

EVALUATION OF THE EFFECTIVENESS OF THE CONTRACEPTIVE EDUCATION
PROGRAM IN THE LIFE PLANNING HEALTH SERVICES

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS
IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY

COLLEGE OF HEALTH, PHYSICAL EDUCATION,
RECREATION, AND DANCE

BY

FARKHONDEH KHORRAMI, B.S.

DENTON, TEXAS

MAY 1987

COLLEGE OF HEALTH, PHYSICAL EDUCATION, RECREATION, AND DANCE

TEXAS WOMAN'S UNIVERSITY
DENTON, TEXAS

March 30, 1987

Date

To the Provost of the Graduate School:

I am submitting herewith a thesis written by Farkhondeh Khorrami entitled "Evaluation of the Effectiveness of the Contraceptive Education Program in the Life Planning Health Services". I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the the degree of Master of Arts with a major in Health Education.

Roger Shipley
Major Professor

Merna Steinbaum

Beth E. Tandy

Accepted.

Roger Shipley
Department Chair

J. Ann Clark
Dean

Robert M. Thompson
Provost of the Graduate School

To my husband Kamal whose support and encouragement made
my Graduate study possible.

COMPLETED RESEARCH IN HEALTH, PHYSICAL EDUCATION,
RECREATION, AND DANCE
Texas Woman's University, Denton, TX

A. Uhler

Institutional Representative

Khorrami, M.A. Evaluation of the Effectiveness of the Contraceptive Education Program in the Life Planning Health Services. M.A. in Health Education, 1987, 77 p. (R. Shipley)

A contraceptive knowledge questionnaire was used to evaluate the cognitive effectiveness of the contraceptive education program at the Life Planning Health Services in Denton and Lewisville, Texas. The pre and posttest with a control group design was used. The treatment group consisted of 42 female new clients from the Life Planning. The control group consisted of 38 females from a local church. In this study participants having previous contraceptive education were eliminated. Subjects in the treatment group were tested before and after the Life Planning's contraceptive educational session. Subjects in the control group were tested twice during a one week period. A one way analysis of covariance and a multiple regression technique were used to analyze the data. The treatment group's gained knowledge was significantly higher than the control group. The degree of gained knowledge was not related to the age, marital status, and educational level of the participants.

TABLE OF CONTENTS

	Page
DEDICATION	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
 Chapter	
I. INTRODUCTION	1
Rational	1
Purpose of the Study	3
Statement of Problem	3
Research Hypotheses	3
Assumptions	4
Delimitations of the Study	4
Limitations of the Study	5
II. REVIEW OF RELATED LITERATURE	6
III. PROCEDURES	25
Preliminary Procedures	25
Selection of the Subjects	26
Screening of the Subjects	26
Selection and Description of the Instrument	27
Collection of the Data	28
Treatment of the Data	29
IV. PRESENTATION OF THE FINDINGS	30
Description of the Subjects	30
Analysis of the Data	35
V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS FOR FURTHER STUDY	50
Summary	50
Tests of Hypotheses	52
Discussion of the Results	53

	Page
Conclusion	54
Recommendations	55
REFERENCES	56
APPENDICES	
A. Letters and Permissions	60
B. Test Materials	65
C. Raw Data	73

LIST OF TABLES

Table	Page
1. Descriptive Statistics Relative to Age	31
2. Descriptive Statistics Relative to Education . . .	32
3. Frequency and Percentage Distribution of Subjects' Education	33
4. Descriptive Statistics Relative to Marital Status	34
5. Frequency and Percentage Distribution of Subjects' Marital Status	35
6. Levene's Test for Equality of Variances	36
7. Descriptive Statistics Related to the Pretest and Posttest Scores	37
8. One-way Analysis of Variance	38
9. Comparison of Means	39
10. Summary of Analysis of Covariance	40
11. Correlation Martix for the Life Planning Group	41
12. Multiple Regression Results for the Life Planning Group	42
13. Summary of Multiple Regression Coefficient for the Life Planning Group	43
14. Correlation Matrix for the Control Group	44
15. Multiple Regression Results for the Control Group	45
16. Summary of Multiple Regression Coefficient for the Control Group	46
17. Variables not in Equation for the Life Planning Group	47

Table		Page
18.	Stepwise Regression Coefficients for the Life Planning Group	48
19.	Regression Coefficient for the Control Group . .	49

CHAPTER I

INTRODUCTION

Rational

For many years there has been controversy over the issue of contraceptive and sex education. Because of this controversy, it is possible that distribution of accurate contraceptive and sex information has been inadequate. The study of Mayadus and Duehn (1977) implied that there was a need for sex education at that time. In addition, they suggested that the programs needed to be evaluated. Both the process and outcome of sexual counseling and educational programs need to be determined.

The health, social, and economic consequences of unwanted and unplanned childbearing are well known. According to Weller and Hobbs (1978), poor birth planning has been related to increased infant and maternal morbidity and mortality, forced and unstable marriages, illegitimacy, and the closure of educational and occupational opportunities, which may result in welfare dependency and restricted roles for women.

Data gathered by Dryfoos (1982) revealed that most women in the United States use effective contraceptives to plan their pregnancies, but 4.4 million women each year conceive accidentally because they use contraceptives inappropriately. Another 4 million women are at high

risk of having unplanned pregnancies because they use no methods or ineffective ones. Dryfoos points out also that two-thirds of low-income women and one-third of teenage women who avoid unplanned pregnancies obtain contraceptives from family planning clinics.

There are many studies and articles which indicate the need for an improved quality of contraceptive and sex education. The Commission of Obscenity and Pornography in their 1980 report supported the recommendation of the 1970 Commission, in which it was indicated that a need existed for improved quality in sex education. The Commission's number one recommendation was that an extensive sex education program be initiated in the United States. Different family planning clinics such as Planned Parenthood Federation of America and Life Planning Health Services have attempted to meet the need for distribution of factual contraceptive and sex information.

A careful review of related literature reveals that there have been many studies which dealt with different subjects related to the operation of family planning clinics. However, there have been few studies in relation to the contraceptive knowledge of the individuals served by these clinics. A majority of the past research studies has been survey oriented, and only a few have employed an experimental research design.

The absence of research measuring the cognitive effectiveness of educational programs in Life Planning Health Services Clinics justified the need for this study. The results did provide some

feedbacks for the Life Planning Health Services to improve their contraceptive educational program.

Purpose

The purpose of this study was to test the cognitive effectiveness of the contraceptive education program presented at the Life Planning Health Services in Denton and Lewisville, Texas.

Statement of the Problem

The study was designed to determine whether or not the contraceptive education program at Life Planning Health Services Clinics in Denton and Lewisville, Texas, changes the level of contraceptive knowledge of female clients. The results were compared with those of a control group who were selected from local church members who have had no formal contraceptive education. Data were collected by an instrument eliciting information on contraceptive knowledge.

Research Hypotheses

The following null hypotheses were tested at the 0.05 level:

1. There is no significant difference in contraceptive knowledge of the Life Planning group before and after a contraceptive educational program.
2. There is no significant difference between the level of contraceptive knowledge of the Life Planning and control groups on pre and posttests.

3. There is no significant difference between the age level of the Life Planning group and the degree of knowledge gained.
4. There is no significant difference between the educational level of the Life Planning group and the degree of knowledge gained.
5. There is no significant difference between the marital status of the Life Planning group and the degree of knowledge gained.

Assumptions

The assumptions relating to this study were as follows:

1. Contraceptive education is part of general sex education.
2. The clients who participate in the investigation did answer the knowledge questions to the best of their ability.
3. The instructors at both clinics presented the information in their usual manner and did not let the study alter their presentation of information.

Delimitations

The study was delimited to:

1. English speaking women, who were first time clients in the Life Planning Clinics.
2. Life Planning Clinics located in Denton and Lewisville, Texas.
3. Women with no previous formal birth-control education.

4. Young women from 16 to 39 years of age.

Limitations

The limitations of the study were as follows:

1. Variation in the consistency of information distribution by clinic instructors.
2. Variation in the consistency of information distribution at the two clinics.

CHAPTER II

REVIEW OF LITERATURE

The primary sources of literature which were reviewed for this study were related to general sex education but also included contraceptive education. Since there is very little research concerning adults and birth control, this review dealt primarily with teenagers and birth control.

In an attempt to meet the overwhelming need for information concerning sexuality, many agencies, universities, and high schools have incorporated sex education into their curricula. One of the most complex and least explored issues relating to sex and contraceptive education is the critical question of its effectiveness in the prevention of unwanted pregnancies.

A two-part study was undertaken by Reichelt and Werley (1975) with the cooperation of the Planned Parenthood League. In the study teenagers' knowledge of contraception, abortion, reproduction, and venereal disease was explored. The purpose of the study was to provide data necessary for sex education program implementation and to determine whether or not education in specific sexuality areas would result in improved knowledge. The subjects consisted of 1,190 teenagers, ages 13 to 19, who were attending a "rap session" for the first time at Planned Parenthood. Each person was asked to fill out a

two section questionnaire before and after the "rap session." The first section elicited demographic and other background information; the second determined the knowledge gained during the session.

The study revealed that a large majority had had sexual intercourse prior to seeking contraceptives at the family planning clinic. The study also showed that most were either misinformed or uninformed about the various methods of contraception, and that most obtained their information or misinformation from their peers or the mass media, with parents, educators, and health professionals contributing only minimally. The findings of the pretest indicated that the teenagers scored an average of 10.8 of a possible 30 in birth control knowledge. Participants with some college education and those with a high socioeconomic status scored higher. The young women had better scores than the young men. High school graduates scored lower than high school seniors. The results by race showed whites scoring the highest and blacks the lowest on the test. Those teenagers who had had intercourse were more knowledgeable about birth control than those who had not. Among sexually experienced teenagers, those who had used birth control scored higher than those who had no sexual experience.

In the second phase of the study, Reichelt and Werley (1975) retested approximately one-third of the initial sample when they returned for a ten week checkup. The characteristics of the smaller retest sample were similar to the original large sample. The findings

indicated that there was a significant improvement in knowledge in all areas subsequent to the rap session. For the sample that was retested, birth control knowledge rose to 20.9 from 11.9 (to 70% from 40%) out of a possible score of 30. There was a positive correlation between age, socioeconomic factors, and the mean scores. As in the first test, black teenagers had lower scores than the white teenagers.

Reichelt and Werley (1979) concluded that education, in the form of a single, informal rap session improved participants' knowledge substantially. They found that teenagers' major source of sex information was their peer group; therefore, it is important to provide information to as many teenagers as possible. The authors also concluded that a program such as the one offered by Planned Parenthood was both needed and valuable.

Klein (1984) studied the continued impact of a sex education program, with respect to self-reported changes in knowledge, attitudes, and behavior. The participants were 285 students from a Midwestern high school identified as having an outstanding sex education program. They were sampled during the spring of 1982. In order to investigate the result of the sex education program, the author developed a questionnaire. A Likert Scale, with response categories ranging from "strongly agree" to "strongly disagree," was used and students were asked to indicate the extent that they felt changes in their sexual knowledge and attitudes were the result of the school's sex education program.

Klein (1984) found positive views from the respondents with respect to the program's impact on their lives. He stated that "the present study, coupled with the existing literature, illustrates that sex education can enhance the knowledge, attitude, and behavior skills of adolescents" (p.29).

With the cooperation of the Institute for Sex Research at Indiana University, Hoch (1971) examined both knowledge gain and attitude change which occurred during a two-week sex education instructional unit. The study was conducted in a large northern Indiana high school and involved 100 students, with 50 students in a control and 50 students in an experimental group. A pretest and posttest experimental design was utilized. Hoch found that factual knowledge increased as a result of sex education instruction.

Moore and Erickson (1985) have examined some of the variables suggested by the theories about adolescent pregnancy. The sample that was used included male and female teenagers and young adults from four different ethnic groups. The purpose of the study was to determine if there were any differences in their level of knowledge of birth control, sexual physiology, and sexually transmitted diseases (STD's) as well as their attitude regarding sexual activity, contraception, and pregnancy. The subjects consisted of 594 adolescents and young adults, ages 16 to 25 chosen from schools, church groups, neighborhood organizations, family planning clinics, and personal contacts in the greater Los Angeles area. Four cultural groups were targeted for the

study: (1) whites, (2) blacks, (3) Hispanics, and (4) Asians. The subjects completed a 93-item questionnaire to determine sexual and contraceptive knowledge, attitudes, behaviors, communication patterns, risk-taking behaviors, and demographic data.

Overall findings indicated that the teenagers and young adults in the study showed rather poor knowledge about sexual physiology, birth control, and STDs. The young adults had better general knowledge and used birth control more often than the teenagers. Also within the ethnic category, Hispanics appeared to be at high risk for pregnancy because of their low reported rate of contraceptive use and their low level of knowledge about sexual physiology and birth control. The researchers emphasized that the low knowledge scores suggest that there is still a need for sex education in schools, clinics, and community settings that is readily available and understandable to adolescents of different ethnic groups. Findings about birth control use in this study pointed toward the need for giving more sex education to adolescents. Many of the teenagers in this sample were not using birth control at all or were using it inconsistently.

Moore and Erickson (1985) concluded that it is not expected that sex education in itself would be a solution to the adolescent pregnancy problem. However, a clear understanding of reproductive physiology would aid in the proper use of birth control methods, such as rhythm, withdrawal, condoms, and the pill, which are the methods and devices frequently used by teenagers.

Shipley (1974) studied changes in contraceptive knowledge, attitudes, and behavior which occur concurrently with contraceptive education in a current health problems class. The samples were 199 students enrolled in a health problems class at William Paterson College in New Jersey. A three part questionnaire was used which included tests of contraceptive knowledge and attitudes and a questionnaire designed to elicit behavioral information as well as demographic data. The subjects were pretested at the beginning of the first class meeting.

The following are some of the major findings of the study: all subjects and subgroups increased their knowledge significantly concerning contraception during the unit of instruction given at William Paterson College. There was no significant difference between subjects having had prior formal sex education and those having no prior formal sex education in respect to pretested contraceptive knowledge and attitude. Condoms, pills, and withdrawal were the most frequently used contraceptive methods as indicated by the pretest. The study revealed that there was a shift on the posttest away from the withdrawal method to a more effective method. Also, the subjects having no prior instruction reported significantly more consistency in their contraceptive use and tended to choose more effective methods. According to test results the quality of sex education received was inferior in that it was a detriment instead of an asset to those who received it. The author concluded that it appears that the earlier

people have sexual intercourse, the less they are likely to know about reproduction and contraception. The author also concluded that junior and senior high schools should attempt to improve the teaching of contraceptive and sex education.

Finkel and Finkel (1985) evaluated a revised curriculum in sex education. The study focused on the impact that the curriculum had on students' knowledge, attitudes, and behavior. A total of 416 students, who completed both a pretest and posttest, were included in the study. The mean age of the sample was 16.2 years. The questionnaire included several dimensions, two of which were knowledge of birth control and knowledge of human reproduction. The findings of the study showed that instruction in sex education could increase knowledge of both birth control and human reproduction. However, the knowledge dimension was found to be more significant, especially regarding birth control, pregnancy, and sexually transmitted diseases.

Gumerman, Jacknik, and Sipko (1980) attempted to address problems associated with adolescent sexuality by developing and evaluating an educational program for the sophomore health class at a rural high school in southern Illinois. The sex education unit was presented to the sophomore health class during four classes. A pretest and posttest design was formulated in order to assess student knowledge concerning sexuality, decision making process, and contraceptive methods, as well as to measure gained knowledge which might occur upon completion of the sex education unit. The findings of the study

indicated that there was a significant gain of knowledge between the administration of the pretest and posttest.

Darabi, Jones, Varga, and House (1982) evaluated a sex education outreach program. The project was carried out by Health Education for Youth (HEY), which is an outreach component of a large contraceptive clinic for teenagers at the Presbyterian Hospital in New York city. Some of the objectives of the outreach project were as follow: (1) to increase knowledge regarding the time of greatest pregnancy risk during the menstrual cycle; (2) to reduce attitudinal barriers to the use of contraceptives among sexually active teenagers; and (3) to increase utilization of family planning clinics. Subjects consisted of 688 teenagers who were selected from two senior high schools and five community agencies and were divided into experimental and control groups. A pretest and posttest were administrated in order to measure changes in participants' knowledge and attitudes.

The investigators concluded that significant knowledge gains were made by the participants. The author added that changes in the test scores after education were statistically significant regardless of the age, sex, or sexual activity of the participants. The program also led to dramatic changes in reported intentions to use contraception among the sexually active teenagers. Only 23% of the participants stated that they always used contraception before the education program but after the program 57% stated that they intended to always use birth control if they had sex during the coming months.

The study emphasized that this change should be interpreted conservatively since they were comparing pretest behavior with posttest intentions.

Namerow and Philiber (1982) have recognized the need to review and summarize the research on the effectiveness of adolescent family planning programs in the United States. One of the aspects they have reviewed is the programs impact on adolescent knowledge. During the review, the authors found that a nationwide study of adolescents in various clinic sites showed that many contraceptive education efforts were ineffective and offered incomplete information. Namerow and Philliber (1982) concluded that there is relatively little information which is often inconsistent about the impact of adolescent contraceptive programs on knowledge among teenagers. Also many young people approach contraceptive services without sufficient knowledge to be effective users.

Voss and Mckillip (1979) evaluated sex education implemented to increase participants' knowledge about sexual matters, attitudes, and behaviors. The results of the study indicated that the program was effective in meeting its goals in the area of attitude and behavior change, but its effectiveness was not demonstrated for the goal of increasing factual knowledge.

Pippin (1978) compared the effectiveness of different strategies of information dissemination by selected Planned Parenthood clinics in terms of sexual knowledge and general sexual attitudes of women who

were first-time patients. The findings of the study indicated that the contraceptive knowledge of clients utilizing Planned Parenthood clinics could be significantly increased through the use of strategies such as audiovisuals, independent study, and one-to-one educational and counseling sessions. In terms of contraceptive knowledge gain, all of the above educational strategies were equally effective statistically.

Kirby (1980) did a review of the literature concerning all aspects of sex education and tried to describe the methods used in the evaluation of sex education programs. The author also described the impact of programs upon knowledge, attitude, and behavior. Kirby (1980) reported that numerous studies of both high school and college classes have used experimental designs to measure the impact of sex education programs upon the knowledge of the students. The findings were unanimous that instruction in sex education does substantially increase knowledge about sexuality.

Kirby (1980) concluded that the demonstrated success of sex education programs to increase students' knowledge in many diverse areas of human sexuality should be emphasized and applauded. The investigator added that, in general, society approves of greater knowledge and assumes that greater knowledge facilitates more responsible decision making. Also, many studies indicated that teenagers are ignorant about reproduction and contraception; some of these studies have demonstrated that one major reason that teenagers do

not use contraception is because they incorrectly believe they cannot or will not become pregnant. More education is needed to help dispel some of these myths.

A review of the literature related to contraceptive and sex education revealed an abundance of articles which were either for or against the subject being taught within the existing educational framework. Opponents charge that contraceptive and sex education gives license to immorality and could be responsible for increasing sexual activity, pregnancy, and abortion among young people. Proponents, who feel that contraceptive and sex education is worthwhile, claim that contraceptive and sex education can lead to more effective use of birth control and avoidance of unintended pregnancy (Kasun, 1979; Scales, 1981; Kirby, 1980; Gordon, 1979).

In an effort to determine whether there is any empirical support for the belief that contraceptive and sex education in the schools affect students' sexual activity, contraceptive use, or likelihood of pregnancy, Zelink and Young (1982) used data from two national surveys of young people. The first survey, carried out in 1976, was based on a nationally representative sample of young women aged 15 to 19 living in the American households. The second survey, carried out in 1979, obtained data from young women aged 15 to 19 and young men aged 17 to 21 living in households in Standard Metropolitan Statistical Areas (SMSAs) in the same states.

Several conclusions were made from the study. First, the data seemed to provide overwhelming support for the claim that the decision to engage in sexual activity is not influenced by whether or not teenagers have had sex education in school. Second, young women who have had sex education appeared less likely to become pregnant if they were sexually active. Third, according to the 1979 data, young women who have had a course that included discussion of contraceptive methods were more likely to have used a contraceptive method at the time of first intercourse, but are not necessarily more likely to have used a prescription method. The data showed that in both surveys among the two age groups, blacks were much more likely than whites to have used a prescription contraceptive method at first intercourse, whether or not they had had sex education.

Dawson (1986) used the data from the 1982 National Survey of Family Growth (NSFG) and examined the effects of formal sex education, specifically, education about pregnancy and birth control on teenagers' initiation of premarital intercourse, and knowledge of and the use of contraceptive methods. The analysis of data revealed that 68% of 15 to 19 year old women had received formal instruction about pregnancy and contraceptive methods and 16% had received pregnancy education only; another 16% had not been exposed to either topic in a formal sex education program. The analysis of the data did not indicate any consistent relationship between exposure to contraceptive education and subsequent initiation of intercourse. The study

revealed that sex education does influence contraceptive knowledge and behavior. Compared with sexually active young women who received no formal instruction about pregnancy and birth control, those who received both types of instruction reportedly knew how to use more contraceptive methods; those who received either type of instruction were more likely to use some method. Among users, those who were exposed to contraceptive education prior to their first intercourse were more likely to use some method at that time. Another result from the analysis of data was that neither pregnancy education nor contraceptive education added any significant reduction concerning the risk of premarital pregnancy among sexually active teenagers. This unexpected result was unexplained by Dawson in his report.

Marsiglio and Mott (1986) utilized the data from the National Longitudinal Survey of Work Experience of Youth (NLSY) to examine the impact of sex education upon behavior. The data which had been used in the study were based on personal interviews with 6,015 women and 6,054 men, aged 19 to 27. The data were collected in 1984. The primary purpose of the study was to determine whether teenagers who take sex education courses are any more or less likely than other adolescents to subsequently become sexually active, experience a premarital pregnancy, or use effective contraceptives.

The findings of the study indicated that although the majority of young people were sexually active by age 19, a considerable proportion never took a sex education course during adolescence. Blacks and

Hispanics were less likely than whites to have taken such a course. Among young people who waited until age 18 to start having sex, 61% of women and 52% of men had already been exposed to a sex education course. But among those who started at 16 or younger, less than half had taken a course. Exposure to a course appears to be associated with a slightly increased probability of subsequent sexual activity among 15 and 16 years old. Marsiglio and Mott concluded that contemporary sex education courses have ambiguous effects on premarital pregnancy. Sex education is also associated with an increased likelihood of effective contraceptive use.

Zabin, Hirseh, Smith, Street, and Hardy (1986) have reported about a school-based program for the primary prevention of pregnancy among inner-city adolescents. The program was designed and administered by the staff of the Department of Pediatrics and the Department of Gynecology and Obstetrics at the Johns Hopkins School of Medicine. The project was carried out with the cooperation of four schools in the Baltimore school system: two junior and two senior high schools. The program provided the students of one junior and one senior high school with medical and contraceptive services, individual and group counseling, and sexuality education over the course of the project. Students in the remaining two schools received no such services and served as the control group. The experimental schools served students from an all-black inner-city population. An evaluation component, designed to assess changes in the knowledge,

attitudes, and behavior of the school populations, was developed. Surveys were administered in the two program schools at four different times: once before the program began, and again during the spring term of the following three years. At the two control schools, questionnaires were given to the students at the beginning and at the end of the experimental program period.

The researchers concluded that over the course of the two and a half years that the program existed, changes in sexual and contraceptive knowledge occurred. Among high school students not sexually active, those exposed to the program for three years had postponed the initiation of sexual activity to a later age than students not participating in the project. During participation in the pregnancy prevention program, an increased percentage of female students attended a health facility before becoming sexually active. Students in the experimental schools who were already sexually active showed increased clinic attendance for contraception at all grade levels. Students who had been exposed to the program for 20 months had 22.5% fewer pregnancies than at the time of the baseline survey, whereas among students in the non-experimental schools, there were 39.5% more pregnancies after a 20 months interval than at the time of the baseline survey. The investigators added that there have been some concerns about exposing young people to programs that openly discuss sexual behavior and that provide them with information about contraception because these will increase sexual activity. This study

should discredit such concerns. Also in commenting on the success of this study, Zabin, et al. (1986) stated:

Access to the high-quality, free services was probably crucial to its success. Professional counseling, education, and open communication were, no doubt, also important. All these factors appear to have created an atmosphere that allowed teenagers to translate their attitudes into constructive preventive behavior. (p.125)

Kapp, Taylor, and Edwards (1980) examined an experimental educational program in human sexuality designed for the junior high school adolescent. The program was conducted jointly by the St. Paul, Minnesota, Maternal and Infant Care Project and the St. Paul Public Schools. This program encompassed two courses which presented a comprehensive view of young men and women as sexual beings. The goal of the program was to affect primary prevention of adolescent pregnancy and other problems related to adolescent sexuality. Preliminary evaluation of the classes included a pretest and posttest which demonstrated a statistically significant increase in subjects knowledge. The authors suggested that providing adolescents with basic sex education can decrease the number of pregnancies in the adolescent population. Also Kapp, et al. (1980) stated that "preventive human sexuality programs are needed, and parents, educators, and health personnel should be involved in planning and implementing such programs" (p.83). The researchers added that the

curricula should include different aspects of sexuality and contraception.

There are others who have compared the relationships of race, age, education, and other socioeconomic factors with contraceptive use and education. Presser (1977) utilized the data from separate interviews of the same women obtained in 1973 and 1974, and elicited more information about the association of race, age, and education attainment with the knowledge of the time of greatest pregnancy risk. Presser concluded that a cross-sectional view of knowledge about pregnancy risk overestimates the prevalence of such knowledge. A substantial minority of women simply guess correctly. Only one-third of the sample of urban mothers gave correct responses in both interviews. There were marked differences by race, age, and education in the percent of women who responded correctly to the knowledge in both interviews. Whites, older women, and those who were more highly educated were better informed. It also appeared from the data that those women currently using less effective methods were more knowledgeable about pregnancy risk than those using the more effective methods like the pill. Presser concluded that there is a need for clinics, physicians, and teachers to improve the level of pregnancy-risk knowledge, especially among young women and men and before parenthood begins.

Cutright and Groeneveld (1978) examined a set of characteristics of wives which could be related to the use of more or less effective

methods of contraception and better birth planning success. Some of the variables which they examined were the wife's education, religion, age at first marriage, employment, year of marriage, and number of additional children intended. A sample of 939 white and 442 black currently married mothers, aged 18 to 44, was drawn from Illinois, Indiana, Michigan, Ohio, and Wisconsin.

The results of the study indicated that there were no variables with significant effects on choice of more or less effective methods. Also no single variable or combination of variables closely predicted the use of more effective or less effective methods during a pregnancy interval.

Peacock (1983) examined the contraceptive decision-making ability of 182 sexually active female adolescents. The young women, ranging in age from 15 to 19, were selected from three Planned Parenthood Clinics in Indiana.

The subjects completed a questionnaire designed to elicit information on their assessment of (1) the personal and social cost of contraceptive use, (2) the personal and social benefits of pregnancy, and (3) their biological ability to become pregnant. The results of the study indicated that the older a sexually active woman becomes, the more likely she is to be a good contraceptive. Also the longer a sexually active woman has been dating a particular person, the more likely she is to be a good contraceptive.

Bachrach (1984) analyzed the data from the tabulations of the

National Survey of Family Growth (NSFG) to find out some facts about the contraceptive practice among American women, ages 15 to 44 years old. The data were collected during the decade of 1973-1982.

The findings of the study indicated that during the decade of 1973-1982, the use of the oral contraceptives declined sharply among wives aged 15 to 44, although the total number of pill users did not decrease after 1979. At the same time the prevalence of female sterilization rose sharply; this increase occurred mainly among married women aged 35 and older. Among other subgroups of married women, the decrease in pill use was complemented by a smaller rise in the use of barrier methods, in particular, the condom and diaphragm.

The contraceptive status and method choices of never-married and previously married women differed sharply from those of currently married ones as of 1982. Sexually active never-married women were less likely to chose the pill when they used contraceptive methods. Previously married women were also less likely than currently married users to depend on one of the more effective methods like sterilization and the birth control pill.

The above studies generally support the idea that sex and contraceptive education does increase the knowledge of human sexuality and proper use of different contraceptive methods. Other factors such as age, race, marital status, education, and socioeconomic status can also affect the gain of contraceptive knowledge in sex and contraceptive education.

CHAPTER III

PROCEDURE

This study was undertaken to evaluate the cognitive effectiveness of the contraceptive education program at Life Planning Health Clinics. The procedure for the study is described under the following headings: (a) Preliminary Procedures, (b) Selection of the Subjects, (c) Screening of the Subjects, (d) Selection and Description of the Instrument, (e) Collection of Data and, (f) Treatment of the Data.

Preliminary Procedures

A number of preliminary procedures were performed prior to undertaking the study. After several meetings with Life Planning Health Services officials, they indicated the critical need for getting some feed-back about their contraceptive education program. Permission was granted by Life Planning Health Services to conduct this study with their clients (Appendix A). Then a review of related literature was undertaken. A tentative outline of the proposed study was prepared and presented to the members of the thesis committee for their approval and recommendations. The recommendations of the committee were accepted and revisions were made accordingly. The approved tentative outline in the form of a prospectus was filed in the office of the Provost of the Graduate School. Permission to conduct the study was granted by the same office (Appendix A). This

study was exempt from the review of the Human Subjects Review Committee because the test was administered to young women who volunteered to participate in the study and were anonymous.

Selection of the Subjects

The subjects for this study consisted of two groups of females, ages 16 to 39. A group of 38 female members from the first United Methodist Church of Denton, Texas, were selected as the control group. These subjects did not have any previous formal contraceptive education. This participation was on a voluntary basis.

A group of 42 females, new clients of the Life Planning Health Clinics from Denton and Lewisville, Texas, who did not have any previous formal contraceptive education were selected as the treatment group. The participation of the subjects in the treatment group was also on a voluntary basis.

Screening of the Subjects

After administration of the test, the subjects were then screened for previous formal contraceptive education. Of the 101 participants in the study, 38 females from the First United Methodist Church and 42 new clients from the Life Planning Clinics met the criteria and were included in the study.

Selection and Description of the Instrument

Paul Reichelt (1973) developed a sex knowledge questionnaire which was modified for use in this study. His questionnaire has been used for similar studies that were administered in Planned Parenthood Clinics. The instrument was used to measure the contraceptive knowledge of the subjects. According to Reichelt the questionnaire, although easily adapted for use with a professional group, has been developed specifically for use with lay people. The original instrument developed by Reichelt is reproduced in Appendix B.

Reichelt worded the items so that they would be easily understood by the participants and subcultural slang terms were avoided. According to the developer of the questionnaire, a small pilot study indicated that the items were appropriate for the intended population. The lack of a sufficiently large sample suitable for a test-retest study precluded that type of reliability check for the original instrument. Content validity has been ensured by deriving items from the available scientific literature and having them reviewed by a panel of health professional experts. Construct validity of the instrument was indicated by the fact that scores increased as a result of receiving education on the content of the instrument in the original study (Appendix B).

Reichelt's instrument was modified in order to meet the needs of this study (Appendix B). Approval of the modification was granted by

the developer of the original sex knowledge questionnaire and the research committee. The modification was necessary since the information in some sections of the original questionnaire such as I.U.D. (Intrauterine device), abortion, and STDs (Sexually Transmitted Diseases) was not included in Life Planning's contraceptive educational program.

The modified questionnaire is composed of two sections. The first section elicited demographic and background information such as age, education, marital status, and previous formal birth-control education. The second section elicited contraceptive knowledge and consisted of 25 true-false questions. The length of time required for taking the test was approximately ten minutes. Permission to use the questionnaire for this study was obtained from the developer (Appendix A).

Collection of the Data

The data for this study were collected from Life Planning Clinics' new clients in Denton and Lewisville, Texas and members of the First United Methodist Church in Denton during the months of November and December in 1986. The administrative procedures and directions for completing the test were the same for the research subjects of both clinics and the control group.

The test was given to the subjects in the control group during Sunday School classes on November 30, 1986, at the First United Methodist Church by the investigator. The same subjects were retested

the following Sunday on December 7, 1986. The procedures for collecting data from the subjects in the Life Planning group were as follows: At the time of arrival, each new client in the Life Planning Clinics was asked to voluntarily participate, following a verbal explanation of the study by the researcher or the clinics' health educators. Also the participants were assured of confidentiality. Each new client who was willing to participate was tested prior to the birth control education and posttested at the end of the visit when they were ready to leave the clinic.

Treatment of the Data

The pretest and posttest were scored for the subjects in the control and Life Planning groups. Demographic data regarding the subjects' age, education, and marital status were tabulated. To test the hypotheses of this study, the data were treated with the one-way analysis of covariance utilizing the BMDPIV statistical program. For descriptive statistics, the BMDP2D statistical program was utilized.

CHAPTER IV

PRESENTATION OF THE FINDINGS

The purpose of this study was to evaluate the cognitive effectiveness of the contraceptive education program at Life Planning Health Clinics in Denton and Lewisville, Texas. The contraceptive knowledge questionnaire developed and utilized by Reichelt (1973) was modified and used to generate the data for the analysis in this chapter. Each subject in the Life Planning group was asked to fill out the questionnaire before and after the contraceptive education. The control group completed the questionnaire on November 30, and again on December 7, 1986. One-way analysis of covariance, multiple correlation, and stepwise multiple regression were used to treat the data. The .05 level of significance was used to determine if a significant difference existed between the control group and the Life Planning group. The purpose of this chapter is to present the findings of the study. This chapter is organized under the following headings: (a) Description of the Subjects and (b) Analysis of the Data.

Description of the Subjects

The subjects consisted of 38 females from the first United Methodist Church in Denton, as a control group, and 42 female, new

clients from the Life Planning Clinics in Denton and Lewisville, Texas. Table 1 reveals the age distributions of the Life Planning and control groups. The ranges, means, standard deviations, and the standard errors of the mean are presented. The Life Planning group ranged from 16 to 36 years of age with a mean of 23.14 years. The control group ranged from 16 years to 39 years of age with a mean of 30.18 years. The standard deviation for the Life Planning group was 5.97; for the control group it was 7.34.

Table 1

Descriptive Statistics Relative to Age

Group	n	Range (Low-High)	M	SD	SEM
Life Planning	42	20 16-36	23.14	5.97	0.92
Control	38	23 16-39	30.18	7.34	1.19

Table 2 presents a description of the subjects' education giving the ranges, means, standard deviations, and the standard errors of the mean. As Table 2 shows, the Life Planning and control groups both ranged in education from junior high to college graduates with a mean of 3.40 (between high school and attending college) for Life Planning group. The mean for the control group was 4.39 (between attending college and college graduate). The standard deviation for the Life Planning group was 0.70; for the control group it was 0.88.

Table 2

Descriptive Statistics Relative to Education

Group	n	Range (Low-High)	M	SD	SEM
Life Planning	42	3 (2-5)	3.40	0.70	0.10
Control	38	3 (2-5)	4.39	0.88	0.14

1 = Elementary School 3 = High School
 2 = Junior High 4 = Attended or Attending College
 5 = College Graduate

Table 3 also indicates the frequency and percentage distribution of the Life Planning and control groups according to their educational

level. Seven percent of the Life Planning and 2.6% of the control group had a junior high education. Fifty percent of the Life Planning and 18.4% of the control group had a high school education. Also 38.1% of the Life Planning and 15.8% of the control group were attending or had attended college. Approximately five percent of the Life Planning group and 63.2% of the control group were college graduates. The median for the Life Planning group was 3 (high school); the median for the control group was 5 (college graduate).

Table 3

Frequency and Percentage Distribution of Subjects' Education

Group	1		2		3		4		5	
	n	%	n	%	n	%	n	%	n	%
Life Planning	0	0	3	7.1	21	50.00	16	38.1	2	4.8
Control	0	0	1	2.6	7	18.4	6	15.8	24	63.2

1 = Elementary 3 = High school

2 = Junior high 4 = Attended or attending college

5 = College graduate

The descriptive statistics relative to marital status are presented in Tables 4 and 5. Table 4 shows the ranges, means, standard deviations, and the standard errors of the mean. The marital

status for the Life Planning group ranged from 1 to 3 (single to divorced); for the control group, it was 1 to 2 (single to married). The mean for Life Planning was 1.59; the mean for control group was 1.76. The standard deviations were 0.76 for Life Planning group and 0.43 for control group.

Table 4

Descriptive Statistics Relative to Marital Status

Group	n	Range (Low-high)	M	SD	SEM
Life Planning	42	2 (1-3)	1.59	0.76	0.11
Control	38	2 (1-2)	1.76	0.43	0.06

1 = Single 2 = Married 3 = Divorced or Separated

Table 5 presents the frequency and percentage of the distribution of marital status for both groups. This table indicates that 24 females (57.1%) in the Life Planning group were single, 11 (26.2%) were married, 7 (16.7%) were divorced or separated, and none were widowed and none were living together (cohabitation). Of the subjects in the control group, 9 (23%) were single, 29 (76.3%) were married, and none were divorced or separated, widowed, or living together

(cohabitation). The median for the marital status was 1 (which is single) for the Life Planning group. The control group had a median of 2 (which is married.)

Table 5

Frequency and Percentage Distribution of Subjects' Marital Status

Group	1		2		3	
	n	%	n	%	n	%
Life Planning	24	57.1	11	26.2	7	16.7
Control	9	23	29	76.3	0	0

1 = Single

2 = Married

3 = Divorced/Separated

Analysis of the Data

The dependent variables to be included in this study were posttests for both the Life Planning group and the control group. The independent variables were age, education, marital status, and pretest scores for both groups. Because the size of the two groups were not equal (Life Planning 42, control 38), the Levene's test of homogeneity of variances was used. Table 6 shows the results of this test.

Table 6

Levene's Test for Equality of Variances

Variable	Source	DF	MS	F-Value	P
Age	Between within	1 78	20.69 13.82	1.50	0.22
Education	Between within	1 78	0.505 0.149	3.40	0.06
Marital Status	Between within	1 78	2.02 0.08	24.01	0.00
Pretest	Between within	1 78	1.46 1.24	1.18	0.28
Posttest	Between within	1 78	0.00 1.54	0.01	0.94

The pretest and posttest variables were not significant. Therefore the variances of these variables could be assumed to be equal.

The descriptive statistics for the pretest and posttest scores for both the Life Planning and control groups are presented in Table 7. The Life Planning group consisted of 42 subjects ($n = 42$) and the control group consisted of 38 subjects ($n = 38$).

Table 7

Descriptive Statistics Related to the Pretest and Posttest Scores

Group	Range (Low-high)	M	SD	SEM
Life Planning Pretest	9 (15-24)	20.10	2.49	0.38
Posttest	8 (17-25)	21.55	2.23	0.34
Control Pretest	7 (18-25)	22.34	2.22	0.36
Posttest	9 (16-25)	21.79	2.29	0.37

The pretest scores ranged from 15 to 24 for the Life Planning group and 18 to 25 for the control group. The pretest means were 20.09 for the Life Planning group and 22.34 for the control group.

The posttest scores ranged from 17 to 25 for the Life Planning group and 16 to 25 for the control group. The Life Planning group had a mean of 21.54 for the posttest. The posttest mean for the control group was 21.78.

A one-way analysis of variance was used to test the differences between the Life Planning group and control group. Table 8 shows the results.

Table 8

One-Way Analysis of Variance

Variables	Source	Sum of Square	DF	Mean Square	F-Value	P
Age	Between within	989.13 3,456.85	1 78	989.13 44.31	22.32	0.00
Education	Between within	19.55 49.19	1 78	19.55 0.63	31.00	0.00
Marital Status	Between within	0.56 30.98	1 78	0.56 0.39	1.42	0.23
Pretest	Between within	100.71 438.72	1 78	100.71 5.61	17.14	0.00
Posttest	Between within	1.16 318.72	1 78	1.16 5.11	0.23	0.63

As Table 8 indicates, age, education, and pretest variables were significantly different between the Life Planning and the control groups. The marital status and posttest variables were not significant.

A one-way analysis of covariance was used to see if there were any differences between the adjusted posttest means of the two groups. As Table 9 shows, the adjusted posttest mean for the Life Planning group is larger than the adjusted posttest mean for the control group,

although the regular mean for posttests of both group are not significantly different.

Table 9

Comparison of Means

Group	Pretest	Posttest	Adjusted Posttest
Life Planning	20.10	21.55	22.26
Control	22.34	21.79	20.99

Table 10 presents the summary of analysis of covariance. There are some assumptions underlying this analysis that must be accepted. The pretest and the posttest must have a correlation with each other of between 0.40 and 0.80. In this study the correlation was 0.66. Also the slopes of the regression lines for each of the groups should be the same. This condition was not met. However, since the F-value presented in Table 10 is so large (9.87), the P-Value of 0.002 is significant which explains the big difference in the adjusted posttest means as presented in Table 9. Therefore in this case, it will not cause any problem (Dixon, 1985).

Table 10

Summary of Analysis of Covariance

Source of Variation	DF	Sum Square	Mean Square	F Value	P
Between	1	25.89	25.89	9.87	.002
Error	77	202.06	2.62		

The multiple correlation technique was used to analyze the relationships between all independent variables and the posttest. The correlation coefficient (r) should be equal or larger than 0.312 ($r \geq 0.312$). Table 11 presents the Correlation Matrix for Life Planning group.

Table 11

Correlation Matrix for the Life Planning Group

	Age	Education	Marital Status	Pretest	Posttest
Age	1.00				
Education	-0.002	1.00			
Marital Status	0.46*	-0.277	1.00		
Pretest	-0.071	0.228	-0.157	1.00	
Posttest	0.131	0.275	0.104	0.559*	1.00

* $r > 0.312$

The highest correlation exists between the pretests and posttests. The multiple regression results between the dependent variable posttest and independent variables of age, education, marital status, and pretest are presented in table 12. The multiple R was 0.63 which was significant at all levels ($P = 0.00$). The multiple R square was 0.40.

Table 12

Multiple Regression Results for the Life Planning Group

Source	Sum of Square	DF	Mean Square	F Ratio	P
Regression	81.27	4	20.31	6.10	0.00
Residual	123.15	37	3.32		

Table 13 presents the summary of multiple regressions coefficient. As presented in Table 13, the T value for the pretest was 4.17 at the P-level of 0.00 (see number at asterisk). The other variables were not significant.

Table 13

Summary of Multiple Regression for the Life Planning Group

Variable	Coefficient	STD Error	STD Reg. Coeff.	T	P
Intercept	7.75				
Age	0.02	0.05	0.07	0.49	0.62
Education	0.67	0.43	0.21	1.53	0.13
Marital	0.63	0.44	0.21	1.42	0.16
Pretest	0.49	0.11	0.55	4.17*	0.00

Table 14 presents the correlation matrix for the control group. The highest correlation (r) exists between the pretest and the posttest which is 0.88 (see number at asterisk).

Table 14

Correlation Matrix for the Control Group

	Age	Education	Marital	Pretest	Posttest
Age	1.00				
Education	0.68	1.00			
Marital Status	0.77	0.74	1.00		
Pretest	0.33	0.26	0.36	1.00	
Posttest	0.41	0.32	0.46	0.88*	1.00

In Table 14 the high correlations between marital status and age ($r = 0.77$), and marital status and education ($r = 0.74$) are displayed. The multiple regression results for the control group are presented in Table 15. The multiple R was 0.89 which was significant ($F = 33.04$) at all levels.

Table 15

Multiple Regression Results for the Control Group

Source	Sum of Square	DF	Mean Square	F Ratio	P
Regression	155.49	4	38.87	33.04	0.00
Residual	38.81	33	1.17		

The summary of the multiple regression coefficient for the control group is presented in table 16. The pretest variable is the only significant variable. The T-value for the pretest was 9.71 at the P-level of 0.00 (see number at asterisk) The other variables did not have any significant impact on the posttests for the control group.

Table 16

Summary of Multiple Regression Coefficient for the Control Group

Variable	Coefficient	STD. Error	STD. Reg. Co.eff.	T	P
Intercept	0.94				
Age	0.00	0.00	0.00	0.01	0.98
Education	0.18	0.31	0.07	0.56	0.57
Marital	0.58	0.76	0.11	0.76	0.44
Pretest	0.85	0.08	0.82	9.71*	0.00

A stepwise multiple regression was used to determine which of the variables were the best predictors of how one would perform on the posttest. All of the independent variables were used. In the initial step, the intercept coefficient was 21.54 for the Life Planning group. The order of variables not in equation after this step are presented in Table 17.

Table 17

Variables not in Equation for the Life Planning Group

Variable	Partial Correlation	F to Enter
Age	0.13	0.70
Education	0.27	3.29
Marital Status	0.10	0.44
Pretest	0.55	18.19

In Table 17 the pretest variable has the highest partial correlation (0.55) and F value (18.19). It was entered first in the regression equation. After the first step, the multiple R was 0.56, and the multiple R square was 0.31. There were no other variables with high enough F-value to be entered into the equation. The regression coefficients after the first step are presented in Table 18. The pretest and intercept coefficients were significant at all levels for the Life Planning group.

Table 18

Stepwise Regression Coefficients for the Life Planning Group

Step	Intercept	Age	Education	Marital	Pretest
0	21.54	0.05	0.87	0.30	0.50
1	11.50	0.06	0.49	0.57	0.50

The same procedure was used for the control group. The pretest variable was entered in the equation with the highest F-Value (123.54). The multiple R was 0.88, and the multiple R square was 0.77. The second variable which entered in the regression equation was marital status. The F-Value was 4.12. The multiple R was 0.89, and the multiple R square was 0.79. After the second step, there were no variables with F-Value high enough to enter the equation. Table 19 presents the regression coefficient for the control group.

Table 19

Regression Coefficient for the Control Group

Step	Intercept	Age	Education	Marital	Pretest
0	21.78	0.12	0.83	2.49	0.90
1	1.50	0.04	0.38	0.88	0.90
2	1.36	0.00	0.18	0.88	0.84

The coefficients for the pretest and marital status were the only significant ones. The following chapter discusses the findings.

CHAPTER V

SUMMARY, CONCLUSION, AND RECOMMENDATIONS FOR FURTHER STUDY

This chapter includes a summary of the reseach procedure used and the research findings as well as tests of hypotheses. It also includes a discussion of the results of the investigation and the conclusions and recommendations for future studies.

Summary

This section is devoted to a summary of the research procedures. The hypotheses and the manner in which the data were collected and analyzed have been included in this section.

The purpose of this study was to evaluate the cognitive effectiveness of the contraceptive education program at the Life Planning Clinics in Denton and Lewisville, Texas. A review of literature and related research was conducted to provide background information. Studies chosen for review were those pertaining primarily to teenagers' and adults' knowledge of contraception and sex. Following this review, hypotheses were developed to evaluate the cognitive effectiveness of the contraceptive education program at the Life Planning Clinics.

The total number of subjects were 80 females between the ages of

16 and 39. The subjects consisted of two groups, one composed of 42 new female clients known as the Life Planning group, and the other consisting of 38 female members of First United Methodist Church known as the control group. No participants accepted for this study had had any previous formal contraceptive education.

A 25 item contraceptive knowledge test previously developed and utilized by Reichelt (1973) was used. The instrument was modified to more appropriately serve the purpose of this study. The questionnaire was composed of two sections. The first section elicited demographic information including previous contraceptive education, age, educational level, and marital status. The second section was a test of contraceptive knowledge. The subjects in the Life Planning group were pretested before the educational session started and posttested after the session when they were ready to leave the clinics. The pretest and posttest were conducted with a one-week interval for the control group. The data for this study were collected during the months of October and November, 1986.

The null hypotheses for this study stated there would be no significant difference in contraceptive knowledge of the Life Planning group before and after a contraceptive educational program. A one-way analysis of variance of the mean scores was used to determine if there were statistically significant differences in contraceptive knowledge of both groups. A multiple-regression technique was used to determine if there were statistically significant differences in the degree of

knowledge gained based on three variables: age, educational level, and marital status. Because of the unequal size of the Life Planning and control groups, a LeVene's test of homogeneity of variances was performed. The results of the test indicated that the group variances were equal.

Tests of Hypotheses

The null hypotheses were tested at the .05 level. The results were as follows:

- Rejected: 1. There is no significant difference in contraceptive knowledge of the Life Planning group before and after a contraceptive educational program.
- Rejected: 2. There is no significant difference between the level of contraceptive knowledge of the Life Planning and control groups on pre and posttests.
- Accepted: 3. There is no significant difference between the age level of the Life Planning group and the degree of knowledge gained.
- Accepted: 4. There is no significant difference between the educational level of the Life Planning group and the degree of knowledge gained.
- Accepted: 5. There is no significant difference between the marital status of the Life Planning group and the degree of knowledge gained.

Discussion of the Results

The analysis of variance indicated that there was a significant difference between the ages of the participants of the Life Planning group and the control group. The mean of the control group was about 7 years older than that of the Life Planning group. Also there was a significant difference between the educational level of the Life Planning and control groups. Generally, most women who utilize the services of the family planning clinics such as Life Planning and Planned Parenthood, tend to be younger, less educated, single, and have a lower income. The population in this study reflected these characteristics. Thus, a lower percentage of older, married women with a higher income and education level were found in the Life Planning group than in the control group.

There was a significant difference between the means of the pretest scores of the Life planning and control groups. The control group had a higher mean. A possible explanation of this direction of difference was that the control group subjects on the average had a higher educational level. Also they were older which means perhaps they have had on average more formal contraceptive education and more sexual experience.

The most important finding of this study was the adjusted mean of the posttest scores of the Life Planning group which increased significantly in comparison to that of the control group. This may be

attributed to the effectiveness of the Contraceptive Education Program at the Life Planning clinics in Denton and Lewisville, Texas.

The multiple-regression analysis of data indicated that the pretest variable was the only significant factor in the Life Planning group. This variable explained 40 percent of the variance ($R = 0.40$). The same is true for the control group. The pretest variable explained 89 percent of the variance ($R = 0.89$). This could be the result of the small sample size. Perhaps if there were a larger sample, the other variables such as age, education, and marital status could become significant and have contributed to the degree of knowledge gained.

The stepwise-regression analysis indicated that pretest scores can predict about 50 percent of the posttest scores of the Life Planning group. The other independent variables were not significant. The results for the control group indicated that pretest and marital status were significant. The other independent variables in the control group were not significant.

Conclusion

Based on the research findings and within the limits of this study, the following conclusions have been drawn: contraceptive knowledge of Life Planning clients can be significantly increased through contraceptive education. Also, the degree of gained knowledge was not significantly related to the age, education, or marital status

of the participants. This could be the result of the small sample size.

Recommendations

Based on the findings of this study, the investigator proposes the following recommendations:

1. Replicate this study in the other Life Planning Clinics to effect broader generalizations.
2. Replicate this study with a greater number of subjects for more accurate results.
3. Replicate this study to include better demographic variables concerning the race, socioeconomic status, and religion of the participants.
4. Replicate this study using delayed testing to determine the effect of the education on the retention of contraceptive knowledge.
5. Replicate this study among the Spanish speaking population.

REFERENCES

REFERENCES

- Bachrach, C. A. (1984). Contraceptive practice among american women. Family Planning Perspectives. 16(6), 253-259.
- Commission on Obscenity and Pornography. (1986). The Attorney General's commission on pornography. (0-158-315). Washington, D.C: U.S. Government Printing Office.
- Commission on Obscenity and Pornography. (1970). The report of the commission on obscenity and pornography. (0-407-250). Washington, D.C: U.S. Government Printing Office.
- Cutright, P. & Groeneveld, L. P. (1978). Birth planning success: Motivation contraceptive method. Family Planning Perspective. 10(1), 43-48.
- Darabi, K. F., Jones, J., Varga, P. & House, M. (1982). Evaluation of sex education outreach. Adolescence. XVII (65), 57-64.
- Dawson, D. A. (1986). The effect of sex education of adolescent behavior. Family Planning Perspectives, 18(4), 162-170.
- Dixon, W., Brown, M., Engelman, L., Franc, J., Hill, M., Jennrich, R., & Toporek, J. (1985). BMDP Statistical Software. Los Angles: University of California Press.
- Dryfoos (1982). Contraceptive use, pregnancy intentions and pregnancy outcomes among U.S. women. Family Planning Perspectives. 14(2), 81-83.
- Edwards, L. E., Steinman, M. E., Arnold, K. A., and Kakanson Drick Y. (1980). Adolescent pregnancy prevention services in high school clinics. Family Planning Perspectives. 12(4), 6-14.
- Finkel, M. L., & Finkel, S. (1985). Contraception for teenagers. Society. 50, 48-52.
- Gorden, S., Scales, P. & Everly, K. (1979). The sexual adolescent, second ed. Duxbury press, North Soituate, Mass.
- Gumerman, S., Jacknik, M., & Spiko, R. (1980). Sex education in a rural high school. The Journal of School Health. October, 478-480.

- Hoch, L. L. (1971). Attitude changes as a result of sex education. Journal of Research in Science Teaching. 8 December, 363-367.
- Kapp, L., Taylor, B.A. & Edwards, L. E. (1980). Teaching human sexually in junior high: An interdisciplinary approach. The Journal of School Health. February, 80-93.
- Kasun, J. (1979). Turning children into sex experts. Public Interest. 4(14).
- Kirby, D. (1980). The effects of school sex education programs: A review of literature. The Journal of School Health. Dec., 1980. 559-562.
- Klein, D. (1984). Knowledge, attitude and behavioral changes as a result of sex education. Journal of Sex Education and Therapy, 10(1), 26-30.
- Marsiglio, W. & Mott, F. L. (1986). The impact of sex education on sexual activity, contraceptive use and premarital pregnancy among teenagers. Family Planning Perspectives, 18(4), 151-162.
- Mayadas, Nazneen S. and Duehn, W. D. (1977). Measuring the effects in behavioral sexual counseling with newly married couples. Journal of Sex Education and Therapy. 3(7), 33-37.
- Moore, D. S., & Erickson, P. L. (1985). Age, gender, and ethnic differences in sexual and contraceptive knowledge, attitudes, and behaviors. Family & Community Health, 8(3), 38-51.
- Namerow, P. B. & Philliber, S. G. (1982). The effectiveness of contraceptive programs for teenagers. Journal of Adolescent Health. Vol. 2. March, 189-198.
- Peacock, N. (1983). Contraceptive decision making among adolescent girls. Journal of Sex Education & Therapy. 8(2), 31-34.
- Pippin, G. D. (1978). Effectiveness of sex information dissemination by selected planned parenthood clinics. Unpublished doctoral dissertation, Texas A & M University, Texas.
- Pope, A. J., Westerfield, C. & Walker, J. (1985). The effect of contraceptive knowledge source upon knowledge accuracy and contraceptive behavior. Health Education. 41-44.

- Presser, H. B. (1977). Guessing and misinformation about pregnancy risk among urban mothers. Family Planning Perspectives. 9(3), 111-115.
- Reichelt, P. A. & Werley, H. H. (1975). Contraception, abortion, and venereal diseases: Teenagers' knowledge and the effect of education. Family Planning Perspectives. 7(2), 83-88.
- Shipley, R. R. (1974). Changes in contraceptive knowledge, attitude, and behavior in a college current health problem class. Unpublished doctoral dissertation, Temple University, Philadelphia.
- Voss, J. R. & Mc Killip, J. (1979). Program evaluation of sex education outcome assessment of sexual awareness weekend workshops. Archives of Sexual Behavior. 8(6), 507-521.
- Weller, R. H. and Hobbs F. B. (1978). Unwanted and mistimed births in the United States. Family Planning Perspectives. 10(3), 168-172.
- Zabin, L. S., Hirsch, M. B., Smith, E. A., Street, R., & Hardy, J. B. (1986). Evaluation of pregnancy prevention program for urban teenagers. Family Planning Perspectives. 18(3), 119-126.
- Zelnik, M., & Young, J. K. (1982). Sex education and its association with teenagers sexual activity, pregnancy, and contraceptive use. Family Planning Perspectives. 14(3), 117- 126.

APPENDIX A
LETTERS AND PROCEDURES



Texas Woman's University

P.O. Box 22479, Denton, Texas 76204 (817) TWU-3400, Metro 434-1757

OFFICE OF CONTINUING EDUCATION
THE GRADUATE SCHOOL

61

November 20, 1986

Ms. Farkhondeh Khorrami
2601 Wellington
Denton, TX 76201

Dear Ms. Khorrami:

Thank you for providing the material necessary for the final approval of your prospectus in the Graduate Office. I am pleased to approve the prospectus, and I look forward to seeing the results of your study.

If I can be of further assistance, please let me know.

Sincerely,

Leslie M. Thompson
Provost

cc: Dr. Roger Shipley
Dr. Ann Uhlir

LifePlanning Health Services

62

September 1, 1986

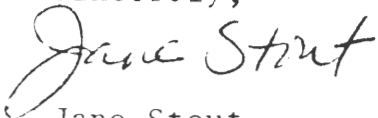
Ms. Farkhondeh Khorrami
2601 Wellington
Denton, Texas 76201

Dear Ms. Khorrami:

Life Planning Health Services is pleased to give you permission to utilize our clinic sites in Denton and/or Lewisville for work on your Master's thesis. You may have access to both charts and patients.

After meeting with you personally, I was confident of your intent and ability to work in a professional matter and protect the confidentiality of our patients. Good luck and do call my office if I can assist you in any way.

Sincerely,



Jane Stout
Community Health Educator

Farkhondeh Khorrami
2601 Wellington
Denton, Tx 76201

September 22, 1986

Dr. Paul A. Reichelt
General Nursing Department
University of Illinois
Medical Center
Room 620
College of Nursing M/C 802
845 South Damen
Chicago, Illinois, 60612

Dear Dr. Reichelt:

I am a graduate student at Texas Woman's University, Denton, Texas. My current research project involves analysis and evaluation of contraceptive knowledge in Life Planning Health Services. While reviewing the literature, the instrument you developed in 1973 has attracted my attention. However, I have not had the privilege to view your original Contraceptive Knowledge Questionnaire. In order to go with my study I need the following from you please.

1. Permission to use the test.
2. Permission to delete some the questions that are not applicable to target group.
3. Explanation on how the test is scored.
4. Information regarding the validity and reliability of the questionnaire.

I will utilize the questionnaire only with your approval and I will give you full credit for the authorship of the instrument in all of my writings concerning the finding of my project.

I will very much appreciate your early response and cooperation. I am looking forward to your reply.

Sincerely yours

Farkhondeh Khorrami



THE
UNIVERSITY
OF
ILLINOIS
COLLEGE
OF NURSING

Department of General Nursing
University of Illinois at Chicago
845 South Damen Avenue
Box 6998, Chicago, Illinois 60680
(312) 896-2112

October 1, 1986

Farkhondeh Khorrami
2601 Wellington
Denton, TX 76201

Dear Ms. Khorrami:

I am pleased to have you use the Sex Knowledge Questionnaire in your study, either in its original form or as you choose to modify it. There is no charge for nonprofit use of the questionnaire. I merely request that acknowledgement of its source be made and that I be sent a copy (or a summary or abstract) of any report which results from its use.

In order to ensure the reliability of the Sex Knowledge Questionnaire, care was taken to word items so that they would be easily understood by adolescents. Subcultural slang terms were avoided. A small pilot study indicated that the items were appropriate for the intended population. Reliability was also addressed by careful control of the situation in which the questionnaire was administered. The lack of a sufficiently large sample suitable for a test-retest study precluded that type of reliability check.

The questionnaire is concerned with information useful for protecting oneself from venereal disease and unwanted pregnancy. Content validity was ensured by deriving items from the available scientific literature and having them reviewed by a panel of health professional experts. Construct validity of the instrument is indicated by the fact that scores increase as a result of receiving education on the topics covered by the instrument.

Rationale: The questionnaire was developed because a review of available instruments revealed that they tended to read more like biology examinations than like instruments directed at information useful to the teenager in his/her daily life. Therefore, I developed a questionnaire that teenagers could easily understand, that could be completed quickly, and that was primarily focused on information directly useful for protecting oneself from venereal disease and unwanted pregnancy. In addition, the questionnaire is devised so that it is possible to distinguish between teenagers' misinformation and lack of information. This is useful for designing an education program which will both provide correct information and which will dispel erroneous myths and folklore the teens believe in.

Good luck with your research.

Sincerely,

Paul A. Reichelt

Paul A. Reichelt, PhD
Associate Professor

PR/aj
Enclosure

APPENDIX B
TEST MATERIALS

SEX KNOWLEDGE QUESTIONNAIRE

Paul A. Reichelt, Ph.D.
University of Illinois at

Chicago

The attached Sex Knowledge Questionnaire, although easily adapted for use with a professional group, has been developed specifically for use with the layman. The items of the questionnaire have been worded so as to be easily understood by adolescents, while at the same time avoiding the use of any subcultural slang. The content emphasis of the questionnaire is on information which is useful to the layman.

The items are therefore scored in terms of general correctness. For example, although there are indications that when taken concurrently the drug Rifampicin (used in treating tuberculosis) may decrease the effectiveness of birth control pills, the scoring indicates that it is true that the pill may be taken along with other medications without decreasing its effectiveness, because with almost all medications this is correct. Also, in terms of scoring, it should be noted that the last item of the Venereal Disease section requires that the appropriate state name be filled in, and that the item be scored to reflect the current legal environment of that state.

The Sex Knowledge Questionnaire utilizes a three-part response scale of "True," "False," and "Don't Know" because it is important to distinguish between lack of information and misinformation. Where misinformation is present, any educational effort should seek both to dispel the misinformation and to present the correct information.

SEX KNOWLEDGE QUESTIONNAIRE

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) _____

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.

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

Venereal Disease (VD)

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

Menstruation (monthly period)

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

The Birth Control Pill

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

The Diaphragm

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

The Condom (rubber)

- ☒ T F DK Using a rubber can help prevent the spread of venereal disease.
- ☒ T F DK A rubber should be tested before use.
- T ☒ F DK Rubbers break easily.
- ☒ 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)

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

Foams, Creams, & Jellies

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

Abortion

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

CONFIDENTIAL

CONFIDENTIAL

CONFIDENTIAL

No Name To Appear On These Pages

Yes No

☐ ☐

If you have used birth control previously, did you go through a formal educational program before obtaining a birth control method?

☐

Last four numbers of your Social Security Number

☐

Your age

Your Education (check one)

☐

Elementary

☐

Junior High

☐

High School

☐

Attended or attending college

☐

College graduate

Marital Status (check one)

☐

Single

☐

Married

☐

Divorced or separated

☐

Widowed

☐

Cohabitation (living together)

CONTRACEPTIVE KNOWLEDGE QUESTIONNAIRE

True and False questions. Read each statement below. If you think it is true, circle T. If you think it is false, circle F.

1. T F Rhythm is a highly effective method of birth control.
2. T F A woman can get pregnant the first time she has intercourse (makes love).
3. T F Douching after intercourse is a highly effective birth control method.
4. T F Sperm can live in the female's reproductive system for about 72 hours (3 days).
5. T F Withdrawal (pulling out) is a highly effective method of birth control.
6. T F If a woman does not have an orgasm (climax) during intercourse, she can't get pregnant.
7. T F The birth control pill must be stopped every year for three months.
8. T F A woman's fertile time (when she is most likely to become pregnant) covers the middle of the interval between her menstrual periods.
9. T F The diaphragm must be worn at all times.
10. T F Using a condom (rubber) can help prevent the spread of venereal disease.
11. T F Foam, cream, or contraceptive jelly should be inserted just before each act of intercourse.
12. T F The birth control pill is generally dangerous to use.
13. T F A diaphragm should be used only after having been fitted by a doctor.
14. T F A condom (rubber) should be examined before use.
15. T F Foam, cream, and contraceptive jelly work by killing sperm.

16. T F The birth control pill may be taken by a woman who uses alcohol and/or other drugs.
17. T F The effectiveness of the diaphragm is increased when used with a cream or contraceptive jelly.
18. T F Condoms (rubbers) break easily.
19. T F Foam, cream, and contraceptive jelly can be bought without a prescription in any drug store.
20. T F The birth control pill should not be taken if the woman has a history of certain illnesses.
21. T F The diaphragm cannot be felt during intercourse by a woman when properly in place.
22. T F The condom (rubber) should be held around the base of the man's penis during withdrawal.
23. T F When used with a condom (rubber), foam, cream, or contraceptive jelly are a highly effective birth control method.
24. T F The birth control pill is the most effective method of birth control besides sterilization.
25. T F Foam, cream, and contraceptive jelly should be washed out with a douche immediately after intercourse.

APPENDIX C

RAW DATA

Raw Data for the Life Planning Group

Student Number	Age	Education	Marital status	Pretest Scores	Posttest Scores
1	33	3	1	19	19
2	28	3	1	19	23
3	17	3	1	19	23
4	27	3	3	19	25
5	34	4	3	19	25
6	36	2	3	18	18
7	34	3	2	16	20
8	21	4	1	22	23
9	17	3	1	22	23
10	17	3	1	22	23
11	28	3	2	19	22
12	18	3	1	16	21
13	19	4	1	19	21
14	17	3	1	23	22
15	19	2	3	22	22
16	25	3	2	21	21
17	18	3	1	22	17
18	21	4	1	19	21
19	35	4	2	24	24
20	20	4	1	23	22
21	16	3	1	23	21
22	18	4	1	18	17
23	16	3	1	18	19
24	18	3	1	18	21
25	22	2	3	17	19
26	18	4	1	23	23
27	22	4	1	21	18
28	24	4	3	21	22
29	20	3	1	20	21
30	34	5	1	22	23
31	19	4	1	17	20

Student Number	Age	Education	Marital status	Pretest Scores	Posttest Scores
32	30	3	1	23	24
33	23	3	2	15	19
34	26	3	3	23	23
35	31	3	2	18	20
36	21	3	2	16	19
37	26	4	2	23	25
38	18	4	1	21	23
39	22	4	2	22	25
40	23	4	2	21	23
41	20	4	1	24	25
42	21	5	2	17	20

Raw Data for the Control Group

Student Number	Age	Education	Marital status	Pretest Scores	Posttest Scores
1	35	5	1	23	22
2	37	5	2	25	24
3	27	5	2	22	22
4	28	5	2	25	24
5	29	5	2	20	20
6	37	4	2	22	23
7	37	5	2	19	21
8	27	5	2	23	22
9	38	3	2	23	23
10	29	5	2	21	21
11	29	5	2	23	22
12	33	5	2	20	19
13	26	5	2	21	20
14	39	5	2	24	22
15	37	5	2	25	25
16	31	5	2	24	24
17	32	5	2	25	25
18	29	4	2	24	24
19	32	4	2	24	21
20	39	5	2	24	23
21	30	5	2	25	25
22	39	5	2	20	20
23	37	5	2	23	23
24	35	4	2	25	24
25	18	3	1	22	23
26	17	3	1	23	21
27	17	3	1	19	16
28	39	5	2	24	22
29	18	3	1	18	18

Student Number	Age	Education	Marital status	Pretest Scores	Posttest Scores
30	16	3	1	20	19
31	36	5	2	25	25
32	30	5	2	24	25
33	37	5	2	20	19
34	31	4	2	23	23
35	36	5	2	18	18
36	22	4	1	19	19
37	18	3	1	20	20
38	20	2	1	24	21