ASSESSMENT OF THE KNOWLEDGE AFTER A TEACHING PROGRAM PERTAINING TO HUMAN SEXUALITY OF A SELECT GROUP OF ADOLESCENTS

A THESIS

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TABLE OF CONTENTS

CHAPTER

LIST OF TABLES

Table

CHAPTER 1

INTRODUCTION

Adolescents are deeply interested in human sexuality and have a desire for greater knowledge of their own sexual selves. In spite of an ultra-modern technological society, there appears to be a high level of ignorance about human sexuality among adolescents who are sexually active. Generally, sexually active young people seem to be less knowledgeable about human sexuality than their inexperienced peers. Myths and fallacies usually are acquired from their equally-ignorant friends.

Adolescents are having sexual relations earlier and more frequently today than in previous generations, and it appears that the earlier an adolescent experiences sex the less likely he/she is to know the facts of human reproduction, contraceptives, and venereal diseases. While youthful ignorance is characterized by higher rates of sexual activity, awareness of human sexuality tends to be associated with a more responsible approach to sexual behavior.

Sound education about human sexuality is basic if adolescents are to understand human development and are to cope with the stresses of adolescence. The situation today is characterized by widespread enthusiasm for initiating

sex education programs. The hoped for accomplishment of this study was for 13 and 14 year old students to be knowledgeable in human sexuality, which would be made possible through a planned sex education program in the intermediate public schools.

Statement of Problem

The problem of this study was to investigate the question: Will the adolescent student's knowledge of human sexuality increase as a result of a sex education program?

Statement of Purpose

The purposes of this study were: (1) to provide sex education to adolescents, and (2) to determine if the adolescents' sex knowledge would be increased as a result of this program.

Background and Significance

Knowledge of human sexuality has developed within the present decades, and numerous scientific studies have been conducted to support and elaborate on this sensitive topic (Johnson & Belzer, 1973). Significant schools of thought in the realm of human sexuality are the traditional and the modern. The traditional school advocates, "let the child learn it on his own"; "we don't talk about those things"; "wait until he's a little older"; or "get your brother or

your sister to explain it to you" (Gordon & Dickman, 1977). Afraid to face reality and explain human sexuality to their children, parents simply succumb to the attitude of "letting nature take its course" and generally it does. This is the proper breeding ground to foster myths and fallacies about human sexuality. In contrast, the modern school confronts the traditional one by revealing frank, informative, and practical aspects of venereal diseases, contraceptives, and human reproduction, thereby increasing the adolescents' awareness to be sexually responsible human beings. Potter and Smith (1976) studied 100 unwed mothers ranging from 14 to 19 years of age to determine their perception of the quality and quantity of sex education they had received from their parents, friends, school, books, and church. They found that there was a definite lack of information about sexual functioning on the part of the unwed mothers, but a desire to learn more was exhibited also. They postulated that sexual ignorance was partially responsible for the pregnancies of the unwed teenagers. Reichelt and Werley (1975) conducted a 9-month study on volunteer teenagers, 13 to 19 years, who attended rap sessions required by the Planned Parenthood League prior to obtaining medical family planning services. The fact that young women and men sought out and attended such rap sessions was indicative of youths'

interest in being well-informed about an aspect of their lives which affects themselves and society.

The sex-drive generally is accepted to be a strong drive which affects the adolescents' behavior. Awareness of the inner being that arouses these passions and deep-rooted feelings is at times very difficult to suppress. Maddock (1973) reexamined the meaning which sexual expression has within the total context of the adolescent experience. He concluded that due to biologic foundations and sociological patterning sexual expression in the adolescents is essential; however, the adolescents must temper their own needs for intimacy with a healthy respect for the vulnerability of others with whom they share identity. Knowledge and insight which permit access to the best information regarding the consequences of sexual behavior should be provided. Adolescents enter into this stage of life yearning for factual knowledge that will enlighten them in their quest for answers concerning their own sexuality.

Only recently have educators responded to the outcry of numerous parents, clergymen, and society in general to arrive at the development of sex education programs in schools to prepare adolescents to cope with the responsibilities of sexual maturity. Although there is still a lack of qualified teachers to instruct either teachers or pupils and uncertainty as to what should or should not be

taught, a gradual improvement in the quality of sex education is foreseen (Johnson & Belzer, 1973).

Hypothesis

The hypothesis tested in this study was: There is a positive relationship between a sex education program for 13 and 14 year olds in public schools and acquisition of sex knolwedge demonstrated by adolescents located in those schools.

Definition of Terms

For the purpose of this study, the following terms were defined:

Adolescence: physiological changes occurring in the adolescents resulting in full genital and reproductive maturity.

Adolescents: 13 and 14 year old students in the intermediate public schools.

Human sexuality: behavior in which sexual functioning is an integral part of everyday life.

Sex education: provision of information about topics dealing with sexual functions.

Sex education program: a 4-week course on basic facts about human reproduction, contraceptives, venereal diseases, and myths and fallacies consisting of one-hour weekly sessions during health classes.

Limitations

The following limitations were identified as being inherent in the proposed study:

1. Parental consent for participation in the study limited the number of participants selected.
2. The findings applied solely to 13 and 14 year old adolescents in the intermediate public schools in the city.
3. There was no control over absences or withdrawals from the study.

Delimitations

For the purpose of this study the following delimitations applied:

1. Only 13 and 14 year old public school students were included in the sample.
2. Only those with signed parental consent participated (Appendix A).
3. Only one instructor was utilized to present the 4-week sex education program (Appendix B).

Assumptions

The following assumptions in conducting this study were made:

1. Selected topics were of high interest to participants.

2. Topics included in the sex education program were what the students need to know about human sexuality.

Summary

This chapter has presented an introduction to the study under investigation. It has presented the statement of the problem, the purposes of the study, the background and significance, the hypothesis examining the relationship between sex education programs and acquisition of knowledge, its definition of terms, limitations and delimitations of the study, and the assumptions underlying the research.

A review of selected literature available on the research question is included in Chapter 2. Chapter 3 states how the data were collected and exactly how the instrument was used. Chapter 4 presents an analysis of data, the results of the study, and an interpretation of the findings. Chapter 5 includes a summary of the entire study, conclusions and implications derived from the findings, and recommendations for future investigations.

CHAPTER 2

REVIEW OF LITERATURE

Many factors have contributed to the inclusion of sex education in elementary and secondary schools. Parents, health officials, and the community continue to be alarmed by the increasing rate of venereal disease, pregnancy, and irresponsible sex among adolescents and are turning to the schools in an attempt to quell this tide (Gordon, 1974). The educational system is regarded as the major source of information for sex education due to the unique role of the school as the single agent to which almost everyone in society has equal access (Rogers, 1974). Additionally, Rogers noted that since it is easier to change the habits of institutions than those of individuals, a viable goal is for schools to provide sex education rather than parents. Many parents who are not competent factually and/or emotionally to teach their children about human sexuality have delegated this responsibility to the schools (Haims, 1973). The establishment of numerous sex education programs in the schools can be attributed also to SIECUS, the Sex Information and Education Council of the United States, whose major purpose is to establish sexuality as a health entity (Kirkendall, 1974).

This chapter is divided into sections which will discuss several aspects of sex education in the schools. The literature reviewed will include findings of research studies and opinions related to: (a) accomplishments of sex education in the elementary and secondary schools, (b) the content which should be included in sex education, (c) who should teach sex education, (d) when it should be taught, and (e) how it can be measured and evaluated. A brief summary concludes the chapter.

Accomplishments of Sex Education in the Schools

Sex education, an existing need in our current society, can be used to develop in adolescents the personal and social competence that leads to individual fulfillment and social progress (Haims, 1973). Due to the belief that adolescents' major source of information is their peer group, sex education in the schools has been a method of conveying correct information to "as large a part of the adolescent population as possible" (Thornburg, 1972). For example, Lasseigne (1975) studied 240 adolescents to ascertain whether peer influence or parental influence dominated the adolescents. The results indicated the adolescents studied were influenced by the opinions of their peers to a significantly greater degree than they were by those of

their parents in matters related to moral courage, responsibility, loyalty, honesty, and friendliness.

Finkel and Finkel (1975) studied 421 adolescents to delineate the impact of a sex education class in school on knowledge and behavior on the adolescents. The responses to the questions on sex knowledge were analyzed according to whether the participants had or had not yet taken the mandatory hygiene course that included sex education. Analysis of the data demonstrated the conclusion that the sex education course taken by one group of adolescents resulted in a significant difference between the two groups. The group which had taken the course scored higher than the group who had not yet taken the sex education course. According to Hurlock (1973) adolescents who acquire their information from books or sex education courses in school or church have information superior in quality and quantity to that of their peers and they usually are more satisfied with it. The endorsement of sex education in the schools by prestigious organizations such as the Interfaith Commission on Marriage and Family Life, consisting of the Synagogue Council of America, the United States Catholic Conference, and the National Council of Churches, the National Congress of Parents and Teachers; the American Medical Association; the YMCA and WYCA; and the United States Department of Health, Education and Welfare indicates that the greater the

amount of accurate sex information, the less the anxiety experienced by numerous adolescents (McCary, 1978).

One of the goals of a sex education program is often to reduce the rate of venereal disease and premarital pregnancy; however, factors contributing to these problems are so complex that it is not fair to rely on sex education alone to alleviate them (Ehrman, 1975). Niemiec and Chen (1978) reported a study of 73 male and 68 female adolescents who were seeking care at a venereal disease clinic. The authors postulated that a study focusing on why adolescents sought care from a public venereal disease clinic would add to the understanding and control of venereal disease among adolescents. The results demonstrated that friends and mass media were the most important forces for all adolescents in deciding to seek health care. Additionally, the study revealed that the majority of adolescents seeking care were newly infected cases of venereal disease. Although information about venereal disease is provided through schools and venereal disease clinics, there are countless adolescents who do not possess this knowledge. The authors recommended a personal approach from friends, relatives, teachers, and health personnel with information about hours and places to go for treatment of venereal disease as an effective means to motivate adolescents to seek care.

Whereas numerous schools provide sex education, many still do not. Weinstock (1970) described four causal attitudes: (a) the religious beliefs of parents and patrons of the schools, (b) the belief by some teachers that sex education is difficult to teach properly, (c) the conservative viewpoint that schools already assumed too many obligations, and (d) the suspicion that school administrators are intimidated by a vociferous minority opposing formal sex education. Weinstock (1970) cited a study which surveyed parents, students, and teachers in more than 60 secondary schools to ascertain whether the school should assist the students in obtaining sound sex education. The results indicated that 80% of the parents, students, and teachers surveyed favored sex instruction in the school. An additional finding of the study indicated that only 10% of teachers and 20% of the students of these schools stated that what was being provided as sex education was adequate. Hill (1975) studied the backgrounds of 1,148 college students to determine if they had received sex education during their junior and senior high school years and to note their attitudes and philosophies pertaining to sex education. The percentage of those students reporting not having received sex education during their junior high years were males, 85%, and females, 81.6%, while slightly over 73% males and 68.2% females had not been taught sex education in any of their

high school years. The conclusions of the study were as follows: (a) adolescents wanted sex education and felt it would help them in their problems of human sexuality, (b) adolescents did not feel at ease in discussing sex with their parents and did not get the much-needed sex instruction at home, (c) promiscuity was not considered by adolescents to result from sex education, (d) adolescents received most of their information pertaining to sex from friends and peers, and (e) the place for sex education was considered to be in the home first, school second, and church third; however, if it was not taught at home, it should be taught in the school. Even though schools cannot handle the job of sex education without the help of parents and community agencies, they still can make a real and an immediate contribution to educating adolescents for responsible sexual behavior (Gordon, 1974).

Content of Sex Education in the Schools

According to the Sex Information and Education Council of the United States, SIECUS, a comprehensive sex education program should include the following content: (a) biological, social, and health aspects, (b) interpersonal associations, (c) personal adjustments and attitudes, and (d) the establishment of values (Kirkendall, 1974). The objectives of a sex education program at the intermediate school level as listed by Ehrman (1975) are:

1. To stress a wholesome attitude toward sex.
2. To give students an understanding of the vocabulary used in discussing the natural body processes.
3. To help students understand the changes that occur and will be occurring in their bodies.
4. To develop a positive attitude toward sex, thereby ability to speak freely without embarrassment.
5. To provide knowledge about the scientific facts of human sexuality.
6. To help students understand growth and how it is related to physiology and inheritance.
7. To develop respect for other's social customs.
8. To increase family loyalties.

Inlow (1970) pointed out learning should be the product of well-conceived content. There are two current strategies regarding the content of a sex education program: (a) the plumbing approach--the egg, the sperm, the tubes, and (b) the sex-as-social-etiquette approach. It often is necessary to include both of these two topics in a sex education program while the proper subject matter of sex is sex as pleasure and pain, sex as joy and fear, sex as warmth and hurt. Gagnon and Simon (1969) considered these topics as the basic content of human interaction. In other words, without the content relating to experience, sex education really will not make any significant difference

(Fraser, 1972). Vincent (1976) postulated that objectives for a sex education program have to be based on needs assessment information and that adolescent sexual activity patterns dictate content areas. Additionally, the author stipulated that the depth or superficiality of a course in sex education depends on the orientation of the entire community as well as students, faculty, and school district.

To objectively measure the specific aspects of sex that most interested adolescents, Rubenstein, Watson, Drolette, and Rubenstein (1976) conducted a study of 130 adolescents. The results indicated that adolescents were interested in sexual intercourse with its interpersonal consequences of venereal disease, pregnancy and abortion and content concerning whether they would enjoy, fear, or feel guilty about sex, whether it would be regulated by birth control, and whether it would be associated with love, prostitution, or sex offenses. The authors recommended these concerns be presented as main issues and discussed in a scientific and straightforward manner in any book or curriculum planned to teach adolescents about sex.

Schools have a responsibility to provide the best type of sex education programs to meet the needs of all adolescents. As a base for curriculum planning Maxeiner, O'Rourke, and Stone (1976) believe teachers should possess a thorough knowledge of the economic, social, and cultural conditions

that exist in the area in which the sex education program is to be conducted. The authors based their recommendation on the results obtained when they evaluated the knowledge, behavior, and attitudes towards sex education of preadolescents representing 27 school districts in a large metropolitan school system.

James, James, and Walker (1977) conducted a 9-year longitudinal clinic study regarding the problems of sexual growth of adolescent, underprivileged, unwed Black females. The information obtained from the study indicated a large number of these adolescent girls complained about the lack of education regarding contraception, sexuality, personal hygiene, and human reproduction. These were areas that the authors postulated should be included in a sex education program.

Much of the controversy over curriculum in sex education focused on choice of methodology for the subject of premarital intercourse. Adolescents' questions concerning this subject should be handled with discretion since the adolescents' questions may imply an intention to use the information in actual experience. The parent and teacher must believe that the truth will lead to socially and personally sound decisions (Haims, 1973). Another area of concern in curriculum planning is whether to include the subject of birth control. Haims (1973) noted that

information about contraception also should be presented with discretion. Since adolescents are naturally curious to see what contraceptive devices look like, the use of pictures, models, charts or actual contraceptive devices to satisfy their normal curiosity should be utilized.

A study cited by Rogers (1974) contradicted the belief held by some that sex education courses can cause adolescent sexual experimentation. The subjects consisted of 192 males and 353 females. Exposure to sex education subject matter was reported by 70% of the adolescents sampled. Premarital petting experience was reported by 79%; and premarital coital experience was reported by 32%. This study inferred that sex education per se was not a significant factor influencing premarital petting or coital behavior. The author, realizing the many implications for educators and scientists of human sexuality, recommended that more effects of sex education on sexual behavior be explored.

Reichelt (1977) advocated use of input of those to be educated. Adolescents are aware of their own needs in the area of sex. Without adolescents' input, sex education programs often teach the physiology of human sexuality without relating it to psychosocial aspects.

The content of a sex education program can not be discussed without mentioning instructional materials

utilized in sex education. Good sex education is quite possible without the use of any commercially prepared instructional materials; however, if sex education is thought of as a process and not as a body of subject matter to be learned, then instructional materials must feed into that process (Burleson, 1976). The following questions are general guidelines for the selection and evaluation of instructional materials as outlined by Burleson:

1. Are instructional objectives stated prior to selection of instructional materials?
2. Are instructional materials compatible with the physical, intellectual and social maturity of those to be taught?
3. Do instructional materials present accurate, complete and current information?
4. Are instructional materials biased toward any single point of view?
5. Do instructional materials consider equality of the sexes and avoid rigid sex stereotyping of character or situations?
6. Do instructional materials have supportive resources such as teacher's manual or discussion guide?
7. Does the selection process involve the input of adolescents and parents?

Who Should Teach Sex Education

The question inevitably arises as to who should teach sex education and there are varied answers. Gordon (1974) declared that the responsibility for sex education must be shared by parents and community social services; however, parents must be educated about sexuality so that they can accept much of the responsibility for their children's sex education. Fraser (1972) suggested that sex education organizers, whom he considered experts, tape those lectures and/or discussions that are motivating and informative to be viewed by adolescents, parents, church groups, settlement house groups, or others wishing to tune in on a series of closed-network televised programs. Jordheim (1976) found that peer teaching in venereal disease education was more effective than traditional classroom instruction in imparting knowledge, changing attitudes, and influencing adolescent behavior. So successful was peer teaching in the venereal disease education program that the American Public Health Association, in conjunction with other public health agencies, attributed the major reduction in the city's adolescent venereal disease rate to its use. Juhasz (1970) concurred that the classroom teacher is the most important variable influencing the effectiveness of instruction in any course in the area of human sexuality. Shearin (1975) stipulated that sex education be offered by parents,

physicians, or teachers who have participated in the educational process.

Schulz and Williams (1969) reported an almost universal agreement that the teacher is the key element in a good sex education program. They further affirmed that regardless of how carefully planned the program, how stable the philosophy, how effective the community backing, the ill-prepared, fearful, or embarrassed teacher can defeat the entire effort. The teacher frequently has to cope with sexual incidents in schools as they become increasingly common. Pietrofesa and Pietrofesa (1976) analyzed a great number of sexual incidents reported by teachers. The following are only a few with which teachers were confronted: (a) sex education or information, (b) masturbation, (c) homosexual concerns, (d) premarital intercourse, (e) sex-role identification, (f) genital play and exploration, and (g) pregnancy. Knowledgeable and professionally trained teachers who also are comfortable with their own sexuality are needed desperately to teach sex education.

The education of any teacher is not complete without sex education yet the traditional curriculum for teachers has been least adequate in the area of sex education. Even today few, if any, colleges have specific courses to prepare sex education teachers (Broderick & Bernard, 1969). According to Sheppard (1973) current offerings in human sexuality

as reported from 213 colleges in 41 states that responded were described by the following: (a) 41.8% offered one or more courses devoted mainly to the study of human sexuality, (b) 11.7% provided no opportunities to study human sexuality, (c) 46.5% of the colleges included the study of human sexuality as a part of other courses or programs. Additionally, the author noted that the human sexuality courses had been added only during the past 5 years, that class sizes were quite large, and that courses were provided by numerous different departments with little interdisciplinary cooperation. The report suggested that not even a small minority of college students, many the future teachers of adolescents, were studying in any depth the subject of human sexuality. Authoritative organizations such as the College Subcommittee of the Sex Education Task Force of the New York State Coalition for Family Planning and sex education experts like Evalyn Gendel have specified the types of activities, programs, and services to be included in a comprehensive human sexuality program. Teachers nevertheless are being prepared inadequately and are limited in opportunities for obtaining the needed preparation (Vincent, 1976). The College Subcommittee of the Sex Education Task Force of the New York State Coalition for Family Planning (1974) provided colleges with specific areas to be included in a human sexuality program for teachers and

examples of how these could be presented to enhance the quality of human existence. The subcommittee recommended academic coursework which included anatomy and physiology, sociology, literature, ethics, and psychology. A course in human sexuality should encompass both a body of factual knowledge from the various fields mentioned and an opportunity for growth in self-understanding through attitudinal and value interactions with peers and faculty in the small-group process. Counseling services would cover academic and personal difficulties and could include counseling in sex, contraceptives, dysfunction, and pregnancy. Health and medical services for the student teachers would encompass physiological or medical issues such as pregnancy, abortion, venereal diseases, and genetics. Student personnel services could include lecture-discussions on sexuality during orientation especially for incoming freshmen men and women to set the stage for positive programs in sexuality. To bridge the gap of providing direction and training for prospective teachers of human sexuality many universities and colleges have provided workshops and inservice sessions. Juhasz (1970) designed a pilot project to determine the characteristics and attitudes which administrators and researchers in the field of human sexuality considered essential for the effective teacher of sex education. The characteristics tabulated in order of frequency were:

(a) acceptance of sexuality, (b) respect for students, (c) ability to communicate, (d) high degree of empathy, (e) good teaching techniques, and (f) knowledge of subject. The teacher's attitude was found to be the most important variable influencing the effectiveness of instruction in any course (Juhasz, 1970). Broderick and Bernard (1969) revealed that the success of a teacher is not based on sex, marital status, or parenthood, but rather on the individual's understanding of human interrelationships, one's life experience, and one's sensitivity. They cited the following characteristics of the successful sex education teacher: (a) sympathetic understanding of children, (b) a positive attitude toward sex, (c) good common sense and sense of humor, and (e) knowledge of the scientific background materials.

When Sex Education Should Be Taught

The question of when to teach sex education is extremely sensitive. Information provided too soon may be meaningless or worse, anxiety-provoking. Given too late, it leads adolescents to think that it is a hypocritical gesture. When adequate teaching or responsive and caring adults are not available to information-seeking adolescents, it might be best to be slightly late. Any given topic will be too early to some and too late to others (Gagnon & Simon, 1969).

Gordon and Libby (1976) stressed beginning education for sexuality before the children start school. They affirmed the family is the major influence on children's sexual development and that it can provide the moral support which children need. They concluded parents can work with other more knowledgeable persons or groups in order to help children in their quest for health and values, which is a major part of sexuality. According to SIECUS's executive director, Dr. Mary S. Calderone (Fraser, 1972), sex education should be started at the kindergarten level in the schools. Montgomery (1976) agreed with sex education authorities' recommendation of starting sex education in the first year in a simple and limited fashion and expanded in elementary, intermediate, and high school grades to include birth control and venereal disease information. By starting early the children would be enlightened and see sexuality as a natural phenomenon, freed from the furtiveness, concealment, and half-knowledge that frequently surrounds the subject.

Holcomb (1970) surveyed 211 public school superintendents in a large state to ascertain, among other items, the grade level(s) in which sex education was taught. The results indicated sex education generally was confined to secondary schools in grades 7-12; however, there were a few districts where sex education was included in the

elementary school curriculum. In another instance, a school nurse was requested by a citizens' committee on health services to teach sex education to fifth-graders of the school district. The nurse received favorable responses from the students and the committee (Rosner, 1977). Very few professionals in medicine and psychiatry have voiced their disapproval of early sex education. Those who did remarked that sex education interfered with prepubertal period causing the preadolescents to focus prematurely on sex (Thornburg, 1975).

Finkel and Finkel (1975) studied 421 male high school adolescents and found 69% of the total sample were sexually experienced and that sexual activity had begun before the age of 13 years. They concluded sex education programs offered in high school came too late for these adolescents. They also recommended sex education be offered in the intermediate schools so more adolescents might obtain correct information about sexual intercourse and contraceptive use before, rather than after, they began having sexual relations. Although no program or policy decision can hope to prevent premarital coitus, such programs can at the very least educate adolescents about the risks involved in unprotected coitus and the methods available to prevent the risks. Poole (1976) pointed out that adolescents need to be taught facts early enough so they can decide between fact

and fiction and be able to apply the knowledge to their own decision-making. The need for establishment of meaningful sex education programs for age levels from kindergarten through grade school, high school, and college was presented by James, James, and Walker (1977) in their study concerning female adolescents' problems associated with sexual growth. Their study revealed adolescent females' premarital coital experience began at menarche with the average age of 12 years.

Measurement and Evaluation of Sex Education

The importance of evaluation cannot be overemphasized as there is probably no other single phase of the teaching-learning process that is more important. Conley (1973) defined evaluation as a process used in determining the value or worth of something; educational evaluation being the process used in determining the effectiveness of teaching and/or the value of a learning opportunity in assisting students to achieve educational goals. In addition, Conley asserted that the degree of teaching effectiveness and learning as measured by use of various tools and techniques available to teachers for gathering information before any attempt is made at constructing a test, the students' behavioral objectives must be clearly written and firmly fixed in both students' and teacher's minds.

The next task is to construct test items which adequately evaluate all areas included in the objectives. Selection of the items depends on the size of the class, length of testing period, method of correcting and scoring, cost, convenience, and student and teacher feedback. Many of these considerations are influenced by the way questions are written. Essay questions generally are more useful when a small group is tested for diagnostic purposes. Objective questions, especially multiple choice question, are most efficient in gathering levels of knowledge, facts, or behavior. These types of questions match best with choices that are not similar in category and kind, and are easy to process and interpret. According to Shaw (1977) an important aspect in constructing a question is to provide options which allow those who know the material to answer correctly and those who are less knowledgeable to be defeated by their own ignorance. An effective method for evaluating test items is to try out the questions experimentally before including them in a test. After the construction of the questions, clear instructions followed by an example of how a question should be answered would be helpful to the students.

Means (1977) introduced information on a videotape as an instrument for evaluation of teaching. He pointed out the videotape has been an integral part of health

instruction at the college level and considered one of the best learning opportunities by both students and faculty. The videotape allows the students to actually see the teaching techniques utilized and to strive for improvement in any deficient areas.

Kreuter (1977) pointed out that asking students about their reactions to a sex education program would add a variety of data for a comprehensive assessment of health education. The author also noted that ascertaining the worth of a health education program by judging whether or not a given number of students achieved a given behavior is very misleading. Such a strategy assumes that the teacher or educator has identified all of the important potential behavioral outcomes which could arise as a function of the learning experience, and that simply is not possible. A program can be judged as ineffective if some behavioral objectives are not met; however, other positive effects, which go unnoticed by the teacher or educator, may occur making the program worthwhile for the students and teachers. Every effort to gather information about the effects of school health education programs should be exerted by all teachers or educators.

Tests measure and evaluate students' behavioral change and also may measure and evaluate the quality of instruction. Tests created and administered by the teacher

indicate what one is truly valuing in students. Although the individual is unaware of these values they influence profoundly what the students will learn (Litwack, Sakata, & Wykle, 1972).

Summary

In this society with increasing rates of unwanted adolescent pregnancies and venereal disease, sex education programs have become a major consideration for numerous groups, parents, and public schools. The dilemma associated with sex education programs does not become apparent until the questions arise as to who will teach sex education, what will be included in the program, and when sex education will be taught. This study was designed to ascertain whether knowledge would be acquired after a presentation of a sex education program to a select group of adolescents in the intermediate school setting.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

Introduction

A two-group, before-after experimental study was conducted to assess the knowledge of human sexuality of a selected group of adolescents. Due to the use of only one instructor, the control and experimental groups were scheduled to meet in their respective groups at different hours for the testing. The questionnaire was answered by both groups prior to the first class and after the last class. The sex education program, presented to the experimental group only, was held during health classes for the next 4 weeks immediately following pretesting.

Setting

This study was conducted in a 1300 student intermediate public school located in the southernmost area of a Texas city which has a population of approximately 70,000. The school, located in the downtown area of this urban city, consisted of students from both the inner and the outer sections of the city.

Population

The intermediate school in which the study was conducted has the largest number of 13 and 14 year old students in the city. Selection of 100 adolescents, 13 and 14 years of age, from a population of approximately 1300 students in the intermediate public school was done by systematic random sampling. Every 10th student meeting the stated criteria was selected. The assignment of 50 students to the experimental group was accomplished by use of a table of random numbers assigning odd numbers to one group and even numbers to the other group. The Texas Woman's University Committee on the Protection for Human Rights approved the study. All student responses were coded so as to protect the anonymity of the individual participants.

Instruments

The instrument developed by the researcher was a knowledge test consisting of 20 multiple choice questions related to the topics under study. The questionnaire, which required approximately 20 minutes to complete, tested for knowledge in the following areas: (a) human reproduction, (b) contraceptives, (c) venereal diseases, and (d) myths and fallacies about human sexuality. This written questionnaire was utilized as both a pre and post-test. The content and word choice of the questionnaire

were based on the sex education program. The content of the program was based on literature and audiovisual material obtained from Planned Parenthood, as well as knowledge obtained through review of literature on adolescents, and discussion of the four areas of human sexuality under study with a group of 13 and 14 year old students.

The Delphi technique was used to determine face and content validity of the instrument. An assumption of the validity was justified by using the expertise of the following:

1. Clinical psychologist experienced in treating adolescents.
2. Associate school psychologist.
3. Three intermediate school counselors.
4. Planned Parenthood health educator.

Based on the statement of the problem, the selected age group, and knowledge of the instructional procedure, the panel of experts was asked to evaluate the questionnaire to determine if the content was within the students' comprehension, if the length of the instrument was appropriate for this age group, and if the topics selected were of high interest to the participants. The panel's suggestions were considered in revision of the questionnaire. Agreement from four out of six experts listed was necessary for inclusion of an item in the study. The instrument was

submitted to each panel member three times for changes in three different items regarding venereal disease and contraceptives.

Reliability of the instrument was measured by the odd-even method. Treece and Treece (1973) affirmed that a sample of 10 participants in the 13 and 14 year age group, 10%, of the intended population is sufficient for a pretest. Ten students within the same age group were selected from the intermediate public schools and were requested to respond to the questions of the instrument. The Pearson Product Moment correlation coefficient was utilized for obtaining reliability. The correlation coefficient obtained was .72.

The teaching approach used in the instructional phase of the study was a combination of lecture and discussion. Sample objects were demonstrated in the session on venereal diseases and pictorial flipcharts in the session on human reproduction. The chalkboard was used to stress familiarity with spelling and pronunciation of terms. Students were encouraged to ask questions or make comments during and following the session. The instructor sought to maintain students' interest in the program by: (a) expressing interest and concern for them, (b) including them in the discussion, and (c) avoiding embarrassing situations (Appendix C).

Collection of Data

After parental consent was obtained, both groups were given a brief explanation of the study. The groups were advised of the following: (a) duration of study, (b) administration of pre and posttests, and (c) location, time, and dates of four classes. The only exception was the control group which was informed they would not receive the sex education program until after the study was completed.

The pre and posttests were administered to both groups at different times. At each testing period the participants were instructed to do the following:

1. Answer the questions in approximately 20 minutes.
2. Give only 1 answer per question.
3. Answer the questions without discussion.
4. Answer the questions truthfully.

All participants completed the tests within the time allotted.

The teaching approach was presented to the experimental group for 1 hour a week for four consecutive weeks during a regularly scheduled class. At the end of the fourth week both groups were administered the posttest. As each participant completed the questionnaire, it was collected to eliminate discussion and the possibility of influencing changes of answers. All questionnaires were

tabulated and the scores coded. Only those students who attended all four classes were considered for the final tabulations. Due to attrition only 42 out of 56 students originally included in the experimental group attended all four classes.

Treatment of Data

Interval level data and one demographic datum were yielded by this instrument. Comparisons of mean scores between control and experimental groups and males and females were done. A higher mean was expected in the experimental group indicating that more knowledge was acquired after participating in the sex education program. The independent t test was used to analyze the data (Weinberg & Schumaker, 1974).

Summary

This chapter presented the procedure used to determine if a sex education program would increase a selected group of adolescents' knowledge of human sexuality. The chapter included the following: (a) setting, (b) population, (c) instruments, (d) collection of data, and (e) treatment of data.

CHAPTER 4

ANALYSIS OF DATA

Introduction

An experimental study was conducted to test for knowledge after presentation of a sex education program. The formulated hypothesis was: There is a positive relationship between a sex education program for 13 and 14 year old adolescents in the public schools and the acquisition of sex knowledge demonstrated by adolescents attending those schools.

The scores attained by the adolescents in the experimental group were examined with respect to sex and age. The teaching approach was presented to the experimental group for 4 weeks during a regularly scheduled class for 1 hour each week. Pre and posttests were administered to both groups.

Description of the Sample

The target population consisted of 13 and 14 year old male and female adolescents attending an intermediate public school. The experimental group was 42 adolescents, 24 (57%) of whom were females and 17 (43%) males. The majority of this group, 33 (79%), were 13 years old and the remainder

were 14 years of age. Due to the disparity in the number of 13 and 14 year old adolescents in the experimental group no comparison for acquisition of knowledge between the two ages was made. The control group consisted of 41 males and females: 61% (25) were males and 39% (16) were females; 61% (25) were 13 years old and the remainder were 14 years of age.

To allow for attrition 200 subjects originally were selected by systematic random sampling. Attrition was attributed to students' disinterest in the program, students' not returning the signed parental consent forms, and students' absences from the sessions. The experimental group began its first weekly session with 56 students while the control group had 49 at the first testing period.

The sex education program was offered to the control group after completion of the study. Several students in this group participated because they would receive the sex education classes.

Due to unforeseen circumstances the sex education program was presented to the experimental group during a regularly scheduled class instead of during health classes as planned. One period during the day was selected and parents, selected participants, and all teachers were notified of the change.

Presentation of the Findings

After review of the literature, a positive relationship between a sex education program and the acquisition of sex knowledge by 13 and 14 year old adolescents was anticipated. The relationship between a sex education program and the acquisition of knowledge was examined by use of a t test, $p \leq .05$. Table 1 provides a summary of the relationship between the knowledge demonstrated by adolescents in both experimental and control groups. The mean score of the experimental group was 10.61 with a standard deviation of 3.25. The control group's mean score was 6.56 with a standard deviation of 2.81. The test restuls, $t = 6.07$, $p \leq .05$, $df = 81$, statistically is significant indicating acquisition of knowledge by the experimental group after presentation of the sex education program.

Table 1

Means, Standard Deviations, and t Values of Respondents in Experimental and Control Groups

Group	Mean	SD	Significance		
			t	p	df
Experimental	10.61	3.25	6.07	≤.05	81
Control	6.56	2.81	6.07	≤.05	81

Note: SD = standard deviation; p = probability; and df = degrees of freedom.

The adolescents' knowledge of human reproduction, contraceptives, venereal disease, and beliefs in myths and fallacies of human sexuality was measured by administration of a written questionnaire. The same questionnaire was used for pre and posttesting of both the experimental and control groups. The questionnaire, consisting of 20 multiple choice items, was administered to each group of adolescents on separate occasions before and after the presentation of the sex education program. The coding consisted of assigning numbers to each student to preserve anonymity. The raw scores on the pretest for the experimental group ranged from 0-16 with a mean score of 6.6; raw scores for the control group ranged from 0-15 with a mean score of 6.3. Posttest scores of knowledge for the experimental group ranged from 3-18 with a mean score of 10.6, whereas the control group's scores ranged from 2-14 with a mean score of 6.5. A significant difference between pretest and posttest knowledge scores for the experimental group was demonstrated by $t = 5.85$, $p \leq .05$, $df = 82$ indicating that knowledge of the four areas under study was increased significantly as a result of the sex education program. The control group did not demonstrate a significant increase in knowledge from pretesting to posttesting (see Table 2).

Table 2

Difference of Means in Experimental and Control Groups

Group	Pretest Mean	Posttest Mean	Difference
Experimental	6.6	10.6	4.0
Control	6.3	6.5	0.2

These findings revealed that the experimental group had significantly more knowledge about human reproduction, contraceptives, venereal diseases, and myths and fallacies of human sexuality than did those adolescents who did not receive the sex education program. The statistical difference existing between the two groups resulted in failure to reject the formulated hypothesis.

A t test comparing the acquisition of knowledge of the males and females in the experimental group was conducted. The mean score for the males was 11.05 as compared to 10.29 for the females. The t test results, $t = -.0.74$, $p \leq .05$, $df = 40$, were found not to be statistically significant. See Table 3 for a summary of the scores of male and female respondents in the experimental group.

Discussion

The findings of this study indicated that the experimental teaching approach used was a significant factor

Table 3

Means, Standard Deviations, and t Values of Male and Female Respondents in Experimental Group

Group	Mean	SD	Significance		
			t	p	df
Males	11.05	3.78	-0.74	≤.05	40
Females	10.29	2.83	-0.74	≤.05	40

in increasing the subjects' knowledge of human sexuality. The experimental group which received the sex education program demonstrated a significantly greater acquisition of knowledge than those adolescents who did not receive the program. The experimental group evidenced a significantly greater acquisition of knowledge of human sexuality after receiving the sex education program even though both the experimental and control groups were shown to be homogeneous at the beginning of the study. No significant difference in acquisition of knowledge was demonstrated between the males and females in the experimental group at the .05 level of significance. These findings might be explained by the dissemination of the same information to all participants by an instructor who is a school nurse. Students, parents, and school personnel generally accept the school nurse as a health professional capable of disseminating accurate health-related information (Rosner, 1977). The

literature reviewed neglects the study of the status of school nurse as an agent of change, therefore further study is recommended to substantiate that a school nurse can influence a person's attitude and behavior regarding accurate information of human sexuality.

The results of this study indicate a positive relationship between knowledge and a sex education program existing at the .05 level of significance. From these results it can be concluded that a sex education program enhances 13 and 14 year old adolescents' acquisition of knowledge of human sexuality.

Summary

A significant difference in acquisition of knowledge was demonstrated by 13 and 14 year old adolescents when a sex education program was presented to the experimental group and withheld from the control group. The findings revealed that more knowledge was acquired by the experimental group indicating that sex knowledge can be enhanced by a sex education program.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

This chapter is divided into four major sections. The first section consists of a brief summary of the study. The second section presents the conclusions drawn from the findings. The third section identifies implications derived from the results of the study. The fourth section offers recommendations for future research.

Summary

The purposes of the study were: (1) to provide sex education to adolescents, and (2) to determine if the adolescents' sex knowledge would be increased as a result of this program. The relationship between these two variables was studied after the sex education program was provided to the experimental group. A sample of 83 male and female adolescents was included according to established criteria. The experimental group had 42 subjects whereas the control group had 41. A hypothesis was formulated which predicted a positive relationship between the sex education program and acquisition of knowledge by the adolescents. Analysis of the data allowed rejection of the null and retention of the alternate hypothesis.

Conclusions

The resulting relationship between a sex education program and acquisition of knowledge led to the conclusion that knowledge can be acquired by 13 and 14 year old adolescents as a result of a sex education program. No significant difference in the acquisition of knowledge was demonstrated by the males and females in the experimental group indicating that acquisition of knowledge of human sexuality is not limited to any one sex.

Implications

Several implications were derived from the findings of this study. The results of the study indicated acquisition of knowledge by the 13 and 14 year old adolescents, therefore the sex education program can be made available to the target population. Since the literature reflects teachers are ill-prepared to teach sex education, the study's educational program and instrument can be used by the teachers to evaluate knowledge of human sexuality. Inservice education for the school personnel can be provided by health professionals experienced in adolescent sexual development and behavior to help teachers provide sex education.

Recommendations

Sex education in the schools is often a neglected area; however, it is vitally important that adolescents receive

correct information regarding human sexuality. The following recommendations are made:

1. Replication of this study using a larger sample of adolescents to provide a more thorough examination of a sex education program related to acquisition of knowledge.
2. Replication of this study using adolescents in other age groups to provide a more thorough examiniation of a sex education program related to acquisition of knowledge.
3. A longitudinal study using adolescent subjects to determine the reliability and validity of sex education programs in the intermediate schools.
4. More communication between the school system and health care providers is needed to coordinate the dissemination of sex information in the schools. Health professionals such as school nurses can do this.
5. A comparative study of school nurses and teachers to determine the effect upon students' acquiring knowledge of human sexuality.

APPENDIX A

PARENTAL CONSENT

PARENTAL CONSENT

To the parent or guardian of _____

At present we have no school program on human sexuality in the intermediate schools. I would like to conduct a study to determine the level of comprehension our students have on this subject. I have randomly selected your child to participate in this sex education program which will take place at school during health classes. Participation will be voluntary and he/she may withdraw at any time. This program will last 4 weeks with hourly sessions each week on human reproduction, contraceptives, venereal diseases, and myths and fallacies about human sexuality. The classes will include the anatomy, physical and emotional changes of male and female; information about the common contraceptives such as the pill, foams, condom; the common venereal diseases, syphilis and gonorrhea, and their treatment; and common superstitions and misinformation about human reproduction, contraceptives, and venereal diseases. The results of this study will be utilized to determine the need for a sex education program in the intermediate schools. Please sign below and return this form if you

wish for you child to participate. If you have any questions concerning the program, please contact me at 546-4011.

Sincerely,

Maurilia (Molly) Teran, R.N.

_____

Signature of parent or guardian

CONSENTIMIENTO PATERNAL

A los padres del niño (a) _____

Por lo pronto no tenemos programa educacional sobre la sexualidad humana en nuestras escuelas intermedias. Quisiera llevar a cabo un estudio para determinar el nivel de entendimiento que tengan los estudiantes sobre esta materia. He seleccionado su niño (a) para que participe en este programa de educación sexual que se llevará a cabo en la escuela durante las clases de salud. La participación será voluntaria y él ó ella podra retirarse cuando quiera. Este programa durará cuatro semanas con sesiones de una hora semanal acerca de la reproducción humana, contraceptivos, enfermedades venereas y mitos y fallas acerca del sexo humano. El resultado de este estudio se utilizará para determinar si se hace necesario un programa de educación sexual en las escuelas intermedias. Si usted desea que su hijo (a) participe en este programa, tenga la bondad de firmar este documento. Si usted tiene alguna pregunta sobre el programa le sugiero que me llame al teléfono 546-4011.

Atentamente,

Maurilia (Molly) Terán, Enfermera Titulada

_____

Firma de padre ó tutor

APPENDIX B

OUTLINE OF SEX EDUCATION TOPICS

I. Human Reproduction

A. Male

1. Location and function using pictorial flip chart

a. Penis

b. Scrotum

c. Vas deferens

d. Pituitary gland

e. Seminal visicle

f. Prostrate gland

2. Explanation of physical and emotional changes in adolescence

a. Body and facial hair growth

b. Hip and shoulder changes

c. Mood changes

d. Sperm production

e. Erection

f. Seminal fluid

g. Ejaculation

B. Female

1. Location and function using pictorial flip chart

a. Ovaries

b. Fallopian tubes

c. Uterus

d. Cervix

e. Vagina

f. Pituitary gland

g. Clitoris

2. Comparison with male reproductive system

3. Explanation of physical and emotional changes during adolescence

a. Body hair growth

b. Breast development

c. Mood changes

d. Menstrual cycle

C. Question and answer discussion

II. Contraceptives with samples of each

A. The pill

1. Identification

2. How and where obtained

3. How administered

4. Effectiveness

5. Side effects

B. Intrauterine device (IUD)

1. Identification

2. How and where obtained

3. How and where applied using flip chart

4. Effectiveness

5. Common reactions

C. Diaphragm

1. Identification
2. How and where obtained
3. How and where applied using flip chart
4. Effectiveness
5. Common reactions

D. Condoms

1. Identification
2. How and where obtained
3. How and where applied using flip chart
4. Effectiveness
5. Common reactions

E. Foams, creams, suppositories

1. Identification
2. How and where obtained
3. How and where applied using flip chart
4. Effectiveness
5. Common reactions

F. Withdrawal

1. Explanation
2. Effectiveness

G. Rhythm method

1. Explanation
2. Effectiveness

H. Sterilization

1. Explanation using flip chart

a. Vasectomy

b. Tubal ligation

2. Effectiveness

I. Abstinence

1. Explanation

2. Effectiveness

J. Question and answer discussion

III. Venereal Diseases

A. Introduction

1. Identification

2. Historical background

B. Types

1. Syphilis

2. Gonorrhea

3. Others

a. Non-gonoccal urethritis in male

b. Vaginitis

c. Candidiasis

d. Trichomoniasis

e. Herpes

f. Venereal warts

g. Chancroid

h. Granuloma inguinale

i. Body and pubic lice

j. Scabies

4. Transmission

5. Prevention

6. Signs and symptoms

7. Treatment

a. How obtained

b. Where obtained

8. Question and answer discussion

IV. Myths and Fallacies

A. Sources

1. Misinformation

2. Superstitions

B. In sex education

C. Common myths and fallacies

D. Question and answer discussion

APPENDIX C

QUESTIONNAIRE

HUMAN SEXUALITY

Student name_____ School number_____

Age_____ Sex: M___ F___

DIRECTIONS: Circle the letter of the word or group of words that best completes each of the statements.

I. Human Reproduction

1. Sperm cells are produced in the

   a. penis
   b. testes
   c. urethra
   d. epididymis

2. Both semen and urine leave the male body although never at the same time through the

   a. urethra
   b. bladder
   c. seminal vesicle
   d. testes

3. The sac-like structure that contains the testes is the

   a. penis
   b. seminal vesicle
   c. scrotum
   d. prostrate gland

4. The thin tissue or membrane that partially covers the opening to the vagina in most women is the

   a. fallopian tube
   b. urethra
   c. cervix
   d. hymen

5. The organ that sheds its lining at menstruation is the

   a. fallopian tube
   b. uterus
   c. vagina
   d. abdomen

II. Contraceptives

1. The pill

   a. is the most effective method of birth control

   b. has a 50/50 chance of preventing pregnancy

   c. can be taken by anyone to prevent pregnancy

   d. can be bought any place

2. A rubber (condom)

   a. should be tested before use

   b. is a popular method of contraception

   c. is 100% reliable

   d. comes in different sizes

3. Spermicides (foams, creams, jellies)

   a. can be bought without a prescription in any drugstore

   b. can be bought only with a prescription

   c. are the most effective contraceptives

   d. can be taken orally

4. Withdrawal (pulling out) is

   a. an effective birth control method

   b. effective 50% of the time

   c. usually not effective

   d. usually not done

5. Douching is

   a. an effective birth control method

   b. effective if done before intercourse

   c. effective if done 12 hours later

   d. not an effective birth control method

III. Venereal Diseases (VD)

1. VD is transmitted (passed on) by

   a. contact with toilet seats, drinking fountains, and swimming pools

   b. sexual intercourse

   c. using someone else's bath towel

   d. bites from infected mosquitoes

2. If the symptoms of VD disappear by themselves,

   a. no treatment is needed

   b. treatment is still needed

   c. one no longer has VD

   d. it means the disease is only temporary

3. If a person gets VD,

   a. one can not get it again

   b. one can acquire an immunity for life

   c. one can get it again

   d. one can not pass it on to anybody else

4. VD can be treated in Texas
   a. without parental consent
   b. only with parental consent
   c. but Texans are immune to VD
   d. only if that person breaks a law
5. Using a rubber
   a. can help prevent the spread of VD
   b. is useless against VD
   c. can give one VD
   d. gives only 50% protection against VD

IV. Myths and Fallacies
1. The size of a man's penis
   a. is determined by the size of a man's hands and feet
   b. is important for a woman's sexual gratification (pleasure)
   c. is not important
   d. is determined by the number of times one has sex
2. If there is no hymen, it means the girl
   a. is a cheerleader
   b. might be a virgin
   c. has had intercourse
   d. is not a virgin

3. Masturbation
   a. can cause pimples
   b. is a normal sexual act
   c. is practiced exclusively (only) by men
   d. is an abnormal sexual act
4. Pregnancy will be prevented if
   a. douching is done
   b. one urinates after intercourse
   c. one uses proper contraceptives
   d. intercourse occurs during menstruation (period)
5. Sex education
   a. will lead to an increase in premarital pregnancy
   b. will cause sexual experimentation
   c. will destroy family values
   d. is part of growing up

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