1992

Family planning knowledge of late adolescents : impact of a peer education workshop

Fiona Dschida
San Jose State University

Follow this and additional works at: https://scholarworks.sjsu.edu/etd_theses

Recommended Citation

Dschida, Fiona, "Family planning knowledge of late adolescents : impact of a peer education workshop" (1992). *Master's Theses*. 454.
DOI: <https://doi.org/10.31979/etd.z6dg-22xw>
https://scholarworks.sjsu.edu/etd_theses/454

This Thesis is brought to you for free and open access by the Master's Theses and Graduate Research at SJSU ScholarWorks. It has been accepted for inclusion in Master's Theses by an authorized administrator of SJSU ScholarWorks. For more information, please contact scholarworks@sjsu.edu.

INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

U·M·I

University Microfilms International
A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
313/761-4700 800/521-0600

Order Number 1351025

**Family planning knowledge of late adolescents: Impact of a peer
education workshop**

Dschida, Fiona Mary, M.S.N.

San Jose State University, 1992

U·M·I

300 N. Zeeb Rd.
Ann Arbor, MI 48106

FAMILY PLANNING KNOWLEDGE OF LATE ADOLESCENTS:
IMPACT OF A PEER EDUCATION WORKSHOP

A Thesis

Presented to

The Faculty of the Department of Nursing
San Jose State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

By

Fiona Dschida

December 1992

APPROVED FOR THE DEPARTMENT OF NURSING

Mary Reeve

Mary Reeve, Ed.D., R.N.

Susan Murphy

Susan Murphy, D.N.Sci., R.N.

Mahnaz Motayar

Mahnaz Motayar, M.P.H.

APPROVED FOR THE UNIVERSITY

Serena H. Stanford

ABSTRACT

FAMILY PLANNING KNOWLEDGE OF LATE ADOLESCENTS: IMPACT OF A PEER EDUCATION WORKSHOP

by Fiona Dschida

This thesis analyzed differences in family planning knowledge scores before and after a peer education workshop. A cross-sectional survey research design was used to collect data from a sample of university students.

At a 95% confidence level, it was unlikely there was a significant difference between the pre - and posttest scores for those who attended the peer education workshop. Additionally, t-test results of pretest and posttest scores for gender showed no statistically significant differences.

The ANOVA results showed no statistically significant results in the pretest scores for age. However, there were statistically significant results ($p < .05$) in the posttest scores for age. Further analysis, using Fisher's LSD, showed that the posttest scores of the 17 and 18-year-olds significantly differed ($p < .05$) from the posttest scores of the 19-year-olds.

ACKNOWLEDGEMENTS

To my husband, William, for his love and assistance in many ways; to our children Ryder, Gwendolyn, and Kodiak for their patience; to Naz Motayar for her assistance in collecting the data; to Joel Talcott for his assistance in the data analyses; and to the faculty of San Jose State University for their guidance and inspirations.

TABLE OF CONTENTS

	Page
ABSTRACT	iii
LIST OF TABLES	vii
Chapter	
1. INTRODUCTION	
Statement of Problem	1
Significance of the Study	3
Purpose and Research Question	5
Definitions of Terms	5
Summary	6
2. CONCEPTUAL FRAMEWORK AND REVIEW OF RELATED LITERATURE	
Conceptual Framework	7
Review of Related Literature	10
Summary	12
3. RESEARCH METHODOLOGY	
Research Design	14
Setting and Sample	15
Data Collection Process	15
Measurement	16
Data Analyses	20
4. DATA ANALYSES AND INTERPRETATION	
Demographics	21
Confidence Intervals of Pretest and Posttest Population Means	27

Chapter	Page
4. DATA ANALYSES AND INTERPRETATION	
<u>T</u> -test of Knowledge Questionnaire Scores	
for Gender	29
ANOVA of Knowledge Questionnaire Scores	
for Age	31
Fisher's LSD of Posttest Scores for Age	32
Chapter	
5. DISCUSSION	
Summary	33
Conclusions	34
Scope and Limitations	35
Recommendations	36
REFERENCES	38
APPENDIXES	
A. Peer Education Curriculum Outline	43
B. Peer Educator Certification	46
C. Permission to Use Knowledge Questionnaire	48
D. Consent of Peer Education Workshop Director ...	50
E. Consent Form	52
F. Knowledge Questionnaire	54
G. Knowledge Questionnaire Instruction Sheet	57

LIST OF TABLES

Table	Page
1. Contraception Questions	17
2. Reproductive Physiology Questions	18
3. Sexually Transmitted Diseases Questions	19
4. Demographic Data on Completed Pre - and Posttests	22
5. Subject Gender	22
6. Subject Age	23
7. Distribution of Students and Total Correct Scores	23
8. Distribution of Students and Correct Contraception Subscores	25
9. Distribution of Students and Correct Reproductive Physiology Subscores	26
10. Distribution of Students and Correct Sexually Transmitted Diseases Subscores	26
11. Pre - and Posttest Means and Standard Deviations	28
12. <u>T</u> -test of Pretest Scores for Gender	30
13. <u>T</u> -test of Posttest Scores for Gender	30
14. ANOVA of Pretest Scores for Age	31
15. ANOVA of Posttest Scores for Age	32

Chapter 1

INTRODUCTION

Statement of Problem

Sociologists define a social problem as a "condition affecting a significant number of people in ways considered undesirable, about which it is felt something can be done through collective social action" (Davis, 1989 p. 19). However, Davis argues that it may be more useful to define the social problem of teen pregnancy as a "condition of society that has negative effects on a relatively large number of people" (p. 19). For example, Singh (1986) found that social factors such as high rates of population growth and residential mobility over the previous decade, high crime rates, high teen suicide rates, and extensive circulation of sexually explicit magazines are all associated with high pregnancy-related rates for teens. Yet Trussell (1988) states that there is little guidance for formulating public policy on sex education because reasons for concern vary widely according to what people perceive to be the problem. For example, Trussell outlines three viewpoints on the subject of sex education. The first viewpoint promotes a vigorous campaign to promote traditional family values. The second viewpoint supports providing adolescents with accurate information on reproductive biology and contraception. The third viewpoint

stands to ameliorate the adverse consequences of adolescent childbearing by providing abortion services and programs designed to assist adolescent parents and their children. Each viewpoint plays an important role in the whole picture of teenage pregnancy.

This study concentrated on determining the effect of peer education, a relatively new approach to sex education which encompasses the second viewpoint, on family planning knowledge attainment in a group of late adolescents. Davis (1989) believes that if we (as a society) want adolescents to be more sexually responsible, then we must provide adolescents with the means and the knowledge.

In a survey conducted by Planned Parenthood (1987), many adolescents were confused or uncertain about knowledge of basic facts about sexuality. Twenty-five percent of the adolescents surveyed by Planned Parenthood (1987) stated they did not know enough about contraceptives. Moreover, one of the most common reasons adolescents gave for not using birth control was that they thought they could not conceive (Trussell, 1988). Following the example of other countries, particularly Sweden, the incidence of adolescent pregnancy might be reduced if effective contraceptives were made widely available along with information about contraception, reproductive biology, and responsible sexual behavior (Trussell, 1988).

The problem for health educators is to find effective teaching methods appropriate to late adolescents. One way to find effective teaching methods is to utilize Piaget's (1973) theory of cognitive development and Erickson, Tomlin, and Swain's (1983) theory of modeling and role modeling to create curricula which address late adolescents' unique learning needs and styles.

This study explored the impact of a peer education workshop on family planning knowledge by comparing pre and post knowledge questionnaire test scores. Evaluating the effectiveness of a peer education workshop may assist the health educator in deciding how to effectively teach late adolescents about family planning.

Significance of the Study

Sexual activity, sexually transmitted diseases, and unintended pregnancies have increased among adolescents since 1970 (Center for Disease Control, 1992). Three national surveys of young women (NSYM) conducted in 1971, 1976, and 1979 showed a substantial increase between 1971 and 1979 in sexual activity (Hofferth, Kahn, & Baldwin, 1987). The Center for Disease Control (CDC, 1992) reported that 86% of all sexually transmitted diseases occur among ages 15-29. One out of ten women aged 15-19 becomes pregnant each year in the United States; of these, 5 out of 6 are unintended (Trussell, 1988).

Sexual activity among adolescents can be damaging developmentally, emotionally, and physically (Paul & White, 1990; Riessman, Whalen, Frost, & Morgenthau, 1991; and Romig & Bakken, 1990). The implications of adolescent pregnancy and parenting have been well researched and documented (Hofmann & Greydanus, 1989; Makinson, 1985; Rogel & Zuehlke, 1982; and Zabin, 1990). Younger mothers are much less likely to receive prenatal care, and anemia, pre-eclampsia, and low birth weight occur more frequently in this population. Additionally, children of adolescent parents are at increased risk for sudden infant death syndrome, child neglect, and child abuse (Makinson).

Sex education in schools has been significantly associated with lower pregnancy rates, especially among white adolescents (Singh, 1986). Peer education is one of the most effective ways of teaching family planning to adolescents. The use of peers as educators has shown to be successful in prolonging abstinence and in changing behaviors associated with the appropriate use of contraceptive methods as well as avoiding sexually transmitted diseases (Kirby, Barth, Leland, & Fetro, 1991).

To date, a limited number of studies exist on the impact of peer education and family planning knowledge in late adolescence. This study may provide the health educator with information that might serve as a guide and a

knowledge base for curriculum development.

Purpose and Research Question

The purpose of this study was to measure the differences between family planning knowledge test scores before and after a peer education workshop. Health educators are faced with the challenge of how to effectively incorporate adolescents' unique cognitive developmental needs and learning styles into family planning curricula. Understanding the impact of a peer education workshop on family planning knowledge may assist health educators in deciding if peer education is an effective teaching strategy to use among late adolescents.

The research question which guided this study was:
Is there a change in family planning knowledge among late adolescents after a peer education workshop?

This study was designed to assess late adolescents' family planning knowledge. The assumption was made that the more congruent sex education is with late adolescents' cognitive level and learning styles, the higher the family planning knowledge.

Definitions of Terms

For the purpose of this study, the following definitions applied:

1. Peer education is education which involves active participation in class among class participants (peers) (see

Appendix A). This active participation could include role playing, reverse role playing, communication facilitator, or modeling of socially desirable behavior (Kirby et al., 1991).

2. Peer educator is a student who has successfully completed the Health Promotion through Peer Education (HS 196D) (see Appendix B) and has received certification through the Student Health Service (Motayar, 1992).

3. Knowledge of family planning is defined by determining the adolescent's score on the pre and post knowledge questionnaires. The higher the score on the questionnaire, the higher the knowledge of family planning.

Summary

Adolescent sexuality and sexual activity have many implications on adolescents' general health. Studies have shown that many adolescents do not have basic knowledge on reproductive physiology, safer sex practices, or contraception. In order to promote healthy sexual practices, adolescents need sex education which is geared toward their unique learning styles and needs.

Chapter 2

CONCEPTUAL FRAMEWORK AND REVIEW OF RELATED LITERATURE

Conceptual Framework

Piaget's (1973) cognitive development theory and Erickson and others' (1983) modeling and role modeling provide conceptual frameworks for this study. Piaget provides a framework for determining late adolescents' cognitive appropriateness to curriculum content. Erickson et al. provide a framework for implementing the curriculum in a meaningful and effective manner.

Piaget (1973) believed that cognitive learning develops in a sequential manner, and he identified several periods in this process. Essentially, there are four periods of cognitive learning: sensorimotor, preoperational, concrete operations, and formal operations. Additionally, Piaget discusses four major concepts: schemata, assimilation, accommodation, and equilibration.

Briefly, these concepts are described: (a) schemata are the cognitive structures by which individuals adapt to and organize their environment intellectually, (b) assimilation is a cognitive process by which the person integrates new information into existing schemata, (c) accommodation is the establishment of a new schema or the modification of an old schema in order to accommodate new information, and (d) equilibration is the balance between assimilation and

accommodation (Piaget, 1973).

For the purpose of this study, the final period in cognitive development, formal operations, will be addressed. According to Piaget (1971) this period generally emerges between ages 11 and 15.

Formal operations is characterized by combinatory and logic of propositions elements. In formal operations the adolescent is able to think logically and manipulate abstract concepts. Hypothetical, deductive thought processes begin to occur. An adolescent is capable of reasoning on proposition; manipulating propositions of reasoning by placing him/her self in the viewpoints of others; and manipulating propositions in a formal and hypothetico-deductive manner (Piaget, 1973).

A distinctive feature of formal thought is the role of statements about possibility relative to statements about empirical reality. There is a reversal of the direction of thinking between reality and possibility in the adolescent's method of approach. This feature of formal thought may induce egocentrism. Piaget states (Inhelder & Piaget, 1958) that egocentrism stems directly from the adaptation of adult roles since the adolescent not only may try to adapt his/her ego to the social environment, but may also try to adjust the environment to his/her ego.

Piaget goes further to state (Inhelder & Piaget, 1958)

that to understand the role of formal structures of thought in the life of the adolescent, one needs to place these formal structures in the adolescent's total personality. Erickson et al. (1983) provide a conceptual framework for understanding an adolescent's view of the world.

Erickson et al. (1983) state that "human beings are holistic persons who have multiple interacting subsystems" (p. 44). The role of the health educator is to model and role model the student's world for the purpose of enhancing health. The health educator is a facilitator, and the health educator-student relationship is an "interactive, interpersonal process that aids the individual to identify, mobilize, and develop his/her own strengths" (p. 48).

The act of modeling is the process the health educator uses to develop an image and understanding of the student's world--an image and understanding developed within the student's framework and from the student's perspective (Erickson et al., 1983). Role-modeling is the facilitation of the individual in attaining, maintaining, or promoting health through purposeful interventions. The health educator plans and implements interventions that are unique to the student and are based on theoretical knowledge.

This study evaluates the impact of a peer education workshop by measuring differences in knowledge test scores before and after the workshop. The organization of the peer

education workshop curriculum was based on Piaget's (1973) theory of cognitive development. Curriculum implementation was based on Erickson and others' (1983) theory of modeling and role-modeling.

Review of Related Literature

The use of peer education as a teaching strategy in adolescent family planning has been well documented in the literature. In a study conducted by Kirby et al. (1991), the most successful intervention modality was the use of role models. The researchers found that those students who participated in the peer education and who were not already sexually active significantly delayed the onset of their first intercourse experience. Those students who were already sexually active did not change the frequency of their sexual experiences but did use birth control and precautions against sexually transmitted diseases more effectively and consistently.

In their research Kirby et al. (1991) studied the impact of a peer education program based on Bandura's social learning theory, McGuire's social inoculation theory, and cognitive behavior theory. The quasi-experimental study determined knowledge score differences between control and treatment groups of adolescents. The sample size consisted of 758 ninth through twelfth grade students, 429 in the treatment group and 329 in the control group. Reducing The

Risk, the peer education program, was used as the treatment program in this study. At six months and eighteen months after completing the treatment program, the researchers found a significant increase in knowledge ($p < .001$) in the treatment group versus the control group.

Eisen, Zellman, and Mc Allister (1990) assessed the impact of a sex education curriculum based on the health belief model and social learning theory. A controlled field study of the standard sexuality and contraceptive education curricula was compared with the experimental curriculum. The researchers evaluated changes in sexual and contraceptive knowledge of 1,444 adolescents between the ages of 13 and 19. A 20% increase in short-term knowledge in both groups was determined after completion of both types of sex education curricula. However, a regression equation of two variables, experimental program and demographic characteristics, showed that participants in the experimental program had higher knowledge scores ($p < .05$) at the immediate follow-up than students in the control group.

Winter and Breckenmaker (1991) tested an experimental service protocol in six nonmetropolitan family planning clinics. The experimental protocol included in-depth counseling, education geared to an adolescent's level of development, and the provision of reassurance and social

support. The study involved 1,261 family planning clients under 18 years of age. The experimental group consisted of 518 clients, and the control group consisted of 738 clients. The researchers found a significant difference ($p < .01$) in the knowledge quiz scores of clients who were exposed to the experimental protocol compared to the knowledge quiz scores of clients who were exposed to the control protocols.

Other studies on the impact of sex education on knowledge and contraception use have had mixed results. Zelnik and Kim (1982) found a weak relationship between having had sex education and the use of contraception both during first intercourse and during any sexual experience. Marsiglio and Mott (1986) found inconsistent results between sex education and subsequent use of birth control. However, the researchers noted that knowledge on the time of greatest pregnancy risk during the menstrual cycle was significantly higher ($p < .01$) for adolescents who took a sex education course compared to adolescents who did not take a sex education course.

Summary

Recent research studies support the use of peer education as an effective teaching strategy to increase adolescents' knowledge of family planning and positively change adolescents' contraceptive or sexual behavior. However, some research studies suggest mixed results on the

impact of sex education on knowledge and contraceptive use.

Chapter 3
RESEARCH METHODOLOGY

Research Design

This study used a cross-sectional survey research design to measure family planning knowledge differences before and after a peer education workshop. Permission to use the questionnaire tool was granted (see Appendix C), and the peer education workshop director agreed to participate in this study (see Appendix D). The questionnaire allowed for complete anonymity; demographic data included age and gender. Subjects were assured that their identity would not be disclosed in any published report.

Convenience sampling was used in selecting the subjects. In this method of sample selection, every person who met the criteria was asked to participate. The 88 undergraduate university students were English speaking, literate late adolescents (independent variables). A major variable which could not be controlled was previous formal or informal sex education. The tool was designed by Barth, Fetro, Leland, and Volkan (1990) and has been tested for validity and reliability. Validity was assessed by an advisory board review of experts and by several small groups of youths. Items with low correlations were removed (Kirby, 1990). Items that measured skills and behaviors had an inter-item reliability of .83 based on Cronbach's alpha.

Setting and Sample

The study sample consisted of 88 university undergraduate students who completed the survey. The university was a large, urban (metropolitan) campus in northern California. The students represented a fairly equal distribution of males and females mostly 18 years of age. Data collection took place at the student health center classroom on campus.

Data Collection Process

Approval to collect data was granted by the Human Subjects Review Board. The director of the peer education workshop instructed the students on the purpose of this study. The students each signed a consent form (see Appendix E) and were each given a 20-item knowledge questionnaire (see Appendix F). The director followed a standardized instruction sheet (see Appendix G) and gave explicit instructions on how to fill out the questionnaire. The students were then directed to fill in the two demographic information items on the questionnaire and instructed to answer the 20 questions by marking either true, false, or do not know. The knowledge questionnaires were distributed and collected before the peer education workshop began and after the peer education workshop ended.

Measurement

Knowledge Scores

Knowledge was measured by the knowledge questionnaire (Kirby, 1990). The pretests and posttests were compared by group mean scores. The knowledge questionnaire was developed to assess attainment of knowledge on topics related to family planning. The questionnaire was a reflection of the material taught during the peer education workshop.

Content of the Knowledge Questionnaire

The knowledge questionnaire consisted of 20 questions. The majority of the questions were contraception related items. These questions can be found in Table 1. A few questions pertained to reproductive physiology and some questions were related to prevention of sexually transmitted diseases. Table 2 shows questions related to reproductive physiology, and Table 3 shows questions related to prevention of sexually transmitted diseases.

Table 1

Contraception Questions (N = 13)

-
2. Couples who use withdrawal (pulling the penis out before the guy comes) do not have to worry about pregnancy.
 3. The birth control pill is as effective as abstinence (not having sex) in preventing pregnancy.
 5. The best way to use a condom (rubber) is to leave some space at the tip for the sperm.
 6. Men who have sex many times without using birth control will probably get a woman pregnant.
 7. The correct way to use a contraceptive sponge is to put it in the vagina no more than 24 hours before having sex.
 8. To use a condom (rubber) correctly, a person must hold it on the penis while pulling out of the vagina.
 9. The contraceptive sponge will not work if you have sex more than once.
 10. A woman can prevent pregnancy by douching (washing out the vagina) immediately after having sex.
-

table continues

Table 1

Contraception Questions (N = 13)

-
12. It is legal for teenagers to buy contraceptive foam, cream, jelly, sponges, or condoms at a drug store without a prescription.
14. Teenagers can get birth control pills from family planning clinics and doctors without parent's knowledge.
15. Contraceptive foam, jelly, or cream can be put in the vagina many hours before you have sex.
17. If a woman forgets to take her birth control pill for three consecutive days she is still protected from getting pregnant.
19. A woman is protected from becoming pregnant as soon as she starts taking the pill.
-

Table 2

Reproductive Physiology Questions (N = 2)

-
1. A woman cannot get pregnant the first time she has sex.
13. A woman can get pregnant any time during the month.
-

Table 3

Sexually Transmitted Diseases Questions (N = 5)

4. Latex condoms are better than animal-skin condoms for preventing sexually transmitted diseases including AIDS.
 11. Using a condom (rubber) whenever you have sex with someone with a STD (sexually transmitted disease) will probably protect you from getting the disease.
 16. Using condoms (rubbers) is the most effective way of all methods to avoid pregnancy and STDs.
 18. Contraceptive foam, jelly, cream and sponges provide some protection against some STDs.
 20. The condom (rubber) is more effective than the contraceptive sponge at preventing STDs.
-

Reliability and Validity

Cronbach's alpha was used to determine inter-item reliability for items that measured skills and behaviors. The Cronbach alpha for these items was .83.

Validity of this knowledge questionnaire was assessed by an advisory board review of experts and by several small groups of youths. Items with low correlations were removed (Kirby, 1990).

Data Analyses

The knowledge questionnaires were scored by totaling the numerical values assigned to each answer. The numerical values were assigned to each answer as follows: (a) wrong = 0, (b) do not know = 0, and (c) correct = 1. Missing data had a numerical value of 9.

The scores from these data were entered into a computer for analysis using the Statistical Program for the Social Sciences (SPSS). Descriptive statistics (crosstab tables and percent occurrences) were calculated on the demographic data. Confidence intervals were computed on the population means of the pre - and posttest scores. T-tests for independent group means were computed for (a) male and female pretest scores and (b) male and female posttest scores. Missing data were deleted on a case by case basis.

A one-way analysis of variance was computed for (a) pretest scores of the 17, 18, and 19-year-olds and (b) posttest scores of the 17, 18, and 19-year-olds. The total number of missing data were deleted in each case. A post-hoc test, Fisher's least significant difference (LSD), was computed on the posttest scores of the 17, 18, and 19-year-olds since the ANOVA posttest results showed a significant interaction among these age groups.

Chapter 4

DATA ANALYSES AND INTERPRETATION

The results of this study are described in four sections. The first section focuses on the demographics. The second section focuses on the confidence intervals for the means of the pretest scores and posttest scores. The third section focuses on the t -test results for pretest and posttest scores for gender. The fourth section focuses on the ANOVA results for pretest and posttest for age.

Demographics

Demographic data included the number of students who completed the pre - and posttests, age, and gender. Eighty eight students completed the pretest, and 79 students completed the posttest as shown in Table 4. Three age groups were represented; however, as Table 5 shows, the majority of students (61.5%) were aged 18 years. Table 6 shows that more females (64%) represented the study sample than males (36%). The distribution of students and total correct scores is shown in Table 7. The distributions of students and correct contraception subscores, correct reproductive physiology subscores, and correct sexually transmitted diseases subscores are shown in Tables 8, 9, and 10, respectively.

Table 4

Demographic Data on Completed Pretests and Posttests(N = 168)

Test	Frequency	Percent
Pretest	88	52.4
Posttest	79	47.0
Missing data	<u>1</u>	<u>0.6</u>
Total	168	100.0

Table 5

Subject Gender (N = 168)

Gender	Frequency	Percent
Male	58	34.5
Female	103	61.3
Missing data	<u>7</u>	<u>4.2</u>
Total	168	100.0

Table 6

Subject Age (N = 168)

Age	Frequency	Percent
17	37	22.0
18	91	54.2
19	20	11.9
Missing data	<u>20</u>	<u>11.9</u>
Total	168	100.0

Table 7

Distribution of Students and Total Correct Scores (N = 168)

Score	Frequency	Percent
0	1	0.6
1	0	0.0
2	1	0.6
3	2	1.2
4	1	0.6
5	2	1.2

table continues

Table 7

Distribution of Students and Total Scores (N = 168)

Score	Frequency	Percent
6	3	1.8
7	2	1.2
8	2	1.2
9	5	3.0
10	6	3.6
11	7	4.2
12	6	3.6
13	17	10.1
14	13	7.7
15	11	6.5
16	22	13.1
17	21	12.5
18	19	11.3
19	6	3.6
20	1	0.6
Missing data	<u>20</u>	<u>11.9</u>
Total	168	100.0

Table 8

Distribution of Students and Correct Contraception Subscores
(N = 168)

Score	Frequency	Percent
0	2	1.2
1	1	0.6
2	2	1.2
3	1	0.6
4	6	3.6
5	6	3.6
6	9	5.4
7	13	7.7
8	6	3.6
9	18	10.7
10	25	14.9
11	26	15.5
12	26	15.5
13	11	6.5
Missing data	<u>16</u>	<u>9.5</u>
Total	168	100.0

Table 9

Distribution of Students and Correct Reproductive
Physiology Subscores (N = 168)

Score	Frequency	Percent
0	5	3.1
1	35	20.8
2	120	71.4
Missing data	<u>8</u>	<u>4.8</u>
Total	168	100.0

Table 10

Distribution of Students and Correct Sexually Transmitted
Diseases Subscores (N = 168)

Score	Frequency	Percent
0	5	3.0
1	18	10.7
2	27	16.1
3	46	27.4
4	50	29.8

table continues

Table 10

Distribution of Students and Correct Sexually Transmitted
Diseases Subscores (N = 168)

Score	Frequency	Percent
5	11	6.5
Missing data	<u>11</u>	<u>6.5</u>
Total	168	100.0

Confidence Intervals of Pretest and Posttest

Population Means

The knowledge questionnaires were analyzed for differences between the means of the pre - and posttest populations scores. A 95% confidence interval was used to determine differences in the range of means for the pre - and posttest scores.

Table 11 shows the mean scores and standard deviations of the populations administered the pretests and posttests. The upper and lower limits of the confidence interval were calculated using a two-tailed test.

Table 11

Pre - and Posttest Means and Standard Deviations (N = 148)

Test	Frequency	Mean	Standard Deviation
Pre	76	12.99	4.24
Post	72	15.14	3.33

The upper limit of the confidence interval for the pretest population mean score is 21.38. The lower limit of the confidence interval for the pretest population mean score is 4.59. The upper and lower limits of the confidence interval was calculated as follows for the upper limit, $12.99 + 1.98(4.24) = 21.38$ and for the lower limit, $12.99 - 1.98(4.24) = 4.59$. At the 95% confidence level, the true mean of the population that took the pretest is between 4.59 and 21.38.

The upper limit of the confidence interval for the posttest population mean score is 21.73, and the lower limit of the confidence interval for the posttest population mean score is 8.55. The upper and lower limits of the confidence interval was calculated as follows for the upper limit, $15.14 + 1.98(3.33) = 21.73$ and for the lower limit, $15.14 - 1.98(3.33) = 8.55$. At the 95% confidence level, the true

$15.14 + 1.98(3.33) = 21.73$ and for the lower limit, $15.14 - 1.98(3.33) = 8.55$. At the 95% confidence level, the true mean of the population that took the posttest is between 8.55 and 21.73.

The data show, at the 95% confidence level, there is overlapping in the mean distributions of the populations of pre - and posttest scores. Therefore, the researcher is not 95% confident that there is a significant difference between the mean scores of the populations administered the pre - and posttests.

T-test of Pre - and Posttest Scores for Gender

The knowledge questionnaire was analyzed for differences between (a) pretest scores for males and females and (b) posttest scores for males and females. The t-test results of the pretest scores are shown in Table 12, and the t-test results of the posttest scores are shown in Table 13.

T-test of Pretest Scores for Gender

Table 12 shows that there is a nonsignificant difference between pretest scores for gender, [$t(74) = .30$, $p < .763$]. The mean pretest score for males is 13.19 with a standard deviation of 3.87. The mean pretest score for females is 12.88 with a standard deviation of 4.46.

Table 12

T-test of Pretest Scores for Gender (N = 76)

Gender	Frequency	Mean	Standard Deviation
Male	26	13.99	3.87
Female	50	12.88	4.46

T-test of Posttest Scores for Gender

Table 13 shows that there is a nonsignificant difference between posttest scores for gender, [$t(65) = .93$, $p < .356$]. The mean posttest score for males is 15.75 with a standard deviation of 1.48. The mean posttest score for females is 14.98 with a standard deviation of 3.91.

Table 13

T-test of Posttest Scores for Gender (N = 67)

Gender	Frequency	Mean	Standard Deviation
Male	24	15.75	1.48
Female	43	14.98	3.91

ANOVA of Pre - and Posttest Scores for Age

The knowledge questionnaire was analyzed for differences among (a) pretest scores for age and (b) posttest scores for age. The ANOVA results of the pretest scores are shown in Table 14, and the ANOVA results of the posttest scores are shown in Table 15.

ANOVA of Pretest Scores for Age

Table 14 shows nonsignificant results in the pretest scores of 17, 18, and 19-year-olds, [$F(2,66) = .49, p > .05$].

Table 14

ANOVA of Pretest Scores for Age (N = 68)

Source of Variation	Sum of Squares	DF	Mean Square	F
Between Groups	18.21	2	9.10	.49
Within Groups	1211.62	66	18.36	---
Total	1229.83	68	---	---

ANOVA of Posttest Scores for Age

Table 15 shows significant results in the posttest scores of 17, 18, and 19-year-olds, [$F(2,58) = 3.99, p < .05$].

Table 15

ANOVA of Posttest Scores for Age (N = 60)

Source of Variation	Sum of Squares	DF	Mean Square	<u>F</u>
Between Groups	82.86	2	41.43	3.99*
Within Groups	602.45	58	10.39	---
Total	685.31	60	---	---

Note. * = Statistically Significant ($p < .05$).

Fisher's LSD Analysis of Posttest Score for Age

The ANOVA of posttest scores for age indicated an age effect. Fisher's LSD was used to determine pair-wise differences among the posttest scores. Seventeen and 18-year-olds had significantly different posttest scores than 19-year-olds at the $p < .05$ level.

Chapter 5

DISCUSSION

Summary

The purpose of this study was to measure differences in family planning knowledge scores among a population of late adolescents before and after a peer education workshop. The study question was: Is there a change in family planning knowledge among late adolescents after a peer education workshop? An assumption was made that the more congruent sex education is with late adolescents' cognitive level and learning styles, the higher the family planning knowledge.

The findings from this study of 88 university students indicated that at a 95% confidence level, it was unlikely that there were differences between the mean scores of the pre - and posttest populations. Additionally, the t-test results showed nonsignificant differences in pretest scores between males and females and nonsignificant differences in posttest scores between males and females.

The ANOVA results of the pretest scores for age showed no significant results for 17, 18, and 19-year-olds. However, the ANOVA results of the posttest scores showed significant results for 17, 18, and 19-year-olds. A post-hoc test, Fisher's LSD, showed that 17 and 18-year-olds had significantly different ($p < .05$) posttest scores than 19-year-olds.

These findings, in answer to the research question, suggest that there was not a change in family planning knowledge among late adolescents after a peer education workshop. A significant difference was found between posttest scores for 17 and 18-year-olds and posttest scores for 19-year-olds. This suggests that family planning knowledge increased when sex education was congruent with late adolescents' cognitive level and learning styles. Therefore, the study's assumption was partly supported.

Conclusions

This study found that at the 95% confidence level, it was unlikely there was a significant difference between the pre - and posttest scores for those who attended the peer education workshop. This finding is surprising since Kirby et al. (1991) found an increase in knowledge scores using the same knowledge questionnaire and a similiar peer education curriculum that were used in this study. In the study done by Kirby et al., the pretest total score was 57% correct responses compared to 75% correct responses at posttest. Additionally, Winter and Breckenmaker (1991) found an increase in knowledge scores for the experimental group in their study. The experimental group was exposed to family planning education which was geared to their cognitive developmental level. The experimental group had a pretest score of 82.7 and a posttest score of 86.9.

Nonsignificant differences were found between the pretest scores for males and females and the posttest scores for males and females. This finding is supported by Kirby et al. (1991). The knowledge gain for males and females in their study was approximately equal.

Nonsignificant results were found in the pretest scores for 17, 18, and 19-year-olds. However, statistically significant results ($p < .05$) were found in the posttest scores for 17, 18, and 19-year-olds. Further analysis using Fisher's LSD showed that 17 and 18-year-olds had significantly different ($p < .05$) posttest scores than 19-year-olds.

These findings may imply that this peer education workshop had a greater effect on the knowledge posttest scores for 17 and 18-year-olds than for 19-year-olds. As Kirby (personal communication, October, 1992) suggested, adolescents "reach a plateau" in their knowledge of family planning. This "plateau" may explain the results of the post-hoc test which showed that 17 and 18-year-olds had significantly different posttest scores than 19-year-olds.

Scope and Limitations

The scope of this study was limited by the measurement tool. The 20-item knowledge questionnaire was designed to assess knowledge of family planning topics and issues that were unique to a sex education curriculum.

The questionnaire tool did not assess ethnic or cultural influences on knowledge attainment. As Singh (1986) found in her study, white adolescents were more positively affected by having sex education than other ethnic groups. Additionally, recent studies have shown that behavior and attitudes play an important role in contraception use, and knowledge may not be a strong indicator of contraception use (Kirby et al., 1991; Marsiglio & Mott, 1986; Zelnik & Kim, 1982).

This study was also limited by design and sample. A nonexperimental research design prevented the investigator from establishing cause-effect relationships between the variables since the populations administered the pre - and posttests could not be matched. The researcher was unable to quantify individual knowledge score changes since an individual status in the pre - and posttest conditions could not be established. The results of this study can not be generalized because of the small sample size.

Recommendations

A recommendation for further study is to replicate the study. Including demographic information on previous sex education, cultural, and ethnic affiliation may provide important variables for interpreting statistical analyses.

Lastly, studies which measure the impact of programs on behavior or attitude changes associated with contraceptive

use may provide important information. For health educators, this information could serve as a guide and as a knowledge base for developing family planning curricula which are specifically designed to meet adolescents' unique cognitive and learning style needs.

References

References

- Barth, R., Fetro, J., Leland, N., & Volkan, K. (1990). Preventing teenage pregnancy with social and cognitive skills. Manuscript submitted for publication.
- Center for Disease Control. (1992). Morbidity and Mortality Weekly Report (DHHS Publication No. CDC 92-8027). Washington, D.C: U.S. Government Printing Office.
- Davis, R. A. (1989). Teen pregnancy: A theoretical analysis of a social problem. Adolescence, 24, 19-28.
- Eisen, M., Zellman, G. L., & Mc Alister, A. L. (1990). Evaluating the impact of a theory-based sexuality and contraceptive education program. Family Planning Perspectives, 22, 261-271.
- Erickson, H. C., Tomlin, E. M., & Swain, M. P. (1983). Modeling and role-modeling: A paradigm for nursing. New Jersey: Prentice-Hall.
- Hofferth, S. L., Kahn, J. R., & Baldwin, W. (1987). Premarital sexual activity among U.S. teenage women over the past three decades. Family Planning Perspectives, 19, 46-53.
- Hofmann, A. D., & Greydanus, D. E. (1989). Adolescent medicine (2nd ed.). San Mateo, CA: Appleton & Lange.

- Inhelder, B., & Piaget, J. (1958). The growth of logical thinking: From childhood to adolescence. Paris: Basic Books.
- Kirby, D. (1990). Sexuality questions and scales for adolescents. Santa Cruz, CA: ETR Associates.
- Kirby, D., Barth, R. P., Leland, N., & Fetro J. V. (1991). Reducing the risk: Impact of a new curriculum on sexual risk-taking. Family Planning Perspectives, 23, 253-262.
- Makinson, C. (1985). Health consequences of teenage fertility. Family Planning Perspectives, 17, 132-139.
- Marsiglio, W., & Mott, F. (1986). The impact of sex education on sexual activity, contraceptive use and premarital pregnancy among American teenagers. Family Planning Perspectives, 18, 151-162.
- Motayar, N. (1992, Sept.). Peer Education Workshop Goals and Objectives. (Available from: Naz Motayar, San Jose State University, One Washington Square, San Jose, CA 95192-0037).
- Paul, E. L., & White, K. M. (1990). The development of intimate relationships in late adolescents. Adolescence, 25, 375-400.
- Piaget, J. (1971). Biology and knowledge. Chicago: University of Chicago.
- Piaget, J. (1973). The child and reality. New York: Grossman.

- Planned Parenthood Federation of America (1987). "American teens speak:" Report on a survey. North Carolina Medical Journal, 48, 267-270.
- Riessman, C. K., Whalen, M. H., Frost, R. O., & Morganthau, J. E. (1991). Romance and help-seeking among college women: "It hurts so much to care." Women and Health, 17, 21-27.
- Rogel, J. J., & Zuehlke, M. E. (1982). Pregnancy in adolescence: Needs, problems, and management. New York: Van Nostrand Reinhold.
- Romig, C. A., & Bakken, L. (1990). Teens at risk for pregnancy: The role of ego development and family processes. Journal of Adolescence, 13, 195-199.
- Singh, S. (1986). Adolescent pregnancy in the U.S.: An interstate analysis. Family Planning Perspectives, 18, 210-220.
- Trussell, J. (1988). Teen pregnancy in the U.S. Family Planning Perspectives, 20, 262-272.
- Winter, L., & Breckenmaker, L. C. (1991). Tailoring family planning services to the special needs of adolescents. Family Planning Perspectives, 23, 24-30.
- Zabin, L. S. (1990). Adolescent pregnancy: The clinician's role in intervention. Journal of General Internal Medicine, 5, 81-88.

Zelnik, M., & Kim, Y. (1982). Sex education and its association with teenage sexual activity, pregnancy, and contraceptive use. Family Planning Perspectives, 16, 117-126.

Appendix A
Peer Education Curriculum Outline

Peer Education Curriculum Outline

Introduction

The Peer Education Program facilitators were introduced. A brief overview of the program's goal and activities were presented.

Icebreakers

The Name Game was used as an icebreaker. Participants had an opportunity to discuss their sexual terminology. This icebreaker also assisted participants to identify individual styles in discussing sexual terminology.

HIV/STD Overview

A brief introduction of STD's, HIV spectrum, the HIV antibody test, risk behaviors associated to HIV infections and prevention strategies were presented. Participants had the opportunity to clarify any misconceptions.

Risk Spectrum

Upon completion of this exercise, participants were encouraged to ask questions on various sexual behaviors and activities and the risks associated with them.

The Presentation

A skit was used to introduce participants to various contraceptive techniques. After the skit, participants were encouraged to ask questions.

Condom Game

Three volunteers were blind-folded, and condoms were distributed. Volunteers were asked to put the condoms on bananas. The first volunteer who put the condom on correctly was awarded a prize. The audience was then asked to comment on the correct use of condoms and basic knowledge on purchasing and choosing the right condom for different sexual activities. The facilitators demonstrated the correct use of putting on and taking off a condom and introduced the basic concepts of condom use.

Video

A five minute comedy video covered the consequences of unsafe sexual interactions. The participants were encouraged to evaluate their own sexual practices.

Conclusion

Participants were provided with information and resources on campus and in the community.

Open Discussion

Peer Educators answered questions on various topics on a one-to-one basis for those interested.

Appendix B
Peer Educator Certification

Peer Educator Certification

Course Description

This advanced undergraduate seminar is designed to provide students with the training necessary to apply the theory and skills of peer education to health promotion activities on the college campus. Specific topics include community organization, public speaking, HIV infection/AIDS, self-esteem, sexuality, and stress management.

Objectives

Upon completion of this course, health promotion through peer education, participants will be able to:

1. demonstrate an understanding of the peer education theory;
2. research and identify health concerns of San Jose State University students;
3. plan, implement, and evaluate peer education programs pertaining to HIV infection/AIDS, self-esteem, sexuality, and/or stress management;
4. identify obstacles in providing health education activities.

Appendix C

Permission to Use Knowledge Questionnaire

A campus of The California State University

School of Applied Arts and Sciences • Department of Nursing • Graduate Program
One Washington Square • San Jose, California 95192-0057 • 408/924-3134

18 March 1992

Fiona M. Dschida
H-26 Koshland Way
Santa Cruz, CA 95064
(408)458-4109

Doug Kirby, Ph.D.
Director of Research
ETR Associates
P.O. Box 1830
Santa Cruz, CA 95061-1830

Dear Dr. Kirby:

The purpose of this letter is to ask for your permission to use the ETR Knowledge Test which is included in your publication, Sexuality questions and scales for adolescents, 1990.

I am a graduate student earning a master's of science degree in nursing education. Enclosed is a summary of my research purpose and design. If you have any questions, please do not hesitate to contact me at the above address or phone number.

Please sign your name at the bottom of this letter to indicate that you give me permission to use the ETR Knowledge Test.

Thank you for your time.

Sincerely,

Fiona M. Dschida

Fiona M. Dschida

Permission to use the ETR Knowledge Test

Douglas Kirby

Doug Kirby, Ph.D.
Director of Research

*For
Thanks
as King*

Appendix D

Consent of Peer Education Workshop Director

Student Health Service • One Washington Square • San Jose, California 95192-0037 • 408/924-6120
Accredited by Accreditation Association for Ambulatory Health Care

March 30, 1992

To: Human Subjects Committee

From: Mahnaz Motayar, MPH
Director, Peer Education Program

This is to inform you that the Peer Education Program is willing to be a part of the research study to be conducted by Ms. Fiano Dschida. The survey instrument will be distributed at various peer education workshops.

The results of this study will be beneficial in evaluating the effectiveness of these programs and will greatly assist us with improving the quality of our programs.

Please feel free to contact me at 924-6136 if I can provide you with further information.

Appendix E
Consent Form

A campus of The California State University

School of Applied Arts and Sciences • Department of Nursing • Graduate Program
One Washington Square • San Jose, California 95192-0057 • 408/924-3134

AGREEMENT TO PARTICIPATE IN RESEARCH
SAN JOSE STATE UNIVERSITY

RESPONSIBLE INVESTIGATOR: Fiona M. Dschida

TITLE OF PROTOCOL: Family Planning Knowledge: Impact of a Peer Education Workshop

I have been asked to participate in a research study that is investigating the impact of a peer education workshop on knowledge of family planning. The results of this study should help health educators to gain a fuller understanding of how peer education impacts family planning knowledge.

I understand that:

- 1) I will be asked to complete two identical 20-item questionnaires. The questionnaires will be handed out before and after the peer education workshop. It will take me about ten minutes to complete each questionnaire. Naz Motayar will collect all the questionnaires upon completion.
- 2) there are no anticipated risks to me in this study.
- 3) this questionnaire will not affect my standing at San Jose State University.
- 4) there are no discernible benefits to me, however, the results of this study may benefit future peer education workshop students.
- 5) the results from this study may be published, but any information from this study that can be identified with me will remain confidential and will be disclosed only with my permission.
- 6) any questions about my participation in this study will be answered by Fiona M. Dschida, (408) 458-4109. Complaints about the procedures may be presented to Dr. Mary Reeve, Department of Nursing, (408) 924-3165. For questions or complaints about research participants' rights contact Serena Stanford, Ph.D., Associate Academic Vice President for Graduate Studies and Research, (408) 924-2480.
- 7) my consent is given voluntarily with no coercion. I may refuse to participate, and I may terminate my participation in the study at any time.
- 8) I have received a copy of this consent form.

MY SIGNATURE INDICATES THAT I HAVE READ THE INFORMATION GIVEN ABOVE AND THAT I HAVE DECIDED TO PARTICIPATE.

Date _____

Participant's signature Investigator's signature

Appendix F
Knowledge Questionnaire

Knowledge Questionnaire

Sex: Male ____ Female ____

Age: ____

For each statement below, mark an (x) beside:

T if you know the statement is TRUE,

F if you know it is FALSE, or

DK if you DON'T KNOW or aren't sure whether the statement is true or false.

1. ____ T A woman cannot get pregnant the first time she
____ F has sex.
____ DK
2. ____ T Couples who use withdrawal (pulling the penis
____ F out before the guy comes) do not have to worry
____ DK about pregnancy.
3. ____ T The birth control pill is as effective as
____ F abstinence (not having sex) in preventing
____ DK pregnancy.
4. ____ T Latex condoms are better than animal-skin
____ F condoms for preventing sexually transmitted
____ DK diseases including AIDS.
5. ____ T The best way to use a condom (rubber) is to
____ F leave some space at the tip for the sperm.
____ DK
6. ____ T Men who have sex many times without using birth
____ F control will probably get a woman pregnant.
____ DK
7. ____ T The correct way to use a contraceptive sponge
____ F is to put it in the vagina no more than 24
____ DK hours before having sex.
8. ____ T To use a condom (rubber) correctly, a person
____ F must hold it on the penis while pulling out of
____ DK the vagina.
9. ____ T The contraceptive sponge will not work if you
____ F have sex more than once.
____ DK
10. ____ T A woman can prevent pregnancy by douching
____ F (washing out the vagina) immediately after
____ DK having sex.

11. ___ T Using a condom (rubber) whenever you have sex
 ___ F with someone with an STD (sexually transmitted
 ___ DK disease) will probably protect you from getting
 the disease.
12. ___ T It is legal for teenagers to buy contraceptive
 ___ F foam, cream, jelly, sponges, or condoms at a
 ___ DK drug store without a prescription.
13. ___ T A woman can get pregnant any time during the
 ___ F month.
 ___ DK
14. ___ T Teenagers can get birth control pills from
 ___ F family planning clinics and doctors without
 ___ DK parent's knowledge.
15. ___ T Contraceptive foam, jelly, or cream can be put
 ___ F in the vagina many hours before you have sex.
 ___ DK
16. ___ T Using condoms (rubbers) is the most effective
 ___ F way of all methods to avoid pregnancy and STDs.
 ___ DK
17. ___ T If a woman forgets to take her birth control
 ___ F pill for three consecutive days she is still
 ___ DK protected from getting pregnant.
18. ___ T Contraceptive foam, jelly, cream and sponges
 ___ F provide some protection against some STDs.
 ___ DK
19. ___ T A woman is protected from becoming pregnant as
 ___ F soon as she starts taking the pill.
 ___ DK
20. ___ T The condom (rubber) is more effective than the
 ___ F Contraceptive sponge at preventing STDs.
 ___ DK

Appendix G
Knowledge Questionnaire Instruction Sheet

Knowledge Questionnaire Instruction Sheet

1. Please fill in the spaces for your age and your sex. Do not write your name on the questionnaire.
2. Please answer the questions by marking an "X" next to one of the choices of true, false, or do not know.
3. The questionnaires will be collected after everyone has completed them or after ten minutes have elapsed.