like me to send you a summary of the results of the study.

Thank you,



Nelda Webb

Signature of Parent or Guardian _____ Date _____

☐ Check here for summary and include your address.

OPERATED IN COOPERATION WITH THE TENNESSEE DEPARTMENT OF HEALTH AND ENVIRONMENT

APPENDIX H

Informed Consent for Clients in Prenatal Clinic

Dear Client:

You are invited to participate in a study developed to assess personality factors of teenagers.

No negative effects will result from your participation in this study. Your co-operation will help provide researchers with insight about teenage personality factors.

All data will be confidential. You will be coded by a number only. Your participation in this project is voluntary and your consent for participation may be withdrawn at any time.

I have read and understand the above statements. I consent to participation in this project.

Signed _____

Date _____

If you have questions, please contact:

Nelda Webb, RN *Nelda Webb*

Union University

Jackson, TN 38305

APPENDIX I

ID No. _____

Demographic Data Clients at Public Health Department

Directions: Please answer the following questions.

1. How old are you?
2. What is your total family income?
A. More than \$25,000 per year B. \$10,000-\$25,000 per year
C. Less than \$10,000 per year
3. Are you still in school? Yes or No
4. If you are in school, what grade? _____
5. Are you married?
6. Are your parents married?
7. Do you live with: a) both parents b) one parent c) someone else? Circle the correct answer.
8. Who lives in your house (ex. father, mother, brothers, etc.)?
9. Race? _____

VITA

Nelda M. Webb was born in Jackson, Tennessee, and was educated in local public schools in Jackson. She was graduated from Union University Associate Degree program in 1976 and received the Bachelor's Degree in Nursing from Union in 1983.

She held positions of staff nurse, head nurse and supervisor of the 3000 delivery per year Maternal/Child Nursing Department at the Jackson Madison County General Hospital from 1976-1983. She has taught in the School of Nursing at Union University since 1983.

Nelda also teaches childbirth classes for expectant parents, and sex education classes for local junior and senior high schools. She is a member of the American Nurses Association and the Tennessee Nurses Association.

Awards include Outstanding Clinical Nurse Graduate in the ASN program, presented by Union University's School of Nursing Faculty, Outstanding Nurse Graduate in the BSN program, presented by the Tennessee Nurses Association. Additionally, Nelda was selected the Outstanding Nurse Educator by the graduating nursing students in the ASN program in 1986.