

CONTRACEPTIVE USE IN FEMALE ADOLESCENTS IN
RELATION TO LOCUS OF CONTROL

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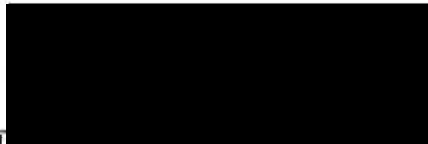
Patricia H. Glazier, R.N., B.S.N.

A THESIS

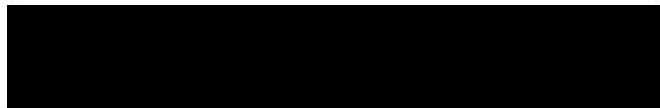
Presented to
The Oregon Health Sciences University
School of Nursing
in partical fulfillment
of the requirements for the degree of

Master of Nursing

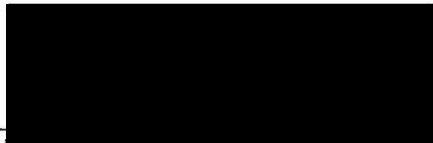
APPROVED:



Carol Howe, C.N.M., D.N.Sc., Thesis Advisor



Shirley Marcy, R.N., M.S.N., P.N.P., W.H.C.N.P., First Reader



Linda Wheeler, C.N.M., D.Ed., Second Reader



Carol A. Lindeman, Ph.D., Dean, School of Nursing

This study was supported by traineeships from the United States Public Health Service Grant Numbers 2 ALL NU 00250-07 and 2 ALL NU 00250-08.

ACKNOWLEDGEMENTS

I would like to thank my advisor, Carol Howe for her guidance and expertise. I also thank Shirley Marcy and Linda Wheeler for their warm support and sense of realism during this project.

I am grateful to the County Health Department administration and staff for allowing me to use their facility. Their enthusiasm, cooperation and smiles helped to make my job easier. I thank them all.

Finally, I would like to express my gratitude to my friends and family for their encouragement and confidence and to Phil for his unwavering love, patience and understanding. I appreciate each of these individuals for their special contributions in assisting me in this endeavor.

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CHAPTER I

INTRODUCTION

Adolescent sexual activity continues to be a major concern in American society. According to statistics gathered in 1979 from metropolitan areas, 50% of women aged 15-19 and 70% of men aged 17-21 reported that they had experienced sexual intercourse (Zelnik & Shah, 1983). A more recent survey of 3,563 young women living in metropolitan areas showed that 18% of women aged 15-19 who were exposed to the risk of unintended pregnancy used no contraception. Seven percent used rhythm and/or withdrawal (Forrest and Henshaw, 1983).

Teenage pregnancy has notable consequences to the mother encompassing social, medical, behavioral, psychological and educational areas. Medical problems include increased incidences of pregnancy-induced hypertension, anemia and labor complications (McAnarney, Roghmann, Adams, et al, 1978). Adolescent mothers are also more likely than women over age twenty to experience inadequate education and low income or welfare dependency (Zelnick & Kantner, 1978; Alan Guttmacher Institute, 1981).

Risks to the infants of adolescent mothers include an increased incidence of low birth weight infants, perinatal mortality, congenital malformations and mental retardation. Infants born to these young mothers are at greater risk for neglect and physical and/or mental abuse (Phipps-Yonas, 1980).

Early research on adolescent pregnancy focused primarily on the

identification of demographic variables to pinpoint populations at risk. However, it was soon noted that ethnic background or socio-economic status did not in themselves result in effective or ineffective contraceptive practices (Urberg, 1982).

Researchers have studied adolescent pregnancy and contraceptive use from a number of perspectives including factors both internal and external to the individual. Peer pressure has been cited as a factor (Youngs, Neibly, Blake, Shipp, Stanley & King, 1977) as has lack of knowledge regarding the outcome of unprotected intercourse and lack of knowledge regarding reproduction and contraception (Heisler & Friedman, 1980). Other authors have attempted to correlate contraceptive success with developmental and cognitive stages (Blum & Resnick, 1982), sex role development (Cvetkovich, Grote, Lieberman & Miller, 1978), and certain psychological parameters such as the need for intimacy, the desire for dominance and submission, the need to belong, the exploration and acquisition of competence, and rebelliousness and negative identity (Mitchell, 1972). Reasons offered by adolescents for not using birth control include the belief that contraception is morally wrong and dangerous (Zelnick & Kantner, 1978), fear that parents would find out about the contraceptives (Clark, 1981) and the assumption by teenagers that they did not engage in intercourse often enough to become pregnant (Evans, Selstad & Welcher, 1976).

Lack of knowledge has been perhaps the most popular explanation of adolescent contraceptive failure. Sex education has long been advocated as a solution to the problem of adolescent sexual activity and pregnancy. Even though by June 1980, 43 out of 50 states presented

sex education courses in their public school systems the incidence of adolescent pregnancy is still increasing (Kenney & Alexander, 1980). One may ask why sex education is not more effective in reversing the trend of increasing adolescent pregnancies. It is possible that insufficient general information is imparted or even that specific birth control knowledge is neglected. However, it has been demonstrated that even with accurate knowledge of sexuality and contraception, adolescents continue to become pregnant at an alarming rate (Zelnick & Kim, 1982).

Another possible explanation for contraceptive failure is the adolescent's belief that they have no control over their own contraceptive use or its effectiveness. Some investigators, looking at personal control measures, have suggested that adolescents and adults are better contraceptive users when they possess an internal locus of control (MacDonald, 1970; Lundy, 1972; Steinlauf, 1979). Locus of control defines the degree to which a person believes that he/she is in control of his/her fate. An internally oriented person believes that control is in his/her hands while an externally oriented individual perceives that powerful others control his/her life and that chance or fate often determines the outcome of events (Rotter, 1966).

Perhaps the association between locus of control and contraceptive use is spurious. Other research has indicated that even before any education is provided, those with external control possess less information regarding health issues than those with internal control (Strickland, 1978). Therefore, decreased effective contraceptive use

may possibly be due to lack of knowledge rather than internal versus external locus of control.

The interrelationships among knowledge, locus of control, and contraceptive use are the primary focus of this study. This research is a replication of a study done by Moffit in 1982. Specifically, the question to be asked is: Controlling for knowledge of contraception, will adolescents with an internal locus of control practice contraception more successfully than adolescents with an external locus of control?

Review of the Literature

To more fully understand the relationship of locus of control and knowledge of contraception to effective contraceptive use, the specific interrelationships between these variables must be considered. The following literature review will explore the relationship of contraceptive knowledge to contraceptive use followed by literature relating health knowledge and locus of control. Finally the relationship of locus of control and contraceptive use will be explored.

Contraceptive Knowledge and Contraceptive Use

Whether or not sex education enhances contraceptive use in adolescents remains controversial. The literature contains research which has examined the effect of various sex education programs on contraceptive use. Some of this research has studied already existing sex education programs in public schools. For example, one multivariate study looked at the knowledge of human reproduction and contraception of male high school students, the extent of their sexual activity and

use of contraception, and the impact of a sex education class on their knowledge and behavior (Finkel & Finkel, 1975). A total of 421 male students enrolled in three high schools in a northeastern city completed a questionnaire. This questionnaire was pre-tested on adolescents of similar age and socio-economic status. Only six of the 46 items were designed to elicit knowledge about human reproduction and contraception. The six questions dealt with use of condoms, douching, withdrawal, female fertility and characteristics of human sperm. Although two-thirds of the students knew that douching was not a reliable method of birth control, less than one-third (31.9%) knew that pregnancy may occur even if one practices withdrawal. According to the overall results, nearly 57% of the male students answered four or more statements correctly (one point per correct answer). This score was analyzed further by comparing those students who had taken a mandatory hygiene course that included sex education with those who had not. Data indicated that 62% of those students who had taken the course scored 4-6 points on the reproduction/contraception section while 47% of those who had not yet taken the course achieved that score. The scores (62% and 47%) were not appreciably different from the overall mean score of 57%.

Utilization of contraception at last intercourse was estimated by use of four categories: use of condom, female use of birth control (pill, loop, foam); use of withdrawal or douche, and no use of birth control. Fifty-five percent had relied on withdrawal or douche or had used nothing. Twenty-eight percent had used a condom while 17% reported that their partner had used the pill, loop or foam.

This study attempted to illustrate the need for sex education in the promotion of responsible contraceptive use. Unfortunately, the authors did not correlate knowledge of contraception to contraceptive use although they had stated that as a purpose of their research. The study did report that sexual activity had begun for nearly half of their sexually active group by age 13. The data suggested that birth control programs need to reach out to younger adolescents.

This study could have been strengthened by indicating how the questions were selected for their particular questionnaire. Further, it is difficult to determine contraceptive use based solely on the reported use at last intercourse.

In a paper published in 1982, Zelnick and Kim studied the effect of sex education in schools upon sexual activity, contraceptive use or the likelihood of pregnancy. The data came from two national surveys (1976 and 1979) of women aged 15-19 years, living in metropolitan areas. The authors also compared black and white samples.

Data showed the proportion of women who reported having sex education instruction between 1976 and 1979 increased for whites (72 to 78%) while decreasing for blacks (79 to 71%). However, it appeared that the use of prescription birth control methods was somewhat independent of sex education. Blacks were more likely to use a prescription method if they had had sex education. In contrast, white females were less likely to use prescription contraceptives if they had had sex education. Finally, when looking at those females who had ever used a birth control method, females

with sex education courses were more likely to have used some contraceptive method. These results provide mixed support for the need and value of sex education for adolescents.

Since the sample came from metropolitan areas, generalization to rural adolescents is limited. Further, it was not documented that the adolescents took a sex education course before initiating sexual activity, beginning use of contraceptives, or becoming pregnant. Finally, the question remains whether sex education courses result in greater contraceptive use or whether they tend to attract teenagers who might have been expected to practice contraception anyway.

Other research studied the effects of sex education provided by health clinics. For example, one such program was organized and staffed by a hospital maternal and infant care facility in St. Paul, Minnesota. This comprehensive health clinic was situated on a high school campus and provided general sex education instructions, general health exams, pelvic exams and contraceptive services. Eighty-six percent of those students who received contraceptive prescriptions at this clinic continued use during the first year with no pregnancies. The researchers continued to follow this population. Over a three year period the entire school's "fertility" rate dropped by 56%. The staff also followed each student that dropped out of school and noted that the decline in "fertility" was not due to abortion, but to consistent contraceptive use (Brann, Edwards & Calicott, 1979). Whether or not the consistent use of contraceptives was directly related to the education the participants

received or to the availability of the birth control methods is still unknown. Possibly, use of a control group could have made this aspect clearer.

Reichelt and Werley (1975) studied contraception and venereal disease with regard to sexual knowledge. This study was conducted in Detroit and explored whether or not education in the areas of contraception and general sexual awareness resulted in improved knowledge. Their sample of 1,190 high school students completed a questionnaire eliciting demographic information and a test of sexual and contraceptive knowledge. Those females, (36% of the original sample) who selected the birth control Pill returned in ten weeks for supplies and were asked to complete the same questionnaire again.

At the first testing the researchers noted that the teenagers were poorly informed in most areas. Mean scores for all teenagers were 43% correct for total knowledge and only 36% correct for birth control knowledge. An informal "rap" session was then provided for all participants. All participants then completed a post test. In addition, those adolescents who selected oral contraceptives were tested again at a 10 week follow up visit. All post tests indicated improvement in knowledge.

The original hypothesis of the study was upheld by the results. Drawbacks to the study include the fact that a skewed population was used for re-test purposes. This group consisted only of Pill users and may have received more intensive counseling due to their selected methods. Eighty-eight percent of the teenagers were women and seven

out of ten were white. The ability to generalize findings is hampered by the homogeneity of the sample.

Although studies of sex education programs have frequently indicated some success many adolescents still fail to use contraception despite their participation in such education. Various reasons have been offered to explain this fact. Perhaps the content of these programs are not specific enough to be useful (Guttmacher Institute, 1981). Perhaps the content is relevant and useful but the manner in which it is presented is inappropriate for eliciting desired behavioral changes. In evaluating different approaches to health education it might be helpful to know how people link their own behaviors to the causes of diseases or the state of their own wellness. Causality is an idea which is basic to locus of control.

Perhaps an individual's locus of control may play a role in his/her ability to benefit from educational programs. The contradictory results obtained about sex education and contraceptive use could be explained by a relationship between sex education and the individual's belief in his/her ability to use this knowledge. This relationship will, therefore, be explored more fully.

Health Knowledge and Locus of Control

Locus of control refers to an individual's expectation that a particular event occurs as a result of a specific behavior. If the individual believes that the event, or reinforcement (reward), is not entirely contingent upon his action, then it is perceived as the result of luck, chance, fate or as under the control of powerful others. This perception is labeled as external control. If the individual

believes the reinforcement is contingent upon his/her own personal behavior then he/she is considered to possess an internal locus of control (Rotter, 1966). Social Learning Theory provides the theoretical background for the effects of reinforcement on learning. In this theory "a reinforcement acts to strengthen an expectancy that a particular behavior or event will be followed by that reinforcement in the future" (Rotter, 1966, page 2).

Several studies have attempted to show that if people do not believe they can control events in their lives, they are not likely to take action to influence these events (Strickland, 1978). Initial research began in the 1960's and dealt with several population groups and circumstances. Few studies have dealt specifically with health or contraceptive use.

One of the earliest studies which attempted to link locus of control and health knowledge was a study dealing with hospitalized tuberculosis patients (Seeman & Evans, 1962). Locus of control, or the degree of powerlessness, was seen as related to the concept of alienation in this research. The authors attempted to support the hypothesis that high alienation or high degree of powerlessness is linked positively with limited knowledge. The reasoning behind this hypothesis was that "knowledge acquisition is irrelevant for those who believe that fate, luck or chance control the fall of events" (page 773).

The study design was a quasi-experimental procedure in which the authors controlled contaminating variables by matching samples. A 12-item Alienation Scale was utilized to measure powerlessness. The

measure of knowledge was a modified version of a 20-item test prepared by the National Tuberculosis Association. There was a statistically significant ($p \leq .05$) difference in scores between groups. Those with high alienation scores demonstrated less knowledge about their illness.

Rotter's I-E Scale was used by Phares (1968) to demonstrate that those with internal control (internals) are more effective in the utilization of information. This particular scale is 29-item scale with six fillers scored in such a way that a high score reflects an external orientation. Phares hoped to demonstrate that an internal orientation provided a "greater potential for competence or effectiveness" (page 651). The sample consisted of 214 male volunteer students enrolled in general psychology classes. From this pool subjects from the upper 31% and lower 28% of the I-E distribution were chosen. These subjects were further divided into experimental and control groups. It is not known if the subjects were randomly assigned to these groups.

The experimental procedure involved three steps. All experimental subjects were presented material which they learned to the criterion of one perfect recall trial. These subjects were then brought back after seven days at which time they were presented with a task, the solution of which required the utilization of the material they had previously learned. Following this a formal retention test was given. For control subjects the procedure was identical except that upon his return after seven days the subject was given only a retention test. Major results indicated: (1) internals and externals did not differ in the acquisition of information; (2) internals did differ from

externals in the amount of material utilized to complete the task presented to them, in that internals presented more material with greater accuracy than externals; and (3) control groups of internals and externals failed to support "differential retention" as an explanation for internal's greater ability to utilize material (Phares, 1968, page 661).

This study supported the idea that internals utilized information acquired at the same level of proficiency better than externals. Strengths of the study included it's experimental design and the fact that there was an attempt to control for initial learning in order to study differential retention and utilization of material more accurately.

In a study conducted by Wallston (1976) a coed sample of 88 college students was given a health related locus of control scale and a measure of the value placed on health. This particular study was one of the first in a series of studies to utilize a more specific measure of locus of control. The college students were then exposed to a mildly threatening written message about hypertension and given an opportunity to seek further information about this topic. The hypothesis being tested suggested that an individual who "values a healthy life and believes that he/she can control his/her own health will perceive preventive information as being more instrumental in meeting his/her goals" (page 217). The subjects were then placed in four different categories according to their locus of control and amount of value placed on health. Categories were arranged as follows; internal with high health value, internal with low health

value, external with high value and external with low value. Results noted that subjects who were rated in the internal/high value of health group sought out more information than any of the other subject groups ($p \leq .05$).

Although the above mentioned studies support the hypothesis that locus of control and knowledge utilization are linked, it was not until the 1980's that this idea was related to contraceptive knowledge. A study conducted by Moffitt (1982) investigated an individual's locus of control and the amount of sexual and contraceptive knowledge the individual possessed. Moffitt's study was an ex-post facto design using a sample of 78 female adolescents ages 15-19 ($\bar{X}=17.4$). The subjects were primarily of lower soci-economic status and entirely caucasian. Thirty-eight percent were high school dropouts. These factors limit the ability to generalize to other adolescents.

Locus of Control was measured by a locus of control scale related more specifically to health (Wallston, Wallston & DeVillis, 1978). Knowledge of sexuality and contraception was measured by the Reichelt & Werley (1975) Sex Knowledge Test. The mean score of 27.5 on the Internal Health Locus of Control Scale indicated a tendency toward a moderately high internal locus of control. Moffitt further noted that in this sample the correlation between the Sex Knowledge Test and internal locus of control was not significant ($r=-.21$). The study attempted to explain this phenomenon by suggesting that even if this sample were internally controlled, they might not value the avoidance of an unplanned pregnancy as much as a sample of

middle-class, college bound teenagers. The author further suggested that it is possible the same principles do not govern the search for knowledge about other health concerns as govern the search for contraceptive information.

Research regarding the relationship between locus of control and knowledge is minimal at best. Studies have basically supported the hypothesis that those individuals with an internal locus of control tend to either possess more knowledge initially, or seek out additional knowledge about a particular health related concern.

It would seem that the more information an individual possesses about a particular health related concern, the greater the likelihood that person would take positive steps to alleviate that concern. Research has supported the hypothesis that individuals differ in their ability to seek out and utilize input based on their locus of control (Phares, 1968; Wallston, Maides & Wallston, 1976).

During a review of research concerned with locus of control and health related behaviors Strickland (1978) concluded that

"...when faced with health problems, internal individuals do appear to engage in more generally adaptive responses than do externals. These range from engagement in preventive and precautionary health measures through appropriate remedial strategies when disease or disorder occurs"(p. 1205).

Based on this theoretical view, it may be predicted that internals, if they are sexually active and not desiring pregnancy, would use contraceptives more often than externals. Therefore, the following section will focus on the relationship of locus of control to

actual use of contraceptives.

Locus of Control and Contraceptive Use

MacDonald (1970) was the first researcher to study locus of control and the practice of birth control. He hypothesized that "externals might be less likely to control their pregnancies since they lack belief in personal control in general" (page 205). A sample of 508 undergraduate females at West Virginia University was used. Of the 508 questionnaires distributed, the author selected those 212 females who scored in the upper and lower 27% of the Rotter's I-E Scale. Data gathered from married and non-married subjects were analyzed separately. Data reported that 54% (40 of 85) of the internal subjects and 56% (58 of 103) of the external subjects had no premarital coitus. The reporting of this data is confusing as it is not known if these statistics included both married and unmarried students and if some of these students were not sexually active thus requiring no birth control.

Unmarried subjects were asked, "What method of contraception do you use to prevent pregnancy?" and were only provided with two choices, "no birth control practiced" and "birth control practiced" (page 206). Sixty-two percent of the internals reported that they practiced some form of birth control, in contrast to 37% of the externals ($p < .05$). Married subjects did not differ significantly based upon locus of control.

Contraceptive use in this study was seen as a dichotomous variable without regard to the particular effectiveness of the method used. It is unknown whether or not the internalized

individuals used effective methods or ineffective methods and used them correctly or incorrectly.

Segal & DuCette (1973) studied locus of control and birth control use looking specifically at pre-marital high school pregnancy. The authors hypothesized that internal adolescents would know more about contraception, would more likely use contraceptives and would therefore be less likely to become pregnant.

The sample was taken from two metropolitan high-schools. School 1 consisted of black adolescents from a lower soci-economic class and school 2 was white and middle-class. It is unclear how social class was determined. Allowing only juniors and seniors to participate, the final sample consisted of 92 black females from school 1 and 73 white females from school 2. Procedures for selection of the participants were not described.

The researchers used Rotter's I-E Scale along with a self-report measure and school records to ascertain incidences of pregnancy among the sample population. It is difficult to be certain that all adolescents in the sample were truthful about the incidence of pregnancy. "Incidences of pregnancy" was not well defined and it is unknown if these included both full term pregnancies as well as those that were terminated.

The results showed that the internal adolescents in the lower-class black school demonstrated a higher incidence of pregnancy, while in school 2 an internal locus of control was associated with a lower pregnancy risk. The mean locus of control scores of internals and externals combined did not differ between black and white adolescents.

Only 22% (20 out of 93 females) of the black sample and 12% (9 out of 73 females) of the white sample reported pregnancy. These numbers are small and make widespread application of these results difficult. Segal and DuCette did attempt to explain the inverse and unexpected nature of the relationship of pregnancy rates and locus of control for blacks by projecting what pregnancy possibly meant for these students. Pregnancy, the authors felt, may not be acceptable for a white middle-class adolescent whereas for the black lower-class teenagers pregnancy may be a wanted and socially acceptable event.

Harvey (1976) studied those individuals who used more effective contraceptives (Pill and IUD) in comparison with users of less effective contraceptives (diaphragm, foam and condom, rhythm and no contraception). One-hundred ninety-one sexually active female undergraduates were randomly drawn from second and third year students in a Western Canadian university. Rotter's I-E Scale and items related to sexual experience and past and/or anticipated use of various contraceptives were used. The original sample size was reduced by 58 subjects who failed to complete some or all of the items on the I-E Scale. Written comments by the respondents indicated frustration and irritation with the choices provided in some of the items. Of those subjects who did complete all the items, users of effective contraceptives did not differ significantly from users of less effective contraceptives with respect to locus of control. No discussion was offered to explain this result.

In 1979, Herold, et al, studying locus of control, self-esteem

and contraceptive behavior, hypothesized that young women with an internal locus of control would,

"have a more positive attitude towards using contraception, would be less embarrassed about obtaining contraception and would more likely use effective contraception consistently than young women with an external locus of control" (page 84).

The data were extracted from a larger study of sexual attitudes and behavior. Four hundred eighty-six single women attending 10 birth control and pregnancy counseling centers in Ontario were used. Data was obtained by a closed-ended questionnaire administered when the subjects arrived at the clinics and before any counseling or exam was performed. In this study locus of control was tested by use of the Fatalism subscale of Reid and Ware's forced choice I-E Scale. This scale was chosen over Rotter's because it was apparently felt to be more suitable for samples of young people. The authors looked only at attitudes about the birth control pill.

No significant relationship between locus of control and the variables of self-esteem or contraceptive use was found. Even when further tested by the comparison of two extreme groups within the original sample 68 birth control users and 79 women who had never used the Pill or IUD and were being tested for pregnancy the results were not significant. The authors offered two explanations for these results. One factor cited was the subjects dislike of the forced-choice format of the majority of locus of control scales. In Harvey's study (1976) 25% of the female students failed to respond to Rotter's I-E Scale and many reported having some difficulty with the items.

The same was true of the Reid-Ware Scale. Secondly, the authors question the usefulness of measuring generalized locus of control expectancies when researchers desire to measure behavior in specific settings. Both issues need to be considered when measuring locus of control.

Still another measure of locus of control was used by Steinlauf (1979) in her study of problem-solving skills, locus of control and contraceptive effectiveness. Like others, the author hypothesized that effective contraception was related to internal control. Steinlauf used Levinson's Internal Control Scale and Chance Control Scale. The scale was not included and no reasons were provided for use of this particular scale. The sample of young women was derived from both an abortion clinic (N=78) and a Planned Parenthood clinic (N=77). Ages ranged from 15-26 years (mean =20.6). Fifty-two percent of the sample was white and 47% was black. Variables included locus of control, problem solving skills, anxiety, age and race. These variables were treated as predictor variables and were analyzed by means of correlation and regression analysis. A correlation was found between chance control and the numbers of unplanned pregnancies in the women under 20.6 years of age ($p \leq .05$).

Data from the two sites were then analyzed separately. For those women in the abortion clinic only, the number of unplanned pregnancies was found to be positively and significantly related to Chance Control ($p \leq .01$). For this group Steinlauf's hypothesis was supported. Data from the Planned Parenthood sample were not reported.

In 1975 Lieberman (1981) studied the correlation of contraceptive

attitudes, knowledge and practice with locus of control. Her sample was drawn from a Basic Health class at Westchester State College in Pennsylvania. Of 250 students, 205 agreed to participate. However, only 104 responses were analyzed, as those who were married, had children, were over 25 years of age or who were not sexually active were excluded. In the final sample of 104 students, 75% were considered to be using effective methods of contraception all or most of the time. Contraceptive behavior was elicited by two questions. One, the type of contraception used listed on a scale of one to four, from minimum to maximum effectiveness. Contraceptive consistency was similarly rated from most consistent use to never use of birth control.

No discussion was provided to possibly explain the high percentage of good contraceptors. Perhaps this sample demonstrated greater responsibility and consistent contraceptive use by virtue of their age and college education and goals. No significant relationship was found between locus of control and use of effective contraceptives.

The studies previously mentioned have several problems inherent in their conceptualization and methods. The I-E variable is only one of many variables which may converge to predict health behaviors and attitudes. For example, whether or not adolescents seek out and use contraceptives may be a combined function of their financial condition, the personal value placed on being pregnant or not being pregnant, and developmental levels as well as their beliefs about personal control of reinforcement.

Methodological weaknesses are apparent in much of the I-E/health research. One particular problem has to do with the measurement of I-E expectancies. As was noted previously, numerous I-E assessment instruments were and are being used. For example, although Rotter's I-E Scale is a broad, generalized expectancy measure and predicts in a broader range of situations, it is becoming more accepted that to predict a specific expectancy, one needs a more specific measurement tool (Rotter, 1975).

In summary, an individual's locus of control may affect the extent to which that individual seeks out information and uses it. With respect to the present study, this means that adolescents with an internal locus of control may differ from adolescents with an external locus of control in their willingness to seek out and possess contraceptive information and then act in accordance with it.

Statement of the Problem

The review of the literature suggests that individuals who demonstrate health behaviors such as effective contraceptive use are more likely to have an internal locus of control (MacDonald, 1970; Lundy, 1972; Steinlauf, 1979). Second, it is clear that effective use of contraceptives requires knowledge about reproduction and the specific birth control methods. However, the relationships between locus of control, knowledge and effective contraceptive use still are uncertain.

This present study is a replication of an earlier study by Moffitt (1982). The decision to repeat Moffitt's research is based

on a genuine desire to identify variables which may affect adolescent contraceptive use. The present research will differ in the type of sample to be studied. Moffitt's sample consisted solely of those female adolescents suspecting pregnancy. The replication will study a more diverse population with hopes to support the hypotheses.

The purpose of this study is threefold. First, the relationship between locus of control of sexually active adolescent women and their effective use of contraceptives will be assessed. It is expected that those adolescents with an internal locus of control will take more initiative toward preventing pregnancy. Second, the relationship between knowledge of contraception and the individual's locus of control will be evaluated. It is predicted that those adolescents with an internal locus of control will possess greater contraceptive knowledge. The third purpose is to rule out a spurious relationship between internal locus of control and effective contraceptive use which may be due solely to the greater amount of knowledge possibly possessed by internals.

Conceptual Framework

The conceptual framework from which this research originates stems, primarily from Social Learning Theory (Rotter, 1954). More specifically, the research encompasses a particular construct within this theory; locus of control. Locus of control is defined by Rotter as follows:

" . . .The degree to which an individual perceives that the reward follows from, or is contingent

upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions" (Rotter, 1966, page 1).

In Social Learning Theory, the potential for any behavior to occur in a given situation, is a function of the person's expectancy that the given behavior will secure the available reinforcement, and the given value of the reinforcement for that person (Rotter, 1966). More specifically, the control construct is considered a generalized expectancy and operates across a large number of situations. Control further relates to whether or not the individual perceives a causal relationship between his own behavior and the reinforcement (Rotter, 1966).

The perception of a causal relationship may vary in degree. When a reinforcement is perceived by the individual as following some personal action but not being entirely based upon this action, then it is perceived as the result of fate, luck, chance, under the influence of powerful others, or as unpredictable due to the complexity of the surrounding forces. This belief is labeled as external control. If the person perceives that an event is solely the product of his own behavior, this is considered internal control (Rotter, 1966).

Locus of control can be seen to relate to contraceptive utilization in two ways. The first is in the acquisition of knowledge. The literature suggests that those individuals possessing an internal locus of control seek out additional information about areas that are of personal concern to them (Seeman & Evans, 1962;

Wallston, 1976). Secondly, locus of control may affect the behavior itself. If an adolescent believes that a pregnancy is a direct outcome of her own behavior and she perceives a pregnancy as undesirable, then she will most likely utilize contraception to prevent a pregnancy. A major assumption here is that pregnancy is an undesired state in the adolescent and that avoidance of pregnancy is seen as a positive reinforcement to contraceptive behavior.

Based on the fact that the literature has demonstrated that internal locus of control has been associated with higher levels of knowledge acquisition and utilization as well as with a greater frequency of effective contraceptive use, the following hypotheses will be tested:

Hypotheses

- 1). Sexually active teenage women with an internal locus of control will show higher levels of contraception knowledge than those with an external locus of control.
- 2). Sexually active teenage women with an internal locus of control will report effective contraceptive use more frequently than those with an external locus of control.
- 3). When knowledge of contraception is controlled for, sexually active teenage women with an internal locus of control will report effective use of contraception more frequently than those women with an external locus of control.

Significance to Nursing

Most individuals assume that a change in level of knowledge would in turn change behavior and eventually health habits and customs. Even though improved health is the goal, most measurements of instructional success have relied only on tests of cognitive knowledge (Parcel, Nader & Robers, 1980). Since the literature has shown that knowledge is necessary but not sufficient for effective use of birth control, it is being recognized that a large number of other variables may influence the contraceptive habits and behavior of individuals. Programs and individuals involved in education need to take into account the different processes by which specific behaviors such as effective contraceptive practices are learned.

Educational research has recognized the need to match different learning styles with complimentary instructional methodology or teaching styles (Dunn, Dunn & Price, 1977). Knowing the locus of control of a sexually active female adolescent may assist the nurse in selecting the educational method best suited to adequately teach her about contraceptives. For example, external students may learn better with high structure or deductive methods while internal students may excel more with use of a low structure methodology (Horak & Horak, 1982; Brewer, Tolefson & Fine, 1981; Strickland, 1978).

Other authors have postulated that teaching should not be geared to the client's locus of control, but rather the client's locus of control should be modified. Generally an internal locus of control is seen as more likely to result in preventative health measure. Parcel, et al state (1980):

"If an internal locus of control for health is necessary for individuals to be able to assume responsibility for behavior known to promote health, then health education programs must provide learning activities that will reinforce an internal locus of control" (Page 36).

In other words, while the traditional approach to health education focused primarily on content, a new approach could be focused more on the process by which the goal directed behavior is learned.

Therefore, establishing a relationship between locus of control, contraceptive knowledge and effective contraceptive use could pave the way to two possible intervention strategies. One could be to formulate an educational approach specific to external oriented individuals as well as one designed for internals. The other strategy could involve reinforcement of internal locus of control in external individuals thereby hoping to show them their own ability to control their health behaviors and practices.

CHAPTER II

METHODS

Setting

This study was conducted at a county Family Planning Clinic and its satellite clinic in Oregon. This federally and county-funded Family Planning Program provides the following services:

- 1). Pregnancy counseling and testing.
- 2). Family Planning counseling, education and services.
- 3). History and physical examination.
- 4). Referral services for infertility and abortion.

The Family Planning Clinic served approximately 550 adolescents between the ages of 13 and 19 years during fiscal 1982-1983. Ninety-three percent of this population was white.

Clients are scheduled for appointments on the basis of the purpose of the appointment. Those clients requesting contraceptives are required to attend a "methods" class as well as undergo a complete physical examination. Questions are answered and additional information provided by the nurse practitioner during the examination.

Clients being scheduled for a suspected pregnancy are given appointments at specific times during regular clinic hours. Clients are provided pregnancy testing services as well as counseling and a pelvic examination by the nurse practitioner for the purpose of confirming the results of a positive test. Those clients receiving a negative pregnancy test are also provided counseling.

Subjects

A convenience sample was drawn from the two clinic sites comprising all those adolescents meeting the criteria for inclusion in this study. For inclusion the adolescent had to be between 13 and 19 years of age at the time of the visit, sexually active prior to the visit, coming to the clinic for contraception or a suspected pregnancy and have never been pregnant prior to this visit. The participants could be of any marital status and might be either new or previous clients to the clinic.

Consecutive admissions to the clinic with Monday afternoon appointments at the satellite clinic as well as Thursday and Friday afternoon appointments at the main clinic were screened for inclusion in this study. Screening was performed by this researcher as well as the receptionists at the admission desk. Consent forms were also obtained at this time.

Design and Procedure

The Director of the clinics was contacted for permission to conduct this correlational ex post facto study. Adolescent clients were asked to participate at the time of their initial arrival. The participants were informed that all information was confidential and that refusal or agreement to participate would not affect any clinic services.

Upon arrival at the clinic, the client reported to the admission desk. The client then completed a clinic information intake form (Appendix E), which provides the clinic with background medical and

social information. Then the researcher or the admission clerks approached potential subjects and asked the client to participate in the study. The client was asked to read through an explanation of the study and decide if she was eligible to participate. If the client agreed she was given a copy of the consent form (Appendix A), the Multidimensional Health Locus of Control Scale (Appendix B), the Contraceptive Knowledge Questionnaire (Appendix C), and the Contraceptive Use Survey (Appendix D). She was asked to complete these forms while she waited for her appointment. After completion she was instructed to return the forms to the researcher, who was also available to answer questions. The packet took approximately 15-20 minutes to complete.

Data Collection

By means of a questionnaire each participant's locus of control was determined along with her knowledge of contraception. By means of the Contraceptive Knowledge and Use Survey the participant reported her choice and use of contraceptives.

Independent Variables

The independent variables in this ex post facto study were. (1) the client's health locus of control, and (2) the level of sex and contraceptive knowledge as determined by the sex knowledge test score.

Health Locus of Control

Locus of Control has been defined as the degree to which a

person believes he/she is in control of his/her fate. In this study, locus of control was measured by version A of the Multidimensional Health Locus of Control Scale (MHLC) developed by Wallston, et al (1978). (See Appendix B)

This particular scale was chosen over other locus of control scales because it was developed to refer specifically to perception of control over health matters. Contraceptive use can be viewed as a preventative health behavior against unwanted pregnancy if one assumes that adolescent pregnancy is unwanted.

The MHLC scales measure three factors assumed to affect a sense of control over health. The factors are "internality", "powerful others", and "chance". Six items make up each of these three scales. Measurement of each item is by a 6-point Likert Scale, ranging from strongly disagree (1) to strongly agree (6). The score for each scale can range from 6 to 36 points. The higher the score for each scale, the greater the person's belief that his/her own health is influenced by one's personal actions, by chance, or by powerful others respectively.

The Internal Health Locus of Control Scale (IHLC) measures the extent to which one perceives that he/she influences and controls his/her health. An example of the items on this scale is;

"The main thing which affects my health is
what I myself do."

A highly internal person would respond to this statement with an answer of "strongly agree."

The powerful others subscale (PHLC) measures the perception

that other people are responsible for a specific individual's life and health. An example of this belief is as follows:

"Regarding my health, I can only do what my doctor tells me to do."

The third factor, chance (CHLC), refers to the belief that determination of one's life and health is in the hands of chance, fate, or luck. For example:

"My good health is largely a matter of good fortune."

The IHLC measures internal locus of control whereas the PHLC and CHLC address an external orientation.

Wallston, et al (1976) report acceptable internal consistency for their scale (alpha reliability of .72). A later validation (Wallston, et al, 1980) reported alpha reliabilities ranging from .67 to .77. The three scales (IHLC, PHLC, and CHLC), are considered to be independent of each other.

Concurrent validity of the MHLC is demonstrated by a .33 correlation ($p \leq .01$) with Rotter's I-E Scale. Wallston's scale also shared a 10% common variance with the more established measure of locus of control. The discriminant validity was enhanced by the low overlap with the Rotter I-E Scale (Wallston, et al, 1976). According to the Wallston's, this overlap was kept purposely low so that their "new test not correlate too highly with measures from which it was supposed to differ" (page 581).

Knowledge of Contraception

The amount of knowledge subjects possessed regarding contraceptives was measured by the Reichelt and Werley Sex and

Contraceptive Knowledge Questionnaire (Appendix C). This questionnaire has 44 items and was designed for use by high school students. Thirty-six of these items refer specifically to contraception and were used in this research. The wording of the items avoids any subcultural slang and can be easily understood by the adolescent. The questionnaire has been used with teenagers as young as 13 and takes approximately 10 minutes to complete.

The questionnaire is primarily a test of knowledge although it also contains some attitudinal questions (#3 and #8). The first two questions deal with the respondent's source of sexual knowledge.

Twenty-five statements in the questionnaire concern specific methods of birth control including the Pill, IUD, Diaphragm, condom, the spermicidal foams and jellies, withdrawal and rhythm. Eleven items cover such topics as menstruation and fertility.

A three-point scale allowed the subject to respond to each question by circling "true", "false", and "don't know". In this research, as others, the number of correct responses for items 4-36, excluding items #8 and #11, were used in scoring this test. Each correct response represented a score of 1 point. Scores could range from 0 (no correct response) to 31 (all 31 items correctly answered).

Content validity of the questionnaire was established by obtaining items from various scientific literature sources which were then reviewed by a panel of professionals (Reichelt and Werley, 1975). Testing the stability of the tool was tested through a test-retest situation. However, a reliability coefficient was not reported.

Dependent Variable

The dependent variable in this study was effectiveness of contraceptive use. It was measured by the scale developed by Howe (1980). This scale consists of items 11, 12, 13, 14, 15, and 16 of the Contraceptive Knowledge and Use Survey (Appendix D). The measure of overall effectiveness (EFF) is made up of three subscales, thereby assessing effectiveness in three different time frames. These time frames are contraceptive use in general (GEF), use during the past two months (PEF), and use at last intercourse (LEF). For each subscale a raw score will be tabulated by adding points for the contraceptive method used (range 0 to 3 points), to the frequency of use of the contraceptive (range 1 to 3 points). Therefore, for each subscale a person could receive a score ranging from 1 to 6 points. (Please refer to Appendix F for further details of scoring). Values for the EFF also range from 1 to 6 points.

Howe maintains that calculating a mean score, rather than a cumulative one is more reliable. For example, if an adolescent reports no contraceptive use in the past two months because she has not had intercourse, the score will not be falsely low (Howe, 1980).

Reliability relies heavily on the honesty of the respondent. Generally, self-report is impossible to verify. Therefore, it was imperative that the participants felt confident that their responses were strictly confidential and anonymous.

Additional Data

Demographic data such as age, marital status, education and

socio-economic status was obtained from the Contraceptive Use Survey (Appendix D). Duncan's Socio-Economic Index (SEI) was used to measure socio-economic status. Utilization of the SEI requires a description of the occupation of the head of the household and subsequent translation into an occupational code by the researcher. The code is then converted into an already existing SEI score. Validity of the Duncan SEI Scale is reported to be highly stable over time ($r=.99$ from 1947-1963) and across social systems (Miller, 1977).

CHAPTER III

RESULTS AND DISCUSSION

Description of Sample

From February 16, 1984 to March 23, 1984, 38 clients at the County Health Department met the criteria for inclusion in this study and were asked to participate. Seven of these clients failed to adequately complete the questionnaires. Thirty-one females completed the packet representing a response rate of 81%. To be included in this study participants had to have appointments for pregnancy testing, contraception or counseling. All subjects came for contraception or counseling with no one presenting themselves for pregnancy testing. In this respect, the sample differed from Moffitt's (1982) who were all suspecting an unwanted pregnancy.

Selected characteristics of the participants are presented in Table I. The mean age was 17 years. All ages between 13 and 19 years were represented with only five adolescents (16%) below age 16. The mean age in Moffitt's (1982) study was 17.4 years which is comparable with the mean age for the present entirely Caucasian family planning clinic sample.

Socio-economic status was measured by the Duncan-Reiss Socioeconomic Index and calculated on the basis of the occupation of the client, her mother, her father or her partner, whichever was highest. Scores ranged from a low of 9 to a high of 61. The mean value of 31.2 represents semi-skilled, blue collar occupations. Seventy-four percent of the heads of household were at or below the

Table 1

Selected Characteristics of Study Sample from County Health Department
Family Planning Clinic (N = 31)

Characteristics	Number	Percent
Age (years)		
13	1	3.2%
14	2	6.5
15	2	6.5
16	6	19.4
17	6	19.4
18	7	22.6
19	7	22.6
Mean	17.03	----
Education (years completed)		
8	3	9.7%
9	2	6.5
10	7	22.6
11	7	22.6
12	6	19.4
13+	6	19.4
Mean years	11.00	----
Socioeconomic Status (a)		
0 - 19 (unskilled labor)	7	25.9%
20 - 39 (semi-skilled)	16	59.3
40 - 59 (semi-professional)	3	11.1
60 - 79 (executives)	1	3.7
*		
Mean Score	31.25	
Employment		
Yes	14	45.2%
No	17	54.8
Marital Status		
Married	2	6.5%
Living with Partner	3	9.7
Single	26	83.9

(a) Score on the Duncan-Reiss Socioeconomic Index (1961).

* 4 subjects chose not to answer this question or could not be classified.

index level of 37, denoting mostly semi-skilled occupations. The mean socio-economic level of Moffitt's (1982) sample was only slightly lower at 28.

Forty-five percent of the present sample were employed compared with Moffitt's study (1982) of which only 30% of her sample were employed. During the year 1981-1982 when Moffitt's study was conducted, the Oregon economy was depressed. Government funds were not available to provide jobs for adolescents. Recently however, the economic climate has strengthened. Government subsidies for adolescent employment have increased, as have job opportunities in the private sector. Perhaps also, this present sample found it necessary to work while attending school. Parents alone may not be able to provide their children with enough money for entertainment, clothing, school, etc. More adolescents are assuming responsibility for meeting his/her own financial needs.

Most young women in the sample were single (84%). Ten percent were living with a partner and only 6.5% were married. Sixty-one percent of the sample were still in junior high or high school while the remainder were either out of school or in college. It is unknown if any of these participants were high school dropouts. In summary, the sample may be described as white, predominantly low-income, adolescent females. Due to the homogeneous nature of this sample, it is not reasonable to generalize the results of this study to other groups of adolescents.

Descriptive Findings Regarding Major Variables

Health Locus of Control

Three separate scores were derived from the Multidimensional Health Locus of Control Scale measuring the dimensions of "internality" (IHLC), "powerful others" (PHLC), and "chance" (CHLC). The scores of the participants on the IHLC ranged from 20 to 35 points out of a possible high of 36. (See Table 2) The greatest percentage of the adolescents clustered between 25 and 30 (61%). The mean score of 27.8 illustrates a rather strong tendency toward an internal locus of control. These findings are almost identical to the results noted by Moffitt (1982). Perhaps this sample was more internal by virtue of the fact that they were seeking contraception before they suspected a pregnancy. They took responsibility for their own sexual behavior by securing a contraceptive method.

The second dimension (PHLC) is the belief, by the individual, that "powerful others" control her health. The mean score for this dimension was 17.1 and the range was 8 to 26 out of a possible 36. Apparently, this sample of adolescents did not believe that powerful others controlled their health to any significant degree. This mean score is slightly lower than the mean of 18.6 reported by Moffitt (1982).

The last dimension (CHLC) is the belief that fate or chance determines the health of the individual. The scores for this scale ranged from 7 to 23 with a mean of 15.9, as contrasted with Moffitt's sample mean of 17.2. Twenty-one represents the mid-point of each scale and it is evident that this sample subscribed more to the belief

Table 2

Scores of Adolescents on Multidimensional Health Locus of Control

Scales: Mean Scores, Standard Deviations and Intercorrelations.

(N = 31)

	Mean Score	S.D.	Range	Pearson's r	
				PHLC	CHLC
Internality (IHLC)	27.84	3.73	20-35	.14	-.16
Powerful Others (PHLC)	17.16	5.13	8-26	----	.57*
Chance (CHLC)	15.90	4.86	7-23		----

* $p < .001$

that they control their health and less to the belief that chance or powerful others control their health behaviors.

Correlations for the three pairs of scales are also listed in Table 2. The coefficient of .57 between the CHLC and PHLC was significant ($p < .001$) indicating that an individual's belief that powerful others control one's health is related to the belief that chance may also affect one's health. There was a positive correlation ($r = .14$), between IHLC and PHLC rather than a negative one as might be expected. This correlation was quite low however and not statistically significant. The correlation between IHLC and CHLC was negative ($r = -.16$) but not significant.

Knowledge of Contraception

The Reichelt and Werley (1975) Sex Knowledge Test (SKT) was used to measure the amount of knowledge the participants possessed about various aspects of sexuality, contraception and reproduction. This test was administered to all participants prior to their appointment with the nurse practitioner or a class on birth control methods. Each adolescent received a score derived from summing the correct number of answers. Scores ranged from 4 to 30 out of a possible 34 points. The mean score of 21 demonstrates a rather low level of knowledge. The average teenager only answered 62% of the 34 questions correctly. Moffitt (1982) obtained a slightly higher mean score of 27 for her sample of 78 female adolescents.

Table 3 reports the percentages of correct responses to each individual item of the SKT for the present sample, the sample used by Moffitt (1982) and the sample studied by Reichelt and Werley (1975).

Questions 3 and 8 were attitudinal in nature and therefore were not measured as indices of contraceptive knowledge. By reviewing the specific scores, it appears that Moffit's sample was more knowledgeable in areas pertaining to the birth control pill and use of condoms. The present sample possessed more knowledge about miscellaneous methods and various aspects of reproduction.

It appeared that lack of knowledge and information was the trend rather than just incorrect information. For example, the amount of general knowledge possessed about the birth control pill was rather limited. Only 32% (N=10) of this sample obtained a correct score for item 16 which dealt with the effectiveness of the Pill when taken with other medications. While 32% marked it incorrect, 35% stated they did not know the answer. When asked if the Pill must be stopped every year for three months (item 14), 36% (N=11) of the adolescents did not know the answer while only 3% obtained an incorrect score. Finally, 45% of the sample did not know the answer to question 17 which dealt with the use of alcohol while taking the Pill (23% marked it incorrect). Even though the Pill was named as a first choice of contraception by 74% of those who had ever used a birth control method, it is discouraging to note the limited amount of knowledge possessed about it.

Lack of knowledge also appeared to affect the area of condoms. When looking at the answers given to the question addressing the strength of condoms (item 26), only five adolescents answered correctly while the majority either obtained an incorrect score or marked "do not know". Although this method was the most popular

Table 3

A Comparison of Correct Responses of Adolescents from Current Study, Moffitt's Study (1982) and Reichelt and Werley (1975) to Questions on the Sex Knowledge Test by Questionnaire Item.

Questionnaire Item	<u>Percent of Correct Responses by Study</u>		
	Current (1984) N = 31	Moffitt (1982) N = 78	Reichelt (1975) N = 1,190
<u>Misc. Methods & Reproduction:</u>			
3. I don't know as much as I would like about birth control.	(a)	(a)	(a)
4. Rhythm is a highly effective method of birth control. (F)	52%	59%	49%
5. A girl can get pregnant the first time she has intercourse. (T)	97	91	76
6. Douching after intercourse is a highly effective birth control method. (F)	81	86	58
7. Sperm can live in the female's reproductive tract for about 72 hours (T)	74	67	43
8. Oral-genital sex is a common practice.	(a)	(a)	(a)
9. If a woman doesn't have an orgasm during intercourse, she can't get pregnant. (F)	87	79	70
10. Withdrawal is a highly effective birth control method. (F)	90	70	61

Table 3 (cont'd)

Questionnaire Item	Percent of Correct Responses by Study		
	Current (1984) N = 31	Moffit (1982) N = 78	Reichelt (1975) N = 1,190
11. Swallowing sperm can make a woman pregnant (F)	(a)	(a)	(a)
<u>Menstruation (monthly period):</u>			
12. Menstruation is a clearing out of the uterus to prepare again for a possible pregnancy. (T)	71%	74%	74%
13. A woman's fertile time (when she is most likely to become pregnant) covers the middle of the interval between her periods. (T)	48	64	64
<u>The Birth Control Pill:</u>			
14. The Pill must be stopped every year for three months. (F)	61	68	32
15. The Pill is generally dangerous to use. (F)	77	59	65
16. The Pill may be taken along with other medications without decreasing its effectiveness. (T)	32	21	31
17. The Pill may be taken by a girl who uses alcohol and/or other drugs. (T)	32	40	33
18. The Pill may not be taken if the woman has a history of certain illnesses. (T)	48	81	39
19. The Pill is the most effective method of birth control. (T)	48	72	72

Table 3 (cont'd)

Questionnaire Item	Percent of Correct Responses by Study		
	Current (1984) N = 31	Moffit (1982) N = 78	Reichelt (1975) N = 1,190
<u>The Diaphragm:</u>			
20. The diaphragm must be worn at all times. (F)	68%	71%	40%
21. A diaphragm should be used only after having been fitted by a doctor. (T)	77	81	55
22. The effectiveness of the diaphragm is increased when used with cream or jelly. (T)	68	56	34
23. The diaphragm cannot be felt by either the man or woman when properly in place. (T)	68	64	44
<u>The Condom (rubber):</u>			
24. Using a rubber can help prevent the spread of venereal disease. (T)	80	78	66
25. A rubber should be tested before use. (T)	36	53	55
26. Rubbers break easily. (F)	16	26	19
27. The rubber should be held around the base of the man's penis when withdrawn. (T)	61	68	48
<u>The IUD:</u>			
28. The IUD is inserted before each act of intercourse. (F)	65	62	39
29. The IUD cannot be felt by the man or woman during intercourse. (T)	65	55	37

Table 3 (cont'd)

Questionnaire Item	Percent of Correct Responses by Study		
	Current (1984) N = 31	Moffitt (1982) N = 78	Reichelt (1975) N = 1,190
30. The IUD is the second most effective method of birth control. (T)	52%	49%	29%
31. The IUD usually works best if the uterus has been stretched by a previous pregnancy. (T)	36	27	20
<u>Foams, Creams and Jellies:</u>			
32. They should be inserted just before each act of intercourse. (T)	68	67	37
33. They work by killing sperm. (T)	84	78	63
34. They can be bought without a prescription in any drug store. (T)	81	60	67
35. When used with a rubber, they are a highly effective method of birth control. (T)	71	72	41
36. They should be washed out with a douche immediately after intercourse. (F)	23	58	16

Correct answer to each item is shown in parentheses following each statement. T = true; F = false.

- (a) These items were not reported in Moffitt's study (1982) or Reichelt and Werley's study (1975).

second choice of birth control, 45% of the sample did not know that a condom should be tested before use and 19.4% answered it incorrectly. Lack of knowledge can take two forms. First, that the information imparted to these individuals was incorrect and second, that no information regarding specific areas of contraception was given.

Forty-eight percent of the sample answered item 13 correctly demonstrating knowledge of a woman's fertile time during the cycle. However, 42% stated they did not know and 10% marked it incorrectly. This particular lack of knowledge about a woman's fertile time has also been noted by previous research. This research found that their samples of adolescents lacked basic biological information on the female menstrual cycle and the period of greatest risk of pregnancy (Finkel & Finkel, 1975; Zelnick & Kantner, 1977; Smith, Weinman & Mumford, 1982). Lastly, 81% knew that douching is not an effective method of birth control, and over 90% recognized that pregnancy can occur during first intercourse and that withdrawal is unreliable.

The sample was asked to identify their main source of information about sex, birth control, pregnancy and/or human sexuality. The source listed most often was friends with parents a distant second. Previous research also found friends to be a major source of information (Finkel & Finkel, 1975; Reichelt & Werley, 1975). Gebhard (1977) found that at the present adolescents are more likely to receive important information from mothers than in years past but, also noted that parents still rate poorly in communicating information. It appears that these sources of information are either not knowledgeable or are not able to adequately communicate information regarding

sexuality and contraception.

Overall, this sample was poorly informed about most methods of birth control. Further, there were nine items which were answered correctly by less than 50% of the participants. The lack of knowledge was found most prominently in the areas of the birth control pill and use of condoms. These responses approximated those results obtained by Moffitt (1982) and were better overall than those from the Reichelt and Werley study (1975).

Effectiveness of Contraception

Contraceptive effectiveness was measured by a scale concerned with both the type of contraception used as well as the self reported frequency of use. These two factors were assessed in three time frames (use in general, use in the last two months, and use at last intercourse). For each participant a score was calculated for each time frame with a mean score obtained from these three scores to determine Overall Effectiveness (EFF). (Scoring details may be found in Appendix F.) EFF scores ranged from 1 to 6. Individual scores clustered at the values of 1, 2, and 6. Fifteen (48%) of the participants obtained a mean score of 6. This high score illustrates use of a highly effective method such as the birth control pill, IUD, diaphragm or foam and condoms, "always" or "most of the time". Nine participants (29%) scored 2 or less illustrating "seldom" or "never" use of ineffective methods such as withdrawal, douche, rhythm or use of no contraception at all.

The reported overall effectiveness use significantly correlated with the amount of education ($p=.001$), socioeconomic status ($p=.012$)

and age ($p=.002$) of the participants. (See Table 4). Goldsmith (1972) and Zelnick and Kantner (1977) also found that effective contraceptive use increased as the age of female adolescents increased from 13 to 19 years. In contrast, Howe (1980) and Moffitt (1982) found no significant correlation between contraceptive effectiveness and the above mentioned variables.

The EFF scores also correlated significantly with the score obtained from each of the three time frames (see Table 5). This indicates that the effectiveness measure is internally consistent and reliable. Further, the EFF score correlated significantly ($r=.81$, $p \leq .001$) with the participants responses to the question on the Contraceptive Use Survey which asked "Are you currently using a method of birth control?" This correlation speaks to the participants consistency in responding to the questions on the use of contraceptive methods.

Finally, EFF was significantly correlated with knowledge ($r=.36$, $p \leq .05$). This correlation supports earlier findings of Finkel and Finkel, 1975, Reichelt and Werley, 1975 and Zelnick and Kim, 1982. These studies noted that contraceptive use increased and/or became more consistent when individuals possessed greater amounts of knowledge about contraception. Apparently, for the current sample, this premise holds true.

Findings Regarding the Hypotheses

Hypothesis 1 - Sexually active teenage females with an internal locus of control will show higher levels of knowledge of contraception than

Table 4

Matrix of Pearsonian Correlation Coefficients of General Contraceptive Effectiveness (GEF), Past Two Months Effectiveness (PEF), Last Intercourse Effectiveness (LEF) and Overall Effectiveness Mean Score (EFF) in Relation to Age, Education (EDUC) and Socioeconomic Status (SES).

	AGE	EDUC	SES
GEF	.60***	.57***	.28 (ns)
PEF	.47**	.53***	.41*
LEF	.40*	.47**	.47**
EFF	.50***	.55***	.44*

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

Table 5

Matrix of Pearsonian Correlation Coefficients of General Effectiveness (GEF), Past Two Months Effectiveness (PEF), Effectiveness at Last Intercourse (LEF) and Overall Contraceptive Effectiveness Mean Score (EFF).

	GEF	PEF	LEF
EFF	.89***	.96***	.94***
GEF	-----	.82***	.77***
PEF		-----	.85***
LEF			-----

*** $p \leq .001$

those with an external locus of control.

There was no significant correlation between the amount of knowledge measured by the SKT and the Chance (CHLC) or Powerful Others (PHLC) scales. However, as predicted, the correlations were negative ($r = -.17$ and $r = -.20$, respectively). The correlation between knowledge and Internal locus of control (IHLC) was in the predicted positive direction but, also did not reach statistical significance ($r = .12$, n.s.). Therefore, Hypothesis 1 is not supported (see Table 6).

These findings are in opposition to prior studies regarding locus of control and health issues. Seeman and Evans (1962), Wallston, Wallston & DeVillis (1978) and Wallston, et al. (1976) have supported the view that internal individuals are more likely to seek out information regarding their health. However, Moffitt's study (1982) too did not bear this out and reported a negative correlation between IHLC and knowledge.

Moffitt (1982) proposed that perhaps adolescents from lower socioeconomic backgrounds and those who were high school dropouts might "not value the avoidance of an unplanned pregnancy as much as their college bound counterparts" (page 41). If these individuals do not fear an unplanned pregnancy then it seems reasonable to believe they would not even be interested in learning how to prevent one and thus possess limited contraceptive information. In the present sample the overall socioeconomic status was relatively low and the participants knew little about contraception. Nevertheless 50% of the sample used an effective method of birth control "always" or "most of the time".

Table 6

Matrix of Pearsonian Correlation Coefficients of Sex Knowledge Test (SKT), Internal Health Locus of Control (IHLC), Chance Health Locus of Control (CHLC), Powerful Others Health Locus of Control (PHLC), and Overall Effectiveness mean score (EFF).

Measure	SKT	IHLC	CHLC	PHLC	EFF
SKT	----	.12	-.17	-.20	.36*
IHLC		----	-.16	.14	.05
CHLC			----	.57***	-.08
PHLC				----	-.08
EFF					----

* $p \leq .05$

*** $p \leq .001$

The failure of the correlations to reach significance could also be due to the particular tools used to measure knowledge and locus of control. The following Cronbach-Alpha coefficients were obtained: SKT (.87), PHLC (.59), CHLC (.61) and IHLC (.47). The coefficients of the three dimensions of the locus of control scale were somewhat low indicating questionable reliability and internal consistency. In this particular study the reliability could have been weakened by the homogeneity of the sample as well as the limited number of items in each dimension of the locus of control scales.

Further, Wallston and Wallston (1981) put forth additional limitations of their instrument. Through their continued research they attempted to develop typologies using IHLC, PHLC, and CHLC. The belief that an internal is always someone high on IHLC and low on the other two scales may not be true. It may be that other combinations are also important and that most persons do not generally fall into pure typologies. They also acknowledged that using health locus of control (especially the internality dimension) as an independent variable to predict health-relevant behaviors has been an unproductive research approach.

The Sex Knowledge Test is also rather limited in its ability to adequately test contraceptive knowledge. The test does not address the basic mechanics on how to take the birth control pill. For example, questions are omitted concerning when to start the Pill during the menstrual cycle, what to do when pills are lost or forgotten or how long one must take the Pill before protection from pregnancy is reached. Further, no mention is made as to how long

the diaphragm is to remain in place following intercourse, how long one must wait until an IUD is effective or how soon before intercourse foam should be applied. It is dangerous to presume that these adolescents are aware of the mechanics of different birth control methods. Omissions of these types of questions tend to limit the adequacy of this instrument to measure reasonable and pertinent knowledge.

Hypothesis 2 - Sexually active teenage women with an internal locus of control will report effective contraceptive use more frequently than those with an external locus of control.

The correlation coefficients between Effectiveness (EFF) and Internal locus of control ($r=.05$), Chance ($r=-.08$) and Powerful Others ($r=-.08$) did not reach significance and thus provide no support for Hypothesis 2 (see Table 6). These results support Moffitt (1982). She too, found no correlation between locus of control and effective contraceptive use. The results, however, are in direct opposition to the previous findings of MacDonald (1970) and Steinlauf (1979).

There are a few possible reasons for the fact that statistical significance was not reached. First, Rotter (1975), Harvey (1976) and Wallston, et al. (1976) questioned the usefulness of measuring generalized locus of control expectancies when it was desired to measure behavior in specific settings or instances. The Multidimensional Health Locus of Control Scales are, indeed, more specific than other locus of control scales. However, it may be much too general when speaking to the very specific behavior of contraceptive use.

Another possible reason for the lack of statistical significance may be due to the sample. Each subject presented herself for education and contraception which would, in itself, presume some degree of internal control and responsibility. Further, the fact that this sample contained so many internally focused individuals could have skewed the results. The adolescent population as a whole was not well represented and if it were, might show differences not seen in this particular sample.

A final explanation may lie with the tool measuring Contraceptive Effectiveness. The studies cited in previous literature utilized a variety of measuring techniques to discern effective contraceptive use. For example, Segal and DuCette (1973) and Steinlauf (1979) counted the number of unplanned pregnancies to indicate contraceptive effectiveness or lack thereof. MacDonald (1970) utilized a self-report technique while Herold (1979) measured effectiveness by looking at those who only used the Pill compared with those who did not. None of these investigators reported on the validity of their method of measurement. Howe's Contraceptive Effectiveness Scale (1980) is a self-report tool and relies totally on the individual's accurate recall and truthfulness. This tool also projects the belief that contraceptive use is not an all-or-none behavior but, one of varying degrees. Perhaps effective contraception should be viewed from an all-or-none perspective since birth control should be employed at every instance of intercourse in order to adequately insure protection from undesired pregnancy.

Hypothesis 3 - When knowledge of contraception is controlled, sexually

active teenage women with an external locus of control will report effective use of contraception more frequently than those women with an external locus of control.

Due to the small sample size (N=31) a sophisticated statistical analysis such as multiple regression was not possible. Partial correlation was conducted to describe the relationship between locus of control and effective contraceptive use while adjusting for the effects of contraceptive knowledge. Partial correlation is indicated when the sample size is small and when a spurious relationship between variables is suspected. In essence, the effect of contraceptive knowledge was removed from the relationship between locus of control and contraceptive effectiveness without manipulating the raw data. Once one knows the linear relationship among the independent, dependent and control variable, the partial correlation coefficient can be calculated by constructing new independent and dependent variables with the effect of the control variable removed. In that analysis, the partial correlation of Overall Contraceptive Effectiveness (EFF) with Internality (IHLC) was .009; with Powerful Others (PHLC) was -.004 and with Chance (CHLC) was -.02. None of these correlation reached significance (see Table 7). It is therefore concluded that when knowledge of contraception is controlled, those teenage women with an internal locus of control do not use contraceptives more effectively than those with an external locus of control. Hypothesis 3 is not supported.

Knowledge of contraception was somewhat important for contraceptive effectiveness. However, it's effect alone could not

Table 7

Martix of Partial Correlation Coefficients of Internal Health Locus of Control (IHLC), Powerful Others Health Locus of Control (PHLC), Chance Health Locus of Control (CHLC) relation to Overall Contraceptive Effectiveness mean score (EFF) when knowledge of contraception is controlled.

Measure	EFF zero order partials	EFF partial r
IHLC	.05	.009 (ns)
PHLC	-.08	-.004 (ns)
CHLC	-.08	-.02 (ns)

insure consistent and effective contraceptive use. Apparently, these adolescents are not able to translate the information they possess into effective contraceptive practice. Why this failure occurs was the question that originally spurred Moffitt's (1982) study and the present replication. It was thought that the interaction of locus of control with knowledge of contraception might help to understand and explain this failure. Apparently, it did not. The aspects of internal and external control were unimportant in determining effective contraceptive use in the present sample. It is possible to suspect the finding and attribute the lack of support for the hypothesized relationship to weaknesses in method. Perhaps, flaw lay in the tool chosen to measure locus of control. Limitations of the instrument have been discussed earlier. The fault may lie in the conceptualization itself. Perhaps locus of control is not a relevant variable to behaviors in emotional areas such as sexuality or to the particular ages within the period of adolescence.

Moffitt (1982) postulated that the nature of her sample could have played a role in the lack of support for Hypothesis 3. As was stated earlier in the problem statement, Moffitt used only those teenagers who were suspecting pregnancy. It was thought that narrowing the sample to that degree was not representative enough of adolescents in general. The present study utilized a more diverse sample and still found no support for the hypothesis. The question now arises as to what variables play a significant role in determining contraceptive effectiveness. In the present sample knowledge played

some role but, locus of control was of little value in predicting contraceptive success or failure. If contraceptive knowledge is of limited value in explaining contraceptive effectiveness and locus of control is of even less significance, what are the variables which play a determining factor in contraceptive success or failure? Several possible variables have already been mentioned such as peer pressure (Youngs, Neibly, Blake, Shipp, Stanley and King, 1977), developmental and cognitive stages (Blum & Resnick, 1982), sex role development (Cvetkovich, Grote, Lieberman & Miller, 1978), belief by the adolescent that contraception is morally wrong or dangerous (Zelnick & Kantner, 1978) and the assumption by teenagers that they did not engage in intercourse often enough to become pregnant (Evans, Selstad & Welcher, 1976). None of these variables were controlled for or studied in this research. Their importance, however, has been cited in other adolescent research and should not be dismissed as possibly being relevant to the current study sample.

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Adolescent pregnancy, sometimes the outcome of unprotected teenage intercourse, has been described as a growing social phenomenon with negative social, economic, medical and educational outcomes. Many teenagers have chosen not to use contraception even though the availability of birth control has risen dramatically over the past few years. The purpose of this study was to explore selected variables which may affect the adolescent's use or non-use of contraception. The two variables chosen were locus of control and contraceptive knowledge with the purpose of exploring their effects on the use of contraceptives by sexually active adolescent females.

This study measured the self reported use of contraceptives by 31 adolescent females, aged 13 - 19, attending two family planning clinics for contraception and counseling. All participants were sexually active prior to their visit to the clinics. Contraceptive practices reported by the participants ranged from no use of birth control to use of oral contraceptives.

Three hypotheses were tested. First, sexually active teenage females with an internal locus of control would show higher levels of contraceptive knowledge than those adolescents with an external locus of control. This hypothesis was based on previous diverse research which associated internal locus of control with greater amounts of knowledge about health problems such as hypertension and tuberculosis. It was postulated that the association may also be

pertinent to preventive health behaviors such as use of contraception to prevent unwanted pregnancies. The second hypothesis stated that internal female adolescents would report effective contraceptive use more frequently than external adolescents. This premise was based on rather limited research which noted that internal individuals appeared to engage in more adaptive health behaviors than externals. The final hypothesis stated if knowledge of contraception was controlled, those teenage women with an internal locus of control would report more effective contraceptive use than those with an external locus of control. This particular hypothesis was generated for the purpose of ruling out a spurious relationship between internality and effective use of contraceptives which might have been due solely to the greater amount of knowledge that might be possessed by internals.

There was no support for any of the hypotheses. For this particular sample, data analysis showed a general trend in the predicted direction for Hypothesis 1 but results failed to reach statistical significance. Therefore, for this sample, it is concluded that those adolescents with an internal locus of control did not possess greater knowledge of contraception than adolescents with an external locus of control. Secondly, no relation was found between internal locus of control and effective contraceptive use. As with Moffitt's (1982) study the present sample's scores on the Multidimensional Health Locus of Control Scales were generally skewed towards the internal aspect of the internality scale. Lastly, internal locus of control did not correlate with contraceptive

effectiveness when knowledge was controlled.

It is apparent that more research is needed in the area of adolescent sexuality and contraceptive practices. The following recommendations are offered for future research. First, investigators concerned with specific health areas need to continue to develop more specific locus of control measures to suit their purposes. Second, it is suggested that future research explore how an unplanned pregnancy could affect an individual's present life as well as their future. However, assessment of personal values, especially those which are future oriented, may prove to be difficult with younger adolescents who are cognitively concrete and unable to imagine the future. Third, a broader more representative sample of adolescents should be studied. Finally, refinement of already existing instruments used to measure contraceptive knowledge and use should be considered.

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Appendix A
Introduction to Study
Client Consent Form

INTRODUCTION

My name is Pat Glazier and I am conducting a research study for my masters degree in nursing. I am trying to learn how young women make decisions about birth control. I am hoping to find out how I can help other young women learn about birth control and use it to prevent an unwanted pregnancy.

If you are at least 13 years old, no older than 19 years old, never been pregnant before this visit to the clinic, and here today for birth control, counseling, or a pregnancy test, I would appreciate it if you could take a few minutes to fill out this set of questionnaires. Participation in this study is absolutely voluntary. Your health care at this clinic will not change if you say yes or no. No names or numbers will be written on the questionnaires and no one else can ever find out that you filled them out today.

If you would like to fill out the questionnaires, please start now before you are called for your appointment. Feel free to ask me any questions during the time you are filling out the questionnaires.

Thank you very much for your help.

Pat Glazier

I, _____ agree to participate in the study named, Contraceptive Use in Female Adolescents in Relation to Locus of Control, by Patricia Glazier, RN, BSN, under the supervision of Carol Howe, CNM, DNSc. The purpose of this study is to gain information about how teenagers make decisions about a specific aspect of their health care; contraceptive use.

I understand that I will need to complete three (3) questionnaires which ask questions about my belief about what behavior determines my health, my knowledge about birth control, and my own use of contraceptives. Completing these questionnaires will take about 20 minutes.

I understand that there will probably be no direct benefit to me except perhaps to identify some subjects that I might want to ask the nurse practitioner about during my appointment.

I also understand that all information will be held in the strictest confidence. My questionnaire will not be labeled with my name or any number. Results will be reported as part of a larger group and no one will be able to identify my answers.

Patricia Glazier, RN has offered to answer any question I might have. I understand that I may refuse to participate, or withdraw from this study at any time without affecting my relationship with, or treatment at this clinic.

I have read the above and agree to participate in this study.

Participant signature

Date _____

Witness signature

Appendix B
Multidimensional Health Locus of Control Scale
(Form A)
(Wallston, Wallston & DeVellis, 1978)
(Questionnaire #1)

QUESTIONNAIRE #1

Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item please circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement, then the lower will be the number you circle. Please make sure that you answer every item and that you circle only one number per item. There are no right or wrong answers.

Please answer these items carefully, but do not spend too much time on any one item. It is important that you respond according to your actual beliefs and not according to how you feel you should believe or how you think we want you to believe.

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. If I get sick, it is my own behavior which decides how soon I get well again.	1	2	3	4	5	6
2. No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
3. Seeing my doctor regularly is the best way for me to avoid illness.	1	2	3	4	5	6
4. Most things that affect my health happen to me by accident.	1	2	3	4	5	6
5. Whenever I don't feel well, I should see a nurse or doctor.	1	2	3	4	5	6
6. I am in control of my health	1	2	3	4	5	6

	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
7. My family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
8. When I get sick I am to blame.	1	2	3	4	5	6
9. Luck plays a big part in deciding how soon I will recover from an illness.	1	2	3	4	5	6
10. Doctors and nurses control my health.	1	2	3	4	5	6
11. My good health is largely a matter of good fortune.	1	2	3	4	5	6
12. The main thing which affects my health is what I myself do.	1	2	3	4	5	6
13. If I take care of myself, I can avoid illness.	1	2	3	4	5	6
14. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
15. No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
16. If it's meant to be, I will stay healthy.	1	2	3	4	5	6
17. If I take the right actions, I can stay healthy.	1	2	3	4	5	6
18. Regarding my health, I can do only what my doctor tells me to do.	1	2	3	4	5	6

Appendix C
Contraceptive Knowledge Questionnaire
Reichelt & Werley (1975)
(Questionnaire #2)

QUESTIONNAIRE #2

1. Have you ever had serious conversations about sex, birth control, pregnancy, or human sexuality with: (CIRCLE YES OR NO FOR EACH PART OF THE QUESTION.)

Yes No -- your parents?

Yes No -- a teacher or school counselor?

Yes No -- a clergyman?

Yes No -- a doctor?

Yes No -- a nurse?

Yes No -- a male friend?

Yes No -- a female friend?

Yes No -- other (Write in) _____

2. What is the main source of your information about sex, birth control, pregnancy, or human sexuality? (CHECK ONLY ONE ANSWER.)

_____ friends

_____ books, magazines, newspapers, movies, etc.

_____ parents

_____ teachers or school counselors

_____ other (Write in) _____

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.

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

Menstruation (monthly period)

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

The Birth Control Pill

14. T F DK The pill must be stopped every year for three months.
15. T F DK The pill is generally dangerous to use.
16. T F DK The pill may be taken along with other medications without decreasing its effectiveness.
17. T F DK The pill may be taken by a girl who uses alcohol and/or drugs.
18. T F DK The pill may not be taken if the woman has a history of certain illnesses.
19. T F DK The pill is the most effective method of birth control.

The Diaphragm

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

The Condom (rubber)

24. T F DK Using a rubber can help prevent the spread of venereal disease.
25. T F DK A rubber should be tested before use.
26. T F DK Rubbers break easily.
27. T F DK The rubber should be held around the base of the man's penis when withdrawn.

The I.U.D. (intrauterine device, such as the loop or coil)

- 28. T F DK The I.U.D. is inserted before each act of intercourse (making love).
- 29. T F DK The I.U.D. cannot be felt by the man or woman during intercourse.
- 30. T F DK The I.U.D. is the second most effective method of birth control.
- 31. T F DK The I.U.D. usually works best if the uterus (womb) has been stretched by a previous pregnancy.

Foams, Creams, & Jellies

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

Appendix D
Contraceptive Use Survey
(Questionnaire #3)

QUESTIONNAIRE #3

1. Your date of birth _____ Age _____
2. City of residence _____
3. Present marital status (check one)
_____ married
_____ single, divorced, other _____
4. What is the last grade of school you finished? (please circle)
Grade school 1 2 3 4 5 6 7 8
High school 9 10 11 12
College 13 14 15 16
Post-graduate 17+
5. a) Please state your father's occupation if you are living with him.

b) Please state your mother's occupation if you are living with her.

c) Please state your husband's (or boy friend) occupation if you are living with him.

d) Please state your occupation if you support yourself or are married and working.

6. Are you employed?
_____ Yes _____ No
7. Do you attend school full time?
_____ Yes _____ No
8. Are you currently using a method of birth control?
_____ Yes _____ No
9. Please check the method -check more than one if appropriate:
_____ Birth control pill _____ Diaphragm
_____ Intrauterine device (I.U.D.) _____ Condoms
_____ Spermicidal Foam or Jelly _____ Mucous or rhythm method
_____ Withdrawal

10. How long have you used this method?

_____ Years _____ Months

11. Do you and your partner use some kind of birth control?

_____ Always
_____ Most of the time
_____ Once in awhile
_____ Very Seldom
_____ Never

12. If you have used birth control, which of the following methods have you used most often? (Mark the one used most often "1", the next most often "2", etc., for as many methods as you have used.)

_____ The Pill
_____ I.U.D. (Intrauterine Device, Loop, Etc.)
_____ Diaphragm
_____ Condom (Rubber) and Foam
_____ Condom Only
_____ Foam Only
_____ Withdrawal (Pulling Out)
_____ Douche (Washing Out Afterwards)
_____ Rhythm (Safe Period)
_____ Other; Please specify _____

13. Of those times you had sexual intercourse in the last two months, how often did you and your partner use birth control?

_____ Always
_____ Most of the time
_____ Once in a while
_____ Very seldom
_____ Never

14. If you and your partner used birth control in the last two months, what kind did you use most often: (Please name only one.)

_____ The Pill
_____ I.U.D. (Intrauterine Device, Loop, Etc.)
_____ Diaphragm
_____ Condom (Rubber) and Foam

(continued next page)

14. (continued)

_____ Condom Only

_____ Foam Only

_____ Withdrawal (Pulling Out)

_____ Douche (Washing Out Afterwards)

_____ Rhythm (Safe Period)

_____ Other; Please specify _____

15. Did you and your partner use birth control the last time you had sexual intercourse?

_____ Yes _____ No

16. If you and your partner used birth control the last time you had sexual intercourse, what kind did you use?

_____ The Pill

_____ I.U.D. (Intrauterine Device, Loop, Etc.)

_____ Diaphragm

_____ Condom (Rubber) and Foam

_____ Condom Only

_____ Foam Only

_____ Withdrawal (Pulling Out)

_____ Douche (Washing Out Afterwards)

_____ Rhythm (Safe Period)

_____ Other; Please specify _____

THE END - THANK YOU

Appendix E
County Department of Public Health
Client Intake Forms

NAME OF PERSON RECEIVING SERVICE:

DATE

LAST

FIRST

MI

Maiden

BIRTHDATE

AGE

SEX: M F

PHYSICIAN

(FOR CHILD) NAME OF PARENT/GUARDIAN

Street Address

City

Zip

Home phone

Work/
Message #

ALLERGIES

IN EMERGENCY NOTIFY:

1.

Name

Address

Phone

2.

Name

Address

Phone

CIRCLE RACE:

1. Black

4. American Indian

Language spoken

2. Hispanic

5. White

Nationality

3. Asian/Pacific Islander

6. Alaskan Native

REFUGEE: YES NO

MIGRANT/SEASONAL WORKER: YES NO

HOUSEHOLD MEMBERS:

Name:

Last

First

Sex

Relationship
to Client

Birthdate

Allergies

Date _____

REASON FOR VISIT (Please circle)

1. Select or change birth control method
2. Continue present method
3. Possible pregnancy
4. Problem with pain____, intercourse____, bleeding____, discharge____, birth control method other____.

REPRODUCTIVE HISTORY

1. When was the FIRST day of your last period?_____.
2. How long is it from the first day of one period to the first day of the next?_____.
3. Age when periods started_____.
4. How many times have you been pregnant?_____. How many live births?_____.
5. How many miscarriages or abortions?_____.
6. Did your mother take DES while pregnant with you? Yes____, No____, Don't know____.
7. Check birth control methods you have used. Natural____, pill____, foam____, condoms____, vaginal suppositories____, IUD____, diaphragm____, none____.
8. What method are you using now?_____.
9. Have you ever had a PROBLEM PAP smear?_____.
10. Have you had an infection of tubes or ovaries?_____, or venereal disease?_____.

PERSONAL MEDICAL HISTORY

Cancer_____	Heart Disease or Murmur_____	Kidney/Bladder Infections_____
Diabetes_____	Rheumatic Fever_____	Lung Problems_____
Stroke_____	High Blood Pressure_____	Phlebitis/Blood Clots_____
Anemia_____	Hepatitis or Mono_____	Breast Disease_____
Seizures_____	Liver/Gall Bladder_____	Depression/Mental_____
Herpes_____	Thyroid Problems_____	German Measles_____

List surgeries or serious accidents and their dates _____

Current Medications _____

FAMILY HISTORY

Please ✓ if any of your blood relatives (parents, grandparents, brothers, sisters, etc.) had

High Blood pressure_____	Heart Attack before age 50_____
Blood Clots in chest or legs_____	Stroke before age 50_____
Diabetes_____	High Cholesterol_____

Cancer_____ Who?_____

What part of body?_____

CLIENT INCOME WORKSHEET

(Please note the County reserves the right to verify income)

If you are receiving public assistance and have a medical card, you needn't complete this form unless you are applying for WIC program eligibility.

1. How many people are there in your household? _____
2. What is your monthly household income before taxes from the following sources?

	<u>Self</u>	<u>Spouse/Other</u>
Salary, wages, fees (If you do not know your wages for a total month, please fill in the work area below and staff will calculate for you.)	\$ _____	_____
Net income from farm and non farm self-employment	_____	_____
Social Security	_____	_____
Public assistance or Welfare payments like AFDC	_____	_____
Dividends or interest on savings or bonds, estates, trusts or net rental income	_____	_____
Unemployment compensation	_____	_____
Government civilian employee or military retirement payments or veterans' payments	_____	_____
Private pensions or annuities	_____	_____
Alimony or child support payment	_____	_____
Net royalties	_____	_____
Other cash income or allowances from any resources which are readily available to the family	_____	_____
Total Monthly Income (before taxes)	\$ _____	_____

\$ _____/hour for _____ avg. hours/week (self)

\$ _____/hour for _____ avg. hours/week (other)

I affirm that this information is true and correct to the best of my knowledge.

Date

Signature

Relationship to client

Appendix F

Measurement of Effectiveness of Contraceptive Use

Table I - Tool for Assigning Values for Contraceptive
Use Effectiveness (Howe, 1980)

Table 1

Points Assigned for Frequency of Contraceptive Use	Points Assigned for Type of Contraceptive Use
<u>Questions 11 and 13</u>	<u>Questions 12, 14 and 16</u>
Always Most of the time (3 points)	Pill I.U.D. (3 points) Diaphragm Foam & Condom
Once in awhile (2 points)	
Seldom Never (1 point)	Condom only (2 points) Foam only
	Withdrawal Douche (1 point) Rhythm
	Nothing (0 point)
<u>Question 15</u>	
Yes (3 points)	
No (1 point)	

* Decisions regarding effective versus less effective or ineffective methods of contraceptive use were based on "Table 1: Method Effectiveness: Theoretical and Actual Use Rates" (Hatcher, R., Stewart, G., Stewart, F., Guest, F., Stratton, P. & Wright, A., 1978, p. 20).

AN ABSTRACT OF THE THESIS OF
PATRICIA H. GLAZIER

For the MASTER OF NURSING

Title: CONTRACEPTIVE USE IN FEMALE ADOLESCENTS IN RELATION TO
LOCUS OF CONTROL.

APPROVED: _____

Carol Howe, C.N.M., D.N.Sc., Thesis Advisor

The purpose of this study was to explore the effects of locus of control and contraceptive knowledge on the use of contraceptives by sexually active adolescent females. Subjects in this research were 31 females ages 13 through 19 years of age. These participants were requesting contraception or contraceptive counseling at a County Family Planning clinic during the period February 16, 1984 through March 23, 1984.

The following hypotheses were tested. First, sexually active teenage females with an internal locus of control will show higher levels of contraceptive knowledge than those with an external locus of control. Second, that sexually active female adolescents with an internal locus of control will report effective contraceptive use more frequently than those with an external locus of control. Contraceptive effectiveness was measured by a scale adapted by Howe (1980) which assessed the method of contraception used and the frequency of self reported use of that particular method. The assessment was made in three time frames; use in general, use in the

past two months and use of birth control at the last act of intercourse. Third, if knowledge of contraception is controlled for, sexually active teenage females with an internal locus of control will report more frequent use of effective contraceptives than those with an external locus of control. This specific hypothesis was tested to rule out a spurious relationship between contraceptive use and internal locus of control which might have been due solely to the greater amount of knowledge possessed by internals.

None of the proposed hypotheses were supported in this study. Therefore, it must be concluded that neither contraceptive knowledge or locus of control were important variables for use in explaining contraceptive use of female adolescents in this sample. Failure to support the hypotheses was discussed in terms of limitations of the research instruments, the theoretical conceptualizations, and the size and limited representation of the sample. Recommendations were offered with regards to future research in this area.