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The Effects Of A Teaching Program About Aids Prevention On The Knowledge, Attitudes, And Behaviors Of High School Students

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THE EFFECTS OF A TEACHING PROGRAM ABOUT AIDS
PREVENTION ON THE KNOWLEDGE, ATTITUDES, AND
BEHAVIORS OF HIGH SCHOOL STUDENTS

by

DEBORAH WHITEHEAD

A Thesis

Submitted in partial fulfillment of the requirements
for the Degree of Master of Science in Nursing
in the Division of Nursing
Mississippi University for Women

COLUMBUS, MISSISSIPPI

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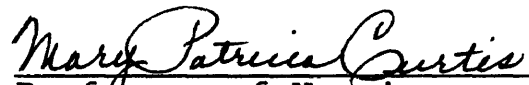
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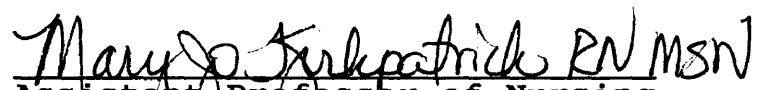
The Effects of a Teaching Program About AIDS
Prevention on the Knowledge, Attitudes, and
Behaviors of High School Students

by

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Abstract

As the number of adolescents contracting Acquired Immunodeficiency Syndrome (AIDS) increases, the importance of educational interventions to change behaviors, attitudes, and knowledge regarding AIDS becomes more significant. The purpose of this study was to ascertain the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students. Orem's Self-Care Theory was used to guide this quasi-experimental study.

The sample consisted of 49 twelfth-grade students who were drawn from two high schools in rural Northeast Mississippi. The Student Health survey was utilized to assess students' knowledge, attitudes, and behaviors about AIDS. Descriptive analysis and the t test were employed to analyze the data.

Three hypotheses were formulated. Hypotheses 1 was accepted: High school students who attended an AIDS prevention class had a significantly higher posttest score than high school students who did not attend. Hypothesis 2 was rejected since high school students had no significant difference in attitudes, after education. The third hypothesis was not tested due to the time constraints;

however, pretest responses were significant for high-risk sexual behaviors.

The researcher concluded that, after an educational intervention, subjects' knowledge level regarding AIDS issues was significantly increased; however, increased knowledge did not significantly change students' attitudes toward AIDS.

Additional findings indicated that 82% of the sample had engaged in sexual intercourse, and the majority of these subjects did not use condoms. Students indicated that because of AIDS they have to be more careful about their sexual behavior. Many students did not consider themselves at risk for AIDS.

Implications for nursing science include the continued application of Orem's Self-Care Theory with other adolescent groups, refinement, and perpetual AIDS prevention programs to all age groups and the inclusion of assessment of high-risk sexual behaviors of adolescents as a part of the data base.

Recommendations for future research included replication of the study with a larger sample including representation from other socioeconomic and ethnic groups, development of valid and reliable instruments to measure high-risk behaviors, and further studies utilizing the Orem Self-Care Theory with other adolescent groups.

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Chapter I

The Research Problem

Acquired Immunodeficiency Syndrome (AIDS) is a deadly disease that has precipitated an epidemic unprecedented in modern history. The human immunodeficiency virus (HIV) that results in AIDS has been reported to have infected 161,073 individuals in the United States. Of these individuals, 629 are ages 13 through 19 years. It has been estimated that from 1 to 1.5 million persons in the United States are infected with the human immunodeficiency virus. Because there are often no symptoms for as long as 9 years and no cure, infected persons are potentially capable of infecting others for long periods of time (Center for Disease Control, 1990).

The United States has responded to this health crisis by recommending educational programs on AIDS prevention. As a result of this measure, AIDS education has begun to be incorporated into high school curricula nationwide (Center for Disease Control, 1990). Since AIDS education is a recent development in schools, few programs have been evaluated, and research has not been established which reflects the effects of teaching programs on AIDS prevention (Brown, Barone, Fritz, Cebollero, & Nassau, 1988). Further,

the impact of such programs on the students' knowledge, attitudes, and behaviors also needs to be studied. The need for such investigation is necessary to refine content and approach educational programs for the adolescent population. Hence, this study was implemented to evaluate the impact of an AIDS teaching program on 12th-grade students attending high school in a rural setting.

Introduction to the Problem

The first major concern for Acquired Immunodeficiency Syndrome (AIDS) began in 1981 when the disease was discovered among a group of male homosexuals. Since the discovery of AIDS, the number of cases has reached worldwide epidemic proportions, and AIDS has been reported in more than 125 countries throughout the world. The World Health Organization projected that in 1991 one million people may be infected worldwide (World Health Organization, 1987).

Nationally, as of December 1990, the Center for Disease Control verified 161,073 reported cumulative cases of AIDS. The known deaths were 100,813 (63%). The statistics may be more profound because AIDS has a long symptom-free period, as much as 9 years, between the infection and the final diagnosis. Morbidity and mortality figures have shown that 50% of those diagnosed as having AIDS have not survived for more than approximately 1 1/2 years beyond diagnosis, and approximately 12% have survived for more than 3 years (Center for Disease Control, 1990). In addition to these

findings, health care and supportive services costs for the 161,073 individuals who have AIDS are projected to be an estimated 8 to 10 billion in 1991 (Center for Disease Control, 1990).

Recently, Mississippi has progressed negatively from 40th to 18th in the nation for reported cumulative AIDS cases with 686 individuals contracting AIDS and 398 (58%) known deaths. Of these 686 reported cumulative cases, 409 (60%) of these individuals were white, 273 (40%) were black, 3 individuals were Hispanic, and 1 was of other or unknown ethnic origin. Males were predominant with 621 (91%) of the cases and 65 (9%) of the reported cases were listed as females. Also, 7 individuals were between the ages of 13 and 19 when they contracted the AIDS virus (Center for Disease Control, 1990).

The fact that 161,073 individuals in the nation and 686 individuals in Mississippi are known to have AIDS is significant because AIDS is transmitted almost exclusively by behaviors that can be modified. Equally significant is the fact that adolescents are at risk from AIDS because this age group considers themselves immortal and are generally not concerned about contracting AIDS (Center for Disease Control, 1990). In fact, Price, Desmond, and Kukulka (1985) found that 73% of the students in their study were not worried about contracting AIDS. Therefore, in response to the increasing number of reported AIDS cases in the nation,

the Surgeon General has advocated educational programs be implemented in the high school curriculum as a means of influencing attitudes and behaviors with the goal of preventing the spread of the AIDS virus in this high-risk population (Center for Disease Control, 1990).

Though AIDS educational programs are newly implemented and few studies have evaluated the educational outcomes, the findings are encouraging. One study by Price et al. (1985) examined the knowledge, beliefs, and sources of information of junior and senior high school students concerning AIDS. These researchers concluded that high school students lack sufficient knowledge concerning AIDS and that males possessed more knowledge of the disease. The students also reported receiving most of the information regarding AIDS from the mass media. Therefore, the recommendations were that high schools should strive to provide more in-depth and accurate information regarding AIDS prevention.

In another study by Brown et al. (1988), a state-mandated education program was evaluated with 2,709 adolescent participants. This quasi-experimental study focused on the possible association between changes in knowledge, attitudes, and intentions toward future behaviors. Brown et al. concluded that, after instruction, students were more likely to endorse abstinence as a method of AIDS prevention. Attitudes were influenced as students became slightly more tolerant of people with AIDS. The

reported frequencies of high-risk behaviors validated that at least 24% of students had engaged in each of the behaviors measured, which were intentions to experience risk via drug usage, sexual intercourse, and alcohol intoxication (Brown et al., 1988). A limitation of these studies is that the majority of the subjects were white and from middle-income classes, thus the findings may not be generalized to other populations. Additionally, too few studies have been implemented to evaluate and refine AIDS educational programs.

Purpose of the Study

The purpose of this study was to ascertain the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students. This information is useful to nurse clinicians who are concerned with the need to gain greater insight into the educational aspects of the adolescent population and to incorporate these insights into AIDS prevention teaching programs. The ultimate goal would be to reduce the spread of the AIDS virus and promote responsible behavior in adolescent age groups through appropriate education which would impact knowledge, attitudes, and behaviors.

Significance to Nursing

This research study about the effects of a teaching program for AIDS prevention contributes to nursing research, nursing theory, nursing practice, and nursing education.

Nursing research. Currently, there are limited research and empirical data on the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students. It is evident, however, that a wealth of information has evolved regarding the health crisis that has precipitated from the worldwide AIDS epidemic. Findings from this study provide insights into the educational needs, knowledge levels, attitudes, and behaviors of the adolescent population. These findings may assist in the development of AIDS prevention programs that will equip young people with the knowledge and skills needed to adopt and maintain types of behaviors that could eliminate adolescents' acquiring AIDS. Also, these findings could assist the educational system in refining appropriate AIDS prevention programs for future generations. In addition, this study adds to the body of research related to AIDS.

Nursing theory. This study serves to advance the establishment of the Orem's Self-Care Theory for Nursing as an appropriate framework for identifying and assessing high school students' knowledge, attitudes, and behaviors. This study also validates the appropriateness of Orem's Self-Care

Theory in the educational setting. In addition, the three hypotheses stated in this study test the Orem's Self-Care Theory and lend specific direction for theoretical refinement in the area of AIDS research.

Nursing practice. Family Nurse Clinicians (FNC) in the community setting have a unique opportunity to assess adolescent high-risk behaviors and develop preventive interventions aimed toward AIDS prevention. The FNC can incorporate these findings into practice by including education to clients that may decrease the incidence of adolescents acquiring AIDS and ultimately reduce the need for admission to health care services for complications from AIDS.

Nursing education. As the AIDS epidemic continues to change the practices in the nursing profession, more graduates of schools of nursing will be responsible for implementing universal precautions and AIDS prevention procedures. Findings from this study contribute to the development of a nursing curriculum that includes a focus on AIDS prevention teaching strategies as a means of reducing the incidence of AIDS in the American population. The introduction of teaching interventions specific to AIDS prevention at the graduate level where FNCs are educated is especially pertinent.

Statement of the Problem

Since scant research has been conducted on education outcomes of AIDS teaching programs, the problem to be explored was what are the effects of an AIDS prevention class on the knowledge, attitudes, and behaviors of high school students?

Theoretical Framework

Orem's Self-Care Theory for Nursing served as the theoretical framework for this study. Orem's general theory is composed of three related theories: Self-Care, Self-Care Deficit, and Nursing Systems (Marriner-Tomey, 1989). Orem defined self-care as a process which involves the person's ability to regulate the environment which then specifically promotes the general goals of a person: sustaining, maintaining, or restoring integrated functions under stable or changing environmental conditions (Fawcett, 1989). According to Orem (1980), self-care involves three requisites: universal, developmental, and health-deviation. The universal requisites are associated with conditions and events that occur during various stages of the life cycle, as well as with events that may adversely affect development (Orem, 1980).

The developmental self-requisite also is associated with human developmental processes and education deprivations, which in this research study were the adolescent's potential knowledge deficits regarding

transmission of the AIDS virus (Orem, 1980). The developmental requisites promote maturation in the stages of childhood, including adolescence, and their progression toward entry into adulthood. Therefore, the developmental requisite is of significance to this study because this requisite is believed to promote maturation in the stages of primary prevention of deleterious effects of conditions that can affect human development, such as educational deprivation related to a knowledge deficit regarding the transmission of the AIDS virus (Orem, 1980).

Another area of interest to this research study was the therapeutic self-care demand. According to Orem (1980), the therapeutic self-care demand sets forth the continuing health care that prevents disease, maintains health, and contributes to the student's human development. Therefore, the therapeutic self-care demand enhances the goals of the student to prevent AIDS, thus contributing to the student's healthy development (Orem, 1980).

Self-care deficit is the second theory and is defined as a health-related limitation that renders individuals incapable of continuous self-care or that results in ineffective care. The self-care deficit proposition of interest to this research study was the students' potential lack of knowledge, preconceived attitudes, and uncontrolled behaviors regarding the transmission of the AIDS virus. These potential deficits impact the adolescents' ability to

engage in self-care and are conditioned by age, developmental life experiences, sociocultural orientation, health, and available resources (Orem, 1980).

The Theory of Nursing Systems is defined as a complex form of deliberate action performed by nurses for the sake of others. The nurse also is viewed as a helper (Orem, 1980).

The nursing system of interest to this researcher involved the supportive and educative system. This system is appropriate for situations where the individual is able to perform or should learn to perform required measures of therapeutic self-care but cannot do so without assistance. Valid helping techniques in these situations include combinations of support, guidance, provision of a developmental environment, and teaching. This system also involves the individual's requirements for assistance related to decision making, behaviors control, and acquiring knowledge and skill (Orem, 1980). The Nursing System Theory was utilized to assist the adolescents in performing therapeutic self-care regarding AIDS prevention by implementing a video presentation, discussion, and the Student Health Survey of student's knowledge, attitudes, and behaviors regarding AIDS prevention.

In conclusion, the Orem's Self-Care Theory was chosen after careful consideration regarding the self-care or dependent care theory, self-care deficit theory, and nursing

systems theory. Orem's Self-Care Theory was believed to be relevant for this research study that evaluated the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students.

Research Hypotheses

There were three hypotheses for this study:

1. High school students will have a higher posttest knowledge score on the Student Health Survey after attending an AIDS prevention class than students who do not attend.

2. High school students will have a higher posttest attitude score on the Student Health Survey after attending an AIDS prevention class than students who do not attend.

3. High school students will have a higher behavior change posttest score on the Student Health Survey after attending an AIDS prevention class than students who do not attend.

Definition of Terms

For the purpose of this study, terms were defined as follows:

High school students. Theoretical: Male and females ranging in age from 13 to 19 years attending ninth to 12th grade in a secondary school. Operational: All male and female students in the 12th grade in two high schools in Northeast Mississippi who were willing to participate in the study.

High posttest knowledge score. Theoretical: A measurable increase in correct answers about AIDS diagnosis, tolerance, and causes. Operational: The experimental group's answers reflect significantly improved total knowledge scores on the Student Health Survey as compared to those of the control group using the t test at the .05 level.

Higher posttest attitude score. Theoretical: A measurable increase in correct answers about AIDS tolerance, fear of AIDS, and intention to alter behavior. Operational: The experimental group's answers reflect significantly improved attitudes scores on the Student Health Survey as compared to the control group's scores using the t test at the .05 level.

Higher posttest behavior score. Theoretical: A measurable increase in low-risk behavioral answers about AIDS on the posttest survey. Operational: The experimental group's answers will reflect a significant increase in low-risk behavior choices on the Student Health Survey as compared to the control group's choices using the t test at .05 level.

Student Health Survey. Theoretical: A detailed investigation for students, including a section on demographics, knowledge, attitudes, and behaviors about AIDS. Operational: A survey designed by Brown et al. (1988) with the specific purpose of obtaining data utilizing

eight demographic, 20 knowledge, 26 attitude, 11 behavior, and two discussion questions regarding AIDS and AIDS prevention.

AIDS prevention class. Theoretical: A class which presents facts about AIDS and AIDS prevention. Operational: A one-hour class with lecture, open discussion, and a video presentation on facts concerning AIDS and AIDS prevention.

High school students who do not attend. Theoretical: Males and females ranging in age from 13 to 19 years who study in a school and do not attend the one-hour AIDS prevention program. Operational: 12th grade students in one school in rural Northeast Mississippi who meet theoretical criteria, are willing to participate, and do not attend the one-hour AIDS prevention program.

Assumptions

The assumptions of this study were

1. The high school student is a biopsychosocial being with a developmental capacity to become a complete and effective self-care agency without intervention from health care professionals except when actual or potential self-care deficits arise.

2. The developmental self-care requisites of students are associated with conditions and events that occur during various stages of the life cycle, as well as with events that may adversely affect development.

3. The high school student is at a potential risk for health-deviation in the self-care requisite without sufficient knowledge concerning attitudes and behaviors toward AIDS and AIDS prevention.

4. Adolescents are at risk for developing the AIDS virus.

5. Students' knowledge, attitudes, and behaviors are measurable.

Chapter II

Review of the Literature

The purpose of this review of the literature was to present current research relevant to the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students. Few research studies regarding the public's knowledge of AIDS were submitted during the early 1980s.

The first study to examine adolescent's concepts and misperceptions was conducted in 1985 by Price, Desmond, and Kukulka. The purpose of this survey was to examine the knowledge, beliefs, and sources of information regarding AIDS of junior and senior high school students. The problem statement was what are high school students' perceptions and misperceptions about AIDS? The research questions were as follows:

1. Has the fear of AIDS been transmitted to the adolescent population?
2. Are adolescents receiving basic and accurate information regarding AIDS?
3. What are the sources and the quality of AIDS information for the adolescent population?

A questionnaire and letters of explanation and request were sent to the public school board administrators, and permission was obtained to conduct the study. The students were invited to participate in the survey. The actual sample consisted of 118 males and 132 females, 16 through 19 years of age, from four local high schools. Teachers were requested not to discuss AIDS with the students until the survey was completed.

Data were collected using a researcher-developed instrument consisting of 29 items: 19 of the questions were intended to assess students' knowledge, 9 questions asked for sources of the subjects' information regarding AIDS, and one question asked whether students were personally worried about contracting AIDS. The survey took 10 to 15 minutes to complete. Reliability of the instrument was calculated using a test-retest format given 3 days apart to 30 junior and senior high school students. The reliability was found to be .80. The Kuder-Richardson 20-internal reliability calculated the knowledge test to be .96.

A chi-square analysis was utilized to evaluate the subjects by gender and previous education on sexual issues. The knowledge questions were analyzed by the percentage of correct responses to factual questions about AIDS. The sources of information regarding AIDS also were analyzed by percentages.

The major findings were that 75% of the students answered three questions correctly (Price et al., 1985).

These students knew the individuals were not born with AIDS, that individuals are likely to die when they acquire AIDS, and that homosexuals are most likely to get the disease. Between 50% to 75% of the students answered four questions correctly. Twelve of the questions were answered incorrectly by 50% or more of the students. The chi-square analysis of responses based on gender of the students found significant differences on eight of the 20 items. Males were found to be more likely to respond correctly than females in these eight areas. Also, 73% of the students responded that they were not worried about getting AIDS. The students received their information most often from the mass media via television, newspapers, magazines, radio, friends, schools, relatives, physicians, and others. Fewer than one third of the students, however, claimed to receive information on AIDS from schools and physicians.

The students who received AIDS information from magazines obtained the highest level of knowledge as measured by knowledge components of the questionnaire. These students scored 9.08 out of a possible score of 19. The lowest scores included the groups who received information from relatives (8.30), physicians (8.23), and friends (8.16). The mean score for students receiving information at school was 8.63.

Price et al. (1985) concluded that, as a whole, junior high school and high school students do not possess a high

level of knowledge regarding AIDS. In general, students seem not to be concerned about contracting AIDS. The researchers also concluded that males possessed more knowledge of the disease and that most students receive their information regarding AIDS from the mass media. The researchers recommended that additional studies be conducted with a larger sample and further evaluation of knowledge, attitudes, and behaviors over a longer time span and with a larger ethnic population due to the higher risk in Blacks and Hispanics.

The study by Price et al. (1985) is similar to this study in that the variables of knowledge and attitudes were researched. The designs of the studies differ. Price et al. used a descriptive survey design, while this study used a quasi-experimental design and employed an AIDS prevention teaching program.

Another study was conducted to determine the effects of age and cognitive development upon children's understanding of AIDS (Schvaneveldt, Lindauer, & Young, 1990). The conceptual framework utilized was the Piagetian principles of cognitive development. The purpose of the study was threefold: (a) to determine the knowledge children have concerning AIDS, (b) to determine to what degree age and cognitive level of development affect children's understanding of AIDS, and (c) to increase the information base regarding children's knowledge of AIDS in order to

develop a more effective family life education process regarding AIDS.

The study tested four hypotheses in accordance with Piaget's notions of cause and effect, utilizing the developmental framework of cognition regarding children. The first hypothesis proposed that knowledge of AIDS is dependent upon the child's age. Second, when questioned about AIDS, preschool children and selected first graders tended to give global, circular, egocentric responses; to use magical reasoning; and to employ immanent justice to explain the cause of AIDS. The third hypothesis stated that selected first-grade and most third-grade children offer more sophisticated answers but still are somewhat inaccurate in explaining AIDS. Lastly, fifth-grade students have a relatively clear understanding of the causes and effects of AIDS as a disease process (Schvaneveldt et al., 1990).

The convenience sample consisted of 42 children from preschool, first-grade, third-grade, and fifth-grade elementary classes. The children ranged in age from 4 to 11 years with 15 males and 37 females (Schvaneveldt et al., 1990).

The instrument utilized for data collection was designed specifically for the investigation. Prior to testing, the instrument was critically reviewed for validity by three experts in family studies and child development. No coefficients for reliability were noted.

Written permission was obtained from the parents; then the children were interviewed separately. Each child was presented a poster with the word AIDS printed on it to introduce the concept and to build rapport. The child was then asked a series of structured questions regarding AIDS. Data were descriptively analyzed using chi-square and t test analyses (Schvaneveldt et al., 1990).

The researchers found that the third and fifth graders exhibited significantly more knowledge about AIDS than did those in the preschool or in the first grade. Another interesting finding was the source of the children's knowledge concerning AIDS. The researchers concluded that the children learned more about AIDS from the mass media and had limited home involvement regarding discussion of AIDS. Therefore, Schvaneveldt et al. (1990) determined that the older children possessed significantly more knowledge regarding AIDS and that AIDS was discussed at home on a very limited basis.

The fear children have of contracting AIDS was also measured. The preschool children expressed no fear of AIDS for themselves or members of their family, 30% of the first graders expressed concerned, while 50% of the third graders and 64% of the fifth graders were concerned. Therefore, it was evident that a positive linear relationship existed between grade level in school and fear of contracting AIDS. Thus, the researchers concluded the higher the grade, the

higher the level of fear of contracting AIDS (Schvaneveldt et al., 1990).

The recommendations were aimed toward areas of application for family life educators. The first recommendation was to implement educational programs for preschool and older children on their cognitive level with a direct, clear, and systematic approach to AIDS education. Second, the data clearly showed that age is a strong predictor of what children know and understand about AIDS. Therefore, if information about AIDS is to be constructive, instruction must take place on the child's level of understanding. The third recommendation involved the importance of health care professionals having an understanding of children's perceptions regarding both causes and consequences of illness. Fourth, as the media is apparently a major source of information for young children, the suggestion involved parents and family educators taking advantage of teaching opportunities offered via this means. Lastly, since parents are in the position as primary role models and instructors for their children, the issue of parental awareness and knowledge of AIDS was recommended as a logical first step in educating families. The researchers also recommended that parents be provided with basic knowledge of a child's cognitive development (Schvaneveldt et al., 1990).

Furthermore, the researchers were confident that parents equipped with accurate information regarding AIDS and the cognitive developmental stages of children would be in a strategic position to educate their children about AIDS. Thus, family life educators and parents were regarded as responsible for educating children about the causes and implications of AIDS in society.

The study by Schvaneveldt et al. (1990) is similar to this study as knowledge was an age-related variable that was measured. The study was different in that Schvaneveldt et al. used subjects who were first-, third-, and fifth-grade students and did not implement an AIDS prevention teaching program, while the focus of the present study was to provide an intervention to assess the changes in the knowledge level, attitudes, and behaviors of high school students.

Another study by Brown et al. (1988) explored the effects of a state-mandated educational program about AIDS and AIDS prevention on the knowledge, attitudes, and behaviors of junior high and senior high school students. The purpose of the study was to determine the associations between changes in knowledge, attitudes, and intention toward future behaviors. The research question answered the problem statement: What effect does an AIDS prevention program have upon the knowledge, attitudes, and behaviors of junior high and senior high students.

The sample consisted of 2,709 students from the seventh through the 12th grade of five school districts from across Rhode Island. The students were from predominantly middle-class backgrounds. In the sample, 93% of the sample belonged to the white race, and female and male participants were equal. The experimental group ($n = 2,378$) was composed of 1,260 junior high students and 1,118 senior high students. The control group ($n = 331$) was composed of 157 junior high students and 174 senior high students, or 12% of the total sample. The students in both the control and experimental groups attended the same school. Brown et al. (1988) explained that an entire school was not used for the control population because demographic equivalency would have been difficult to obtain.

Data were collected utilizing the Student Health Survey. This survey consisted of eight demographic questions, 20 knowledge items, 20 attitude statements, and 12 coping questions or 12 behavior questions. The knowledge questions involved statements regarding diagnosis, route of transmission, course, and other general questions about AIDS. The attitude questions included statements regarding AIDS patients and homosexuals and intentions toward future behavior. Students also reported the occurrence of specific sex and drug-related behaviors in the month previous to testing (Brown et al., 1988).

The experimental group completed the Student Health Survey both before and after a 4-hour educational program on AIDS. The control group completed the Student Health Survey at the same time as the experimental group but were scheduled to receive education later in the year.

The first step toward data analyses involved matching the students' pretest and posttest questionnaires. Scale scores were divided into mutually exclusive groups to reflect the students' knowledge, attitudes, and intention toward future behavior. Three attitudes scales reflected the students' tolerance of people with AIDS, tolerance of homosexuals, and fear of AIDS (Brown et al., 1988). The intention toward future behavior scale was constructed using items reflecting intention toward intercourse, condom use, or IV drug use.

Finally, standardized change scores were computed for each student. These scores were derived from standardized residual differences between students' pretest and posttest scale values. These scores were used to evaluate a student's change in comparison to the average change of students with the same pretest score (Brown et al., 1988).

A repeated measures ANOVA was used with the scale scores to determine group (experimental versus control) and time (pre versus post) effects. Item-by-item analysis for group and time differences were reported using student's t test. In addition, standardized residual change scores were

compared to determine if significant differences existed in the patterns of change in experimental and control subjects. The data analyses for statistically significant values were considered at the $p .005$ level.

Brown et al. (1988) evaluated the pretest data and concluded that, prior to education, there was no statistically significant difference between the control and experimental groups. The two-by-two repeated measures ANOVA revealed statistically significant interactions between condition changes in knowledge, tolerance of people with AIDS, and intention to behave safely in the future. Thus, Brown et al. concluded that those in the experimental group knew more, expressed more tolerance of people with AIDS, and intended to behave more safely in the future than did those in the control group.

The students also exhibited an increase in mean knowledge from 58% answering correctly on the pretest to 71% on the posttest for the educated group ($t = 38.52$, $p = .001$). Overall, knowledge increased significantly compared to control ($p = .001$) in 16 (80%) of the 20 questions. Only five questions were answered correctly by more than 90% of students on the posttest, which included items dealing with transmission by touching, intercourse, IV drug use, maternal-fetal transfer, and the use of condoms to reduce risk. The composite scores revealed that students, after education, became slightly more tolerant of people with AIDS

(\underline{t} = 12.93, \underline{p} = .001) and homosexuals (\underline{t} = 12.39, \underline{p} = .001), and slightly more likely to endorse abstinence as a method of AIDS prevention (\underline{t} = 4.67, \underline{p} = .001) (Brown et al., 1988).

Students' level of fear following education did not significantly change. In the area of behavior, after education 59% of students said they would not have sex because of AIDS. Fear of AIDS was revealed on the posttest, with 75% reporting to be nervous about AIDS and 63% indicating that love seemed more frightening because of AIDS (Brown et al., 1988).

Frequencies of high-risk behaviors showed that at least 24% of the students had engaged in each of the behaviors measured, that 32% of students reported that they had engaged in sexual intercourse, that 47% said they had gotten drunk, and 27% reported to have smoked marijuana. Twenty-four percent answered that they or their partner had used a condom in the past.

Age was a significant variable in knowledge change, as senior high students changed more than junior high students (\underline{t} = 5.28, \underline{p} = .001). No significant differences in changes scores were observed for any of the attitude scales. Even though senior high students learned more, their attitudes related to AIDS did not change comparably (Brown et al., 1988).

Gender was a significant variable in knowledge change ($\underline{t} = 2.75, p = .01$), tolerance toward people with AIDS ($\underline{t} = 7.63, p = .001$), and intention toward less risky behavior in the future ($\underline{t} = 6.31, p = .001$), with girls changing more than boys on an average. Therefore, this study by Brown et al. (1988) provided an estimate of the extent and kind of changes produced by a variety of typical AIDS education programs across diverse school districts and populations.

Brown et al. (1988) concluded that the experimental group, not the control group, changed to a statistically significant degree ($p = .001$). The experimental group became more knowledgeable, endorsed slightly more tolerant attitudes, and reported an increased intention to avoid intercourse as a means of AIDS prevention. Age, gender, and AIDS-related anxiety were found to be significant variables in the AIDS education process. The researchers further concluded that the modest change observed should emphasize that the dissemination of AIDS information by public schools, as a means of AIDS prevention, is only the first step in changing adolescent behavior.

Finally, Brown et al. (1988) concluded that knowledge is likely a prerequisite of behavioral change and thus schools, along with many other institutions, play a vital role in the learning process. Therefore, AIDS prevention efforts need to occur over time and be broadly disseminated into the individual communities.

Recommendations for future research included the conduction of more detailed self-report measures over a longer span of time to assess the impact of AIDS programs on high-risk behaviors and attitudes. Brown et al.'s (1988) study is similar to the current study in that knowledge, attitudes, and behaviors are variables. This study is also similar in that a control and experimental group was utilized and an AIDS prevention teaching program was implemented. However, the control and experimental groups were from separate schools in this study. Additionally, the study by Brown et al. (1988) evaluated seventh- and 12-grade students, whereas the present study evaluated only 12th-grade students.

A similar study was conducted by Brown, Nassau, and Barone (1990). The purpose of their study was to ascertain differences in AIDS knowledge and attitudes of fifth-, seventh-, and 10th-grade students. The problem statement was what are the differences in AIDS knowledge and attitudes of fifth-, seventh-, and 10th-grade students? The intent of the research question and the problem statement were congruent.

The convenience sample consisted of 441 students from the fifth-, seventh-, and 10-grade classes. The sample was 49% male and predominantly white (96%). A total of 123 fifth graders, 116 seventh graders, and 202 tenth graders comprised the sample (Brown et al., 1990).

Two questionnaires were employed to assess knowledge, attitudes, and coping skills related to AIDS in a manner appropriate to the student's age and cognitive ability. The seventh- and 10th-grade students completed an identical questionnaire previously developed to evaluate adolescents' knowledge of AIDS. The fifth-graders completed a questionnaire adapted from the instrument completed by the older students.

Students' knowledge of AIDS transmission was assessed by eight items. Attitudes toward AIDS, people with AIDS, and homosexuals were assessed by six statements, with students responding to a hypothetical story in which a friend of theirs had AIDS. One open-ended question solicited emotional reactions to the AIDS crisis.

The seventh- and 10th-grade students completed questionnaires just prior to beginning a state mandated AIDS course; fifth-grade students completed questionnaires but were not scheduled to receive AIDS education. Completion of the instrument took about 20 minutes. The students were instructed not to put their names anywhere on the questionnaire. The fifth graders obtained written parental consent; however, the seventh and 10th graders did not obtain consent because the AIDS prevention program was state mandated (Brown et al., 1990).

The data were analyzed using computed frequencies of the entire sample, on each of the comparable knowledge,

attitude, and coping items. A total knowledge score for percentage of correct answers was computed. Attitude scales were constructed to reflect tolerance of people with AIDS and the perceived severity of the AIDS crisis. A one-way ANOVA was performed on each of the derived scales, and the Scheffe multiple comparison test was performed if responses between the grade levels were significantly different (Brown et al., 1990).

Pearson Product Moment Correlation coefficients between the scales were computed for the entire sample to determine if significant relationships ($p = .01$) were present. Chi-square analyses were also used to determine if responses by grade were significantly different at the item level. Ninety-six percent of students completed the entire questionnaire. All students were most knowledgeable (more than 80% correct) on items concerning whether a person could contract AIDS through touching, sharing needles, and sexual intercourse. Students were least knowledgeable (less than 60% correct) on items reflecting whether a person could contract AIDS through kissing or mosquito bites. Chi-square analyses of the knowledge items revealed grade level as a significant variable ($p < .01$) on four of eight knowledge questions. Fifth-grade students were significantly more knowledgeable than older students concerning the safety of having blood taken, and significantly less knowledgeable

than older students concerning obtaining AIDS from sharing a comb (Brown et al., 1990).

Seventh-grade students were significantly less knowledgeable on the safety of sharing needles and AIDS in utero. Fifth-grade students showed a trend toward being more knowledgeable in response to whether a person could contract AIDS by kissing. Ninety-five percent of students were in favor of having AIDS education in schools. Forty to 60% of the students endorsed attitudes reflecting intolerance of people with AIDS.

Chi-square analyses revealed age as a significant variable ($p < .01$) on three of six attitude statements. Fifth graders were significantly less likely than older students to touch a person with AIDS and to blame homosexuals for the AIDS crisis. Fifth-graders were significantly more likely than older students to indicate apprehension about AIDS. Ninety percent of the students responded to the hypothetical story in which a friend had AIDS, by indicating they would talk to family and friends to feel better about the AIDS disease (Brown et al., 1990).

An analysis of variance revealed the students perceived the severity of the AIDS crisis equally and were equally tolerant of people with AIDS. Tenth-graders, however, on the total knowledge scale ($p < .001$) were significantly more knowledgeable than younger students on the Scheffe test

($F = 3.21$, $p = .05$). Therefore, grade level was a significant variable.

Brown et al. (1990) suggested that AIDS information widely covered by the media was well known by students in the fifth-, seventh-, and 10th-grades. Grade levels differed in knowledge when students need a conceptual understanding of AIDS to correctly answer less publicized items. Fifth graders had increased negative emotional responses regarding use of a comb, but teenagers were not unsure about the safety of kissing. Brown et al. attributed these factors to the students' immature abstraction abilities because fifth-graders had been taught that other diseases could be transferred by combs, and teenagers were struggling with more developmental milestones regarding sexuality. Therefore, the students' emotional saliency could contribute to misconceptions concerning AIDS. Likewise, attitudes differed depending on the perceptions for different grade levels.

Fifth-grade students evidence concern for all varieties of casual contact, and older students projected blame in response to anxiety about AIDS. Therefore, Brown et al. (1990) concluded that AIDS information widely covered by the media is known comparably by students in all grades. The researchers identified that grades differ in knowledge when students need a conceptual understanding of AIDS to correctly answer less-publicized items. Fifth-graders

exhibit more emotional relevance toward sharing a comb, while teenagers are more concerned about contracting AIDS from kissing. These differences were explained as immature abstraction abilities that hamper generalization of knowledge across the grade levels. Likewise, attitudes differed depending on the emotional saliency of the subjects about AIDS. These attitudinal differences were speculated by Brown et al. (1990) as perhaps being fueled by the developmentally appropriate sexual concerns.

The recommendations were aimed toward future research to evaluate the hypothesized explanations for the identified grade differences and extension of a similar study into the minority and urban population to clarify whether the differences noted are caused by grade-related emotional and cognitive factors or are rather a product of culture and context.

The reviewed study was similar to the present study in that knowledge and attitudes are variables. The study by Brown et al. (1990) was different in that the sample consisted of fifth-, seventh-, and 10th-graders' knowledge and attitudes, whereas the present study obtained data from 12th-grade students only. The present study assessed the students' behaviors and utilized a pretest and posttest approach and sampled a control and experimental group, while the reviewed study (Brown et al., 1990) did not.

Summary

In summary, a review of the literature addressing research specific to the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students was conducted. An examination of the literature provided multiple perspectives on the knowledge levels of school-age children. Recent studies consistently emphasized the primacy of exploring the knowledge, attitudes, and especially behaviors of school students and the effects a teaching program about AIDS prevention would have in respect to a change in these variables (Brown et al., 1988; Brown et al., 1990; Price et al., 1985; Schvaneveldt et al., 1990).

While the knowledge levels of children from preschool through the 12th grade had been found, only one study was discovered in which control and experimental treatment groups were utilized to assess knowledge, attitudes, and behaviors with inclusion of a pretest and posttest format in combination with an AIDS prevention teaching program as an intervention (Brown et al., 1988). Therefore, building on the research study by Brown et al. in which the knowledge, attitudes, and behaviors of high school students were assessed before and after an AIDS prevention teaching program, the present study focused on the effects of an AIDS prevention teaching program on these important variables in the adolescent population.

Chapter III

The Method

The purpose of this study was to examine the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students. In this chapter, methods used to study the variables of interest are identified. The research design, population, and sample are described, and instruments utilized for the measurement of variables are discussed. Procedures for data collection, techniques for data analysis, and testing of each research hypothesis are explained.

Design of the Study

A quasi-experimental study was undertaken to determine whether a difference existed in two groups of students regarding the variables of knowledge, attitudes, and behavior. This design was chosen because random selection of subjects was not possible; however, the control and experimental groups were randomly assigned, and the independent variable was manipulated (Polit & Hungler, 1987).

Variables. The dependent variable was the effects of a teaching program about AIDS prevention on the knowledge,

attitudes, and behaviors. This variable was measured by a pretest and posttest that utilized the Student Health Survey. The independent variable included the high school students. The controlled variables included the age group, the geographical location, and the selection of two high schools with mixed ethnic and income groups.

One intervening variable identified by the researcher was that the experimental group did not have an instructor in the classroom as the researcher presented the education program and administered the questionnaire, while the control group instructor chose to be present in the classroom. This factor may have impacted on the control group's response to the questionnaire because the experimental group was more at ease without the instructor present, while the control group was observed to be more anxious. Also, media coverage unknown to the researcher may have affected the results of the responses.

Research hypotheses. There were three hypotheses for this study:

1. High school students will have no significant difference in posttest knowledge scores on the Student Health Survey after attending an AIDS prevention class than students who do not attend.

2. High school students will have no significant difference in posttest attitude scores on the Student Health Survey after attending an AIDS prevention class than students who do not attend.

3. High school students will have no significant difference in behavior change posttest scores on the Student Health Survey after attending an AIDS prevention class than students who do not attend.

Limitations. External validity or generalization of the research study findings may not be representative of all high school students due to the small predominantly white sample taken from a rural geographic setting. Also, a weakness of this research study, based upon the design, was that ample time was not available to allow a maximum educational effect regarding AIDS prevention upon the experimental group. Another weakness may have involved the small predominantly white sample taken from a rural southern geographical location.

The instrument was considered reliable because of the multiple testing in previous studies. Nevertheless, the survey portion involved questions that were, at times, personal in nature. Therefore, the students may have been hesitant to answer these questions honestly.

Also, the behavior portion of the questionnaire scored high-risk behavior for IV drug usage, sexual intercourse, and alcohol intoxication into combined scales. These three factors should be evaluated in separate behavioral scales because though some students are at low-risk for AIDS via IV usage, the same student may be at high-risk for acquiring AIDS by engaging in unsafe sexual practices.

Another weakness of the instrument was that the findings were totally reliant upon the student's subjective responses and no objective information was obtainable. The procedure potentially may have posed a threat to internal and external validity because the survey was introduced to the students as a special presentation with a guest speaker and was not incorporated into the normal curriculum.

Setting, Population, and Sample

This research took place in Mississippi, a state that had progressed negatively from 40th to 18th in the nation for reported cumulative AIDS cases, with 686 individuals contracting AIDS and 398 known deaths. Mississippi also is a state with a lower median income than any state in the nation. The estimated average median family income was \$13,186 in 1988 (Mississippi Statistical Abstract, 1988). In addition to these two factors, Mississippi also is first in the nation for teenage pregnancy and infant mortality (Center for Disease Control, 1990). These four factors put the teenagers of this state at a higher risk for contracting AIDS. Also, the racial distribution for reported cumulative cases of AIDS in Mississippi is 409 (60%) White, 273 (40%) Black, three Hispanic, and one other or unknown ethnic groups. Males are predominant with 621 (91%) of the cases and 65 (9%) of the reported cases limited as females. The racial percentages are significantly dramatic in relationship to the total Black ethnic population of the

state, as well as the nation (Center for Disease Control, 1990).

The setting for this study was two high schools located in rural Northeast Mississippi. The two schools were randomly selected. One high school represented the experimental group, and the second high school represented the control group. The students were predominantly white and ranged from lower- to middle-income backgrounds.

The accessible population for this study included all the 12th grade students in the two high schools. The high school student census from the experimental group was 136, with 36 twelfth graders as potential participants and 23 students as actual participants. The control group involved 49 potential subjects, with 26 actual participants and a total high school census of 174 students.

The school district contained four high schools with a total census of 660 students. Eighty-eight percent of the total group of students were white, while 12% of the students were black. This racial variable is typical of the general population for this catchment area, as less than 15% of the district's population is Black. This racial variable, however, is not the case in all areas of Mississippi. The distribution by sex of the group was 51% female and 49% male participants. Sixty-five percent of the students indicated \$20,000 to \$30,000 or more as the annual family income.

The sample was composed of the 12-grade students in the first period English class for the experimental group and the Social Science class for the control group. These classes were chosen by the principals of the two schools because they felt the senior students and their parents would agree to participation in the AIDS education program more readily than the parents of younger students. The entire class of seniors was not tested because there were no available classrooms to accommodate the total group of 12th-grade students in either school. The student participants all met the criteria outlined in theoretical and operational definitions of terms for this study and voluntarily agreed to participate.

Protection of the rights of the subjects was regarded by first obtaining approval from the Mississippi University for Women Committee on Use of Human Subjects in Experimentation (see Appendix A). Anonymity of the participants was preserved by assigning a code number from 1 to 49 beside the student's name. The list of students' names and code numbers was known to the researcher alone. Confidentiality was ensured as the results were reported as group data.

Methods of Data Collection

Consideration of data collection methods included attention to the techniques of instrumentation. Specific

procedures for gathering and recording data also are addressed.

Instrumentation. The instrument utilized for measuring the variables in this study was the Student Health Survey (see Appendix B). Permission was obtained from the original developers at the Brown University to utilize the Student Health Survey for this study (see Appendix C). The Student Health Survey was designed to be self-administered in an individual or group setting under the supervision of an educator. The instrument is intended to obtain subjective data utilizing eight demographic, 20 knowledge, 26 attitude statements, 11 behavior questions, and two discussion questions regarding AIDS and AIDS prevention. The instrument was first utilized in a pilot study by Brown et al. (1988) with substantial revision in which ambiguous questions were clarified and new items added to improve face validity. Since these revisions, the instrument has been tested in studies with more than 4,000 students (Brown et al., 1988).

The knowledge questions presented the students with statements regarding diagnosis, routes of transmission, course, and other general questions about AIDS, which they were to answer as being either true, false, or "not sure." The attitude questions included statements regarding AIDS patients and homosexuals and intentions toward future behavior. With these attitude questions, the students were

asked to endorse items as "really true" or "sort of true" or "not true for you."

For the behavior questions the students were instructed to indicate at what age they first engaged in sexual intercourse, drank alcohol, or smoked cigarettes. Then eight questions assessed whether or not the students had ever, or in the last month, shot street drugs, driven while drunk, or had sexual intercourse, and bought or used a condom.

Finally, the last two questions were to be answered in the students' own words. The first question was "What upsets me most about AIDS is . . ." The latter question was "Because of AIDS, I now have to . . ."

The total knowledge score was computed from the 20 knowledge items. The knowledge level was analyzed by the scale documentation with 0 indicating the lowest score and 20 as the highest score.

Three attitude scales reflecting tolerance of people with AIDS, tolerance of homosexuals ("gays"), and fear of AIDS were constructed from the 20 attitude items. The tolerance toward people with AIDS was identified by Questions A1, A2, A5, A9, A10, and A16. The range was identified as a one for intolerance to 12 as tolerance toward people with AIDS. In scoring, the responses to the underlined questions were reversed so that 1 = 3 and 3 = 1. This scale also subtracted 6 to 0 the scale so the range

would be from 0 to 12 (Brown et al., 1988). The next scale involved fear of AIDS. The range was 0 as fearless to 10 as fearful, with Questions A8, A11, A13, A14, and A20 included in this group. Again, the reverse responses to the underlined questions were 1 = 3, 3 = 1 with 5 subtracted to 0 the scale.

The third scale involved AIDS and safe intentions with a range of 0 to 8, with 0 representing low (risky behavior) and 8 as high (safe behavior). The questions were A3, A4, A6, and A21. The reverse responses were 1 = 3, 3 = 1 for the underlined questions and 4 was subtracted to 0 the scale (Brown et al., 1988).

Finally, Questions 22 through 26 scored the students' response regarding their understanding of dangerous risks to life, in general. The scale ranged from 0 (low risk) to 10 (high risk) with A22, A23, and A25 underlined and reverse responses, 1 = 3, 3 = 1. The instrument developers instructed that 5 be subtracted to 0 the scale (Brown et al., 1988).

The behavior scales consisted of three components with two smaller scales based on the time of the risk behavior. These behaviors were targeted as past behavior or intentions to experience risk via IV drug usage, sexual intercourse, and alcohol intoxication.

The first scale involving past risk behavior had a range from 0 (low risk) through 15 (high risk). These

questions included 1 through 7 and 9 through 11. The recodes for Questions 1, 2, and 3 were equal 0; 16, 17, 18 = 1; 14 or 15 years = 2; and 12 or less and 13 = 3. The recodes for Questions 4 through 7 and 9, 10, and 11 were if 3 is the chosen answer, then the score is 0. The student lost a point if Questions 6 and 9 were "yes."

The second scale for recent risk behavior score ranged from 0 to 3. These questions were numbers 6, 7, 9, and 10. The student also lost one point if numbers 6 and 9 were marked "yes."

The third scale for past risk behavior scores ranged from 0 to 11. The questions involved numbers 1 through 5. The scoring for this scale was the same as for the past risk behavior scale.

The pilot testing by Brown et al. (1988) revealed that despite the personal nature, the patterns of students' responses were internally consistent. Interviews with selected students and teachers during the pilot study indicated that the reasons students were willing to answer these questions were the anonymity and confidentiality of the questionnaire (Brown et al., 1988).

Test-retest reliability of the derived scales in the control population revealed the following: Knowledge scale ($\underline{r} = .83$), intolerance of people with AIDS ($\underline{r} = .81$), intolerance of homosexuals (gays) ($\underline{r} = .67$), and fear of

AIDS ($\underline{r} = .50$). Thus, the scales demonstrated moderate to good reliability over a 3-week period (Brown et al., 1988).

The researcher began implementation by first contacting the superintendent of education in the local school district and explaining the purpose of the study and methods of data collection. However, the AIDS prevention program was declined, due to the content of the Student Health Survey.

Then, the researcher contacted two prospective principals in another school district. Again, the purpose of the study and methods of data collection were explained to the two principals. These principals agreed to participate in the study and consent was obtained (see Appendix D). The principals were sent a copy of the Student Health Survey for review and were later contacted to arrange a date for implementation of the AIDS education program. Then, 2 weeks before the implementation date, the parental consent forms (see Appendix E) were sent to the principals of the two schools for proper distribution to the prospective participants.

On the day of presentation the researcher met with the principal and teacher. Then, the researcher was introduced to the class chosen by the principal for the experimental group. The purpose of the AIDS prevention education program and survey was explained by the researcher to the prospective participants. The students were assured of confidentiality, their strictly voluntary status, and of

their privilege to withdraw from the study prior to data analysis. The students were also informed that their participation would in no way affect their school grade. Upon their agreement, participants were asked to read and sign an informed consent (see Appendix F). The high school students were then asked to complete the survey. Approximately 30 minutes were required to complete the survey.

The researcher began the AIDS prevention program for the experimental group of students with an introduction to the AIDS education program (see Appendix G), followed by the AIDS prevention class. The AIDS prevention program was concluded with an explanation of the content for the program for the next day.

The students were informed that a video presentation entitled "Sex, Drugs, and AIDS" would be viewed and a posttest would be administered. The researcher then explained the reason a posttest was necessary and encouraged all the participants to participate in this procedure as a final important phase of the AIDS educational program.

The second day the researcher presented the video followed by a discussion period in which all questions were answered. Finally, the posttest was administered to the participants. The AIDS prevention program was concluded with an expression of appreciation from the researcher to

the participants. A special thanks was also conveyed to the principal of the high school.

The control group was also presented with an introduction of the program's purpose (see Appendix G), followed by a request for each student's participation. The student consent form was explained, distributed, and collected after the student's signature. The Student Health Survey was administered followed by an invitation to the participants to complete the posttest. The posttest was administered and followed by the video entitled "Sex, Drugs and AIDS." The researcher then presented the identical AIDS prevention program as was provided for the experimental group.

Again, the AIDS prevention program was concluded with an expression of appreciation from the researcher to the participants. A special thanks was also conveyed to the principal of the high school.

Methods of Data Analysis

Descriptive statistics were generated and examined to identify demographic characteristics of control and experimental groups of students. The experimental group and control group of students' pretest and posttest questionnaires were matched using the student's code number.

Finally, standardized change scores were computed for each student in the experimental group. These scores were derived from residual differences between students' pretest

and posttest in the control and experimental groups. These scores were used to evaluate a student's change in comparison to the control and experimental group. The control group's pretest and posttest scores were used to evaluate the effects of taking the test. This analysis was necessary to determine whether the AIDS prevention teaching program affected the posttest responses or repeating the test affected the students' responses in the experimental group. The change scores evaluated the experimental group's pretest score in comparison to the control group's pretest and posttest score and the pretest scores to the posttest scores for comparison and change.

In addition, two open-ended statements were included as the last items on the Student Health Survey. The first statement to be answered by the student was "What upsets me most about AIDS is . . .," and the second statement was "Because of AIDS, I now have to . . ." These statements were analyzed qualitatively for recurrent opinions by three readers.

Summary

The research design for this study in which the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students was explored has been described in this chapter. The setting, sample, and population for this study were defined, and the methods of data collection and analysis were

related. In the subsequent chapters, the findings of the study are revealed, and the implications of those findings are discussed.

Chapter IV

The Findings

The purpose of this study was to ascertain the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students. A quasi-experimental study was conducted to determine whether a difference existed between a control group and an experimental group of students regarding the variables of knowledge, attitudes, and behaviors.

The data collected and analyzed for this study are presented in this chapter. Characteristics of the participants are described first, followed by the outcomes of data analysis related to the research hypothesis and additional findings.

Characteristics of the Participants

The sample included 49 twelfth-grade students divided into the control group, 26 (53%); and the experimental group, 23 (47%). Subjects were selected from intact classes.

Distribution of age, race, and sex. The mean age for the control group was 18.0, while the mean age of the experimental group was 17.8. Examination of the racial

distribution was ascertained and 43 (88%) of the total group of students were white, while 6 (12%) of the students were black. The control group of students were all white, while the experimental group was 73% white. The distribution by sex of the group revealed that 25 (51%) of the participants were female and 24 (49%) of the participants were male. The distribution for the control group was 15 (57%) males and 9 (39%) males for the experimental group.

Educational expectations. Examination of the demographic data regarding the students' educational goals revealed that 19 (39%) of the total group planned to complete high school, 9 (18%) planned to acquire 2 years of college or technical college, 18 (37%) planned to obtain 4 years of college, and 3 (6%) planned to complete 6 years or more of college. The mean educational years of the sample was 14.2 with 14.5 years for the control group and 13.8 years for the experimental group.

AIDS education. Forty-five (92%) of the total sample reported no previous AIDS education class during this school year. Four (8%) of the students acknowledged having attended an AIDS class within the present school year. These four students were all in the control group.

Sexual behavior and risk. The group findings regarding sexual activity indicated that 9 (18%) of the group had never had sexual intercourse, 6 (12%) participants were 12 or less to 13 years of age at the first sexual intercourse,

10 (20%) were 14 to 15 years of age at first sexual intercourse, and 24 (49%) were 16 to 18 years of age at the time of their first sexual intercourse. Twelve (24%) of the 26 participants in the control group reported to have had sexual intercourse within the last month, while 16 (33%) of the 23 participants in the experimental group had reported to have engaged in sexual intercourse within this time period. Of the 12 in the control group, 9 (75%) indicated that they did not use a condom and 14 (88%) of the 16 in the experimental group indicated that they did not use a condom.

IV drug usage and cigarette smokers. None of the students indicated that they had ever used IV drugs. Seventeen (35%) of the control and 19 (39%) of the experimental group indicated that they had smoked cigarettes.

Annual family income. The annual family income was ascertained. Of the total group, 5 (11%) of the students indicated an annual family income of less than \$15,000, 11 (24%) indicated \$15,000-\$20,000, 16 (35%) indicated \$20,000-\$30,000, 14 (30%) indicated \$30,000 or more, and 3 students gave no response. The income range was 5 (11%) indicating less than \$15,000 to 14 (30%) of the students reporting \$30,000 or more.

Analysis of Data

Three research hypotheses were developed for this study. Descriptive statistics, a t test, and a two-tailed test were utilized to test these hypotheses.

Hypothesis 1. The first research hypothesis was that high school students will have a higher posttest knowledge score on the Student Health Survey after attending an AIDS prevention class than students who do not attend. The posttest group scores ranged from 6 to 20 questions answered correctly. The posttest group mean was 16.73, while the standard deviation was 3.44. Since $t(47) = -10.71$, $p = .001$, Hypothesis 1 was accepted. These data are presented in Table 1.

Hypothesis 2. The second research hypothesis was that high school students will have a higher posttest attitude score on the Student Health Survey after attending an AIDS prevention class than students who do not attend. This hypothesis was tested by means of four attitude scales. The first scale was developed to test the students' tolerance of people with AIDS, the second scale involved fear of AIDS, the third scale involved AIDS and safe intentions, and the fourth scale involved the students' response to questions regarding dangerous risk to life, in general.

Table 1

A Comparison of Knowledge Scores on the Student Health Survey by Group Using the

Two-Tailed t Test

Group	Scores					
	Pretest			Posttest		
	\bar{M}	\underline{SD}	\underline{t}	\bar{M}	\underline{SD}	\underline{t}
Control	13.88	2.61		14.03	2.50	
Experimental	15.04	2.62	-1.55	19.78	.60	-10.71*

$p < .05.$

The tolerance toward people with AIDS was identified by attitude Questions 1, 2, 5, 9, 10, and 16. The range was 0 as low (intolerant) to 12 as high (tolerant). The posttest group mean was 6.22 with a standard deviation of 2.58. There was no significant difference between the two groups, $t(47) = .90$, $p = .37$, on the attitude scale of tolerance toward people with AIDS. These data are presented in Table 2.

The second scale involved fear of AIDS. The range was 0 as fearless to 10 as fearful, identified by Questions 8, 11, 13, 14, and 20. The posttest group mean for fear of AIDS was 5.24 with a standard deviation of 1.84. There was no significant difference between the two groups, $t(47) = -1.15$, $p = .26$, on the attitude scale for fear of AIDS. These data are presented in Table 2.

The third scale involved AIDS and safe intentions with a range of 0 to 8, with 0 representing low (risky behavior) and 8 as high (safe behavior). The questions in this group were numbers 3, 4, 6, and 21. The posttest group mean for safe intention was 5.04, and the standard deviation was 1.85. There was no significant difference between the two groups, $t(47) = .14$, $p = .89$, on the safe intentions scale. These data are presented in Table 2.

Table 2

A Comparison of Attitude Scale Scores on the Student Health Survey by Group Using the Two-Tailed t Test

Scale	Group	Scores					
		Pretest			Posttest		
		\bar{M}	\underline{SD}	\underline{t}	\bar{M}	\underline{SD}	\underline{t}
TPA ^a	Control	6.53	2.92		6.53	2.99	
	Experimental	5.65	2.55	1.12	5.86	2.02	.90
FA ^b	Control	4.50	1.79		4.96	1.86	
	Experimental	5.08	1.95	1.10	5.56	1.80	-1.15
ADI ^c	Control	5.65	1.64		5.07	1.93	
	Experimental	5.17	1.64	1.02	5.00	1.78	.14
GR ^d	Control	2.26	1.66		2.38	1.76	
	Experimental	3.56	2.08	-2.42	3.56	2.48	-1.93*

^aTPA = Tolerance toward people with AIDS. ^bFA = Fear of AIDS. ^cADI = AIDS safe intentions. ^dGR = General risk.

*p = .05.

The fourth scale involved the students' understanding of dangerous risks to life, in general. The scale ranged from 0 (low risk) to 10 (high risk). The questions in this group were numbers 22 through 26. The posttest group mean for dangerous risk to life, in general, was 2.93 and the standard deviation was 2.19. There was significant difference between the two groups, $t(47) = -1.93$, $p = .05$, on the response toward dangerous risk to life, in general. Since only one attitude scale score was at the .05 level, no significant difference emerged from any attitude scale, and the researcher rejected the second hypothesis. These data are presented in Table 2.

Hypothesis 3. The third hypothesis was that high school students will have a higher behavior change posttest score on the Student Health Survey after attending an AIDS prevention class than students who do not attend. This hypothesis was designed to be tested by means of one scale based upon the students' past risk behavior and two smaller past risk scales based upon the time of the behavior. These two smaller scales were scored according to the students' recent (in the last month) and past risk behavior. Questions 4 through 11 were scored as a "yes" or "no" with 1 representing "yes" and a 3 representing "no."

Posttest behavior change was not evaluated due to time constraints, thus Hypothesis 3 was not tested. However,

implementation time did allow for pretest behavior scale scores to be evaluated.

The first scale involving past risk behavior had a range from 0 (low risk) to 15 (high risk). These questions included 1 through 7 and 9 through 11. The group mean for past risk behavior was 8.57 with a standard deviation of 3.07. Since $t(47) = -2.77$, $p = .01$, the researcher determined that there was a significant difference in the two groups' past risk behavior. These data are presented in Table 3.

Table 3

A Comparison of Behavior Scale Scores on the Student Health Survey by Group Using the Two-Tailed t Test

Scale	Group	Pretest Scores		
		<u>M</u>	<u>SD</u>	<u>t</u>
PRB ^a	Control	7.50	2.97	-2.77*
	Experimental	9.78	2.77	
RB ^b	Control	.80	.93	-1.86
	Experimental	1.30	.92	
PB ^c	Control	4.07	2.62	-2.41*
	Experimental	5.82	2.42	

^aPRB = Past risk behavior. ^bRecent behavior (within the last month). ^cPast behavior.

* $p < .05$.

The second behavior scale involved recent risk behavior. This scale was designed to evaluate the students' experience with IV drug usage, sexual intercourse, or alcohol intoxication within the last month. The range for this scale was 0 (low risk) to 3 (high risk) for recent risk behavior. The group pretest score mean was 1.04 with a standard deviation of .95. Since $t(47) = -1.86$, $p = .07$, the researcher determined that there was no significant difference in the two groups' pretest recent risk behavior. These data are presented in Table 3.

The third behavior scale involved past behaviors. These questions were categorized as numbers 1 through 5. The range was 0 (low risk) to 11 (high risk). The group mean pretest score was 4.89 with a significant difference of 2.65. Since $t(47) = -2.41$, $p = .02$, the researcher determined that there was a significant difference in the two groups' pretest past behaviors. These data are presented in Table 3.

Further, the experimental group's intent to change risk sexual behavior was assessed by Question 21 in the attitudes section of the Student Health Survey. This question was stated as "Honestly, if I were sexually active, I probably would have intercourse without protecting myself against AIDS." Six of the students in the experimental group answered "yes" to this question on the pretest. The six

students also answered "yes" on the posttest even after the AIDS education class.

Additional Findings

Additional discoveries which help to clarify the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students were made during data analysis. These findings are described in this section.

Love is scarier because of AIDS. Twenty (41%) participants indicated yes, because of AIDS love was scarier. Nineteen (38%) participants indicated no, love was not scarier due to AIDS, and 10 (20%) indicated this question to be "sort of true" that love was more scary because of AIDS.

Parents would want their teen-ager to use condoms. Forty-six (94%) participants indicated yes, their parents would want them to use condoms, if they knew their child was sexually active. Three (.06%) participants indicated no, their parents would not want them to use condoms, if they knew they were sexually active.

Family talked about AIDS. Twenty (41%) of the participants verified that their family had talked about AIDS. Ten (20%) of the participants indicated that their family had "sort of" talked about AIDS. Finally, 19 (39%) of the participants indicated that their families had not talked about AIDS.

What upsets me most about AIDS. This question was analyzed by a panel of three reviewers to assess the content. Three prominent comments emerged.

1. There is no cure for AIDS.
2. Innocent people die from AIDS.
3. Individuals spread AIDS with no regard about infecting others.

Because of AIDS, I now have to. Two recurrent statements were identified, "Because of AIDS, I now have to be more careful about my sexual behavior." Additionally, "I don't have to change anything in my lifestyle because I am not at risk for AIDS."

Summary

The data collected and analyzed for this study have been presented in Chapter IV. Demographic characteristics of the participants were examined. Statistical findings used to answer the research hypotheses and qualitative analysis were presented. Additionally, other pertinent findings were revealed.

Chapter V

The Outcomes

The number of adolescents acquiring AIDS has increased yearly since AIDS was discovered in the United States in 1981 (Center for Disease Control, 1990). As the number of adolescents acquiring AIDS increases, the important role of educational interventions to increase knowledge, alter attitudes, and change high-risk behaviors becomes more significant as a viable means of reducing the incidence of AIDS. However, few studies have evaluated the effects of AIDS education upon the high school student.

The purpose of this research study was to ascertain the effects of a teaching program about AIDS prevention on the knowledge, attitudes, and behaviors of high school students. Orem's Self-Care Theory was used to guide this quasi-experimental study.

This chapter includes a discussion of the findings of the study. The conclusions, implications, and recommendations which evolved from these findings also are presented.

Summary of Significant Findings

The sample consisted of 49 twelfth-grade students and was drawn from two high schools in rural Northeast Mississippi. Fifty-one percent of the subjects were female and 49% were male, while 88% were white and 12% were black. The mean age was 17.9 years. The subjects were predominantly from middle-income families.

The Student Health Survey was used to assess the knowledge, attitudes, and behaviors of the two groups of high school students. Descriptive analysis and the t test were utilized to analyze the data. The experimental group knowledge scores increased from 15.04 questions answered correctly on the pretest to 19.78 questions correctly answered on the posttest. Since $t(49) = 10.71$, $p = .001$, Hypothesis 1 was accepted as posttest scores were significantly higher for students who attended the AIDS prevention class.

The experimental group's attitude scores did not change significantly for tolerance of people with AIDS, fear of AIDS, AIDS, and safe intentions or dangerous risk to life, in general, after attending the AIDS prevention class. Therefore, Hypothesis 2 was rejected. The third hypothesis was not tested due to the time constraints. However, pretest scores determined that students engaged in high-risk sexual behaviors.

Additional findings revealed that 41% of the participants believed that, because of AIDS, love was scarier. Subjects (94%) indicated that if their parents knew they were sexually active, they would want them to use condoms. Forty-one percent verified that their family had talked to them about AIDS. Two questions analyzed the students' opinions about AIDS. The participants responded by expressing that AIDS was upsetting because there was no cure, innocent people die from AIDS, and some individuals with AIDS spread the disease with no regard about infecting others. Secondly, the students' most frequent response was "Because of AIDS, I now have to be more careful about my sexual behavior." Also, many of the participants did not feel the need to change anything in their lifestyles, because they did not consider themselves at risk for AIDS.

Discussion of Significant Findings

The important role that educational programs provide toward increasing knowledge and dispelling misconceptions about AIDS has gained worldwide attention from health care providers, professional educators, and the media. To date, only one study was found that evaluated the effects of a teaching program about AIDS on the knowledge, attitudes, and behaviors of high school students (Brown, Barone, Fritz, Cebollero, & Nassau, 1988). These researchers concluded that students who participated in an educational program scored significantly higher on the knowledge portion of the

survey after attendance. Even though the two groups in the current study had statistically compatible pretest scores, the experimental group's knowledge of AIDS preventive issues increased to a near perfect score on the posttest. This current study's findings support Brown et al.'s conclusions as a profoundly significant increase in knowledge was also ascertained in this experimental group, after education. Both studies used the same questionnaire; however, some revisions were made by the instrument developer prior to administration of the survey in this study. Also, the posttest administration was different.

In this study the evaluation was done immediately after the educational program, while the posttest in the Brown et al. study was administered 3 weeks after the educational program. These procedural differences may account for the present experimental group's significant scores on knowledge about AIDS. The Brown et al. study in which only five questions were answered correctly by more than 90% of the students contrasted with 17 questions answered correctly by 100% of the students in this present study. Students today know more about AIDS than students in the earlier study. This conclusion may be influenced by other factors, such as an increased awareness of health issues from the media coverage about the AIDS epidemic.

Attitudes about AIDS tolerance and intention to alter behavior had received the attention of several

investigators. However, only Brown et al. (1988) evaluated the treatment of an educational program on the attitudes of high school students. The high school students in this current study had an increase in knowledge, but their attitudes about AIDS did not change significantly. This finding supports Brown et al. (1988) who determined that although students' knowledge level improved significantly, their attitudes about AIDS were only marginally changed.

This researcher proposed that attitudes are not necessarily altered by increased knowledge, but may be influenced by religious, cultural, and ethnic beliefs. Therefore, future research studies should focus on the relationship of religious, cultural, and ethnic beliefs and attitudes of high school students. Additional influences on the students' attitudes toward AIDS may be attributed to the social stigma that encourages distancing one's self from AIDS issues and people with AIDS. Also, there exists uncertainty about scientific discoveries that are constantly being presented regarding the transmission of the human immunodeficiency virus.

The students in this present study indicated that they were more fearful of AIDS than the group in the study by Brown et al. (1988). This increased fear may again be a result of the media coverage and increased public awareness of the AIDS epidemic. Another factor that may have increased these adolescents' fear of AIDS could be the fact

that AIDS has entered into all groups of our society within recent years. Therefore, the researcher concluded that an AIDS educational prevention program over an extended time may change attitudes toward AIDS issues in the adolescent population.

The analysis of high school students' sexual behaviors prompted the researcher to conclude that students engage in high-risk sexual practices. This conclusion was ascertained after pretest results indicated that subjects would have intercourse without protecting themselves against AIDS and a posttest question to which students expressed an intent not to protect themselves.

Even though subjects' behavioral practices were high-risk, their total behaviors scores were lower than the subjects in the study conducted by Brown et al. (1988). This finding can be attributed to the fact that IV drug usage, alcoholic intoxication, and sexual behaviors were calculated as a single high-risk score. Since the adolescents in the present study did not indicate any IV drug usage, their total scores were lower; however, their sexual practices were more high-risk than were the sexual behaviors of the students in the study by Brown et al.

Additional insight was gained into the attitudes of high school students by means of two open-ended questions. These findings indicated that adolescents are concerned about finding a cure for AIDS. Also, adolescents were

empathetic toward individuals who spread the AIDS virus with no regard for infecting others. These opinions were possibly formed from the individuals' religious backgrounds and the media's influence on this adolescent population. However, this supposition could not be supported or refuted, since no studies were found that evaluated influences on opinions.

The second open-ended question provided an overwhelming response from the students. The consensus response was that because of AIDS, they have to be more careful about their sexual behaviors. However, many of the students did not feel that they should change anything in their lifestyles, because they were not at risk for contracting AIDS. This response was considered by the researcher as a developmental deficit related to the fact that adolescents believe they are immortal and will not contract AIDS. This assumption was based on the common response, "I have only one sex partner and that partner does not have AIDS." This finding that adolescents feel immortal and not personally worried about their risk from AIDS was supported by studies by Brown et al. (1988), Center for Disease Control (1990), and Price et al. (1988).

Orem's (1980) Self-Care Theory was tested for applicability to this adolescent sample. The Self-Care Theory reflects the adolescent's ability as self-care agent to regulate the environment to promote, sustain, maintain,

or restore integrated functions under stable or changing conditions. This ability was demonstrated by the sample's awareness of self-care practices necessary to reduce their acquisition of the AIDS virus.

Additionally, Orem's (1980) universal requisites were reflected in the choices which involved managing events that would adversely affect their development. These choices were affected by the sample's knowledge, or lack of knowledge, attitudes, and behaviors regarding AIDS transmission. The developmental requisite involved in the human developmental processes of these adolescents could be related to actual knowledge deficits prior to the teaching session regarding the transmission of AIDS and their level of achievement after the session. Also, some preconceived negative attitudes and high-risk behaviors continue to be identified as self-care deficits.

The researcher also utilized Orem's (1980) supportive-educative nursing system to deliberately impact the subjects' knowledge level, attitudes, and behaviors regarding AIDS prevention. This intervention was implemented by providing them facts with which to make informed decisions and ultimately reduce their risk for contracting AIDS. The AIDS prevention program also was presented to enforce decision-making and communication skills, increase resistance to peer pressure persuasions, and promote a sense of self-efficacy and self-esteem.

Discussion of Additional Significant

Findings

The students' sexual behaviors were evaluated to determine risk for AIDS. These findings indicated that 82% of the group had engaged in sexual intercourse, and 18% of the group had never had sexual intercourse. These findings were significantly higher than the findings in the previous study by Brown et al. (1988) where 32% of students reported that they had engaged in sexual intercourse. This higher percentage of sexually active adolescents may provide insight into the reason Mississippi has the highest teenage pregnancy rate in the nation. Also, 24% of the control group and 33% of the experimental group reported to have engaged in sexual intercourse within the last month. Seventy-five percent of the control group and 88% of the experimental group had indicated that they did not use a condom during that time. These findings are significantly higher for no condom usage than the 24% who had used condoms during sexual intercourse in the study by Brown et al. (1988). This finding may imply a developmental deficit as this sample may not consider themselves at risk for acquiring AIDS, or the lack of acceptance of condoms during sexual intercourse. Another factor may be the existence of a culturally seeded inability to discuss intimate sexual preferences between members of the opposite gender.

The majority of students did not talk with their families about AIDS. However, the importance of family discussion of AIDS has been supported by several studies, such as Brown et al. (1988), Brown et al. (1990), and Schvaneveldt et al. (1990). These researchers postulated that schools are only one of many settings in which adolescents learn and parents (who themselves must be educated) should be capable and responsible for educating their adolescents. Another important finding was that 94% of the participants indicated that their parents would want them to use condoms if they knew they were sexually active. Therefore, perhaps, with continued educational reinforcement more adolescents would abstain from sexual intercourse, or buy and use condoms to reduce their risk of acquiring AIDS.

Another issue to note is the sample's annual income which was significantly higher than the estimated median family income of \$13,186 (in 1988) for residents of Northeast Mississippi. Therefore, the sample had a significantly higher annual family income than the majority of families for this region. However, the sample was similar to the students in the study by Brown et al. (1988) in that both groups of students were predominantly from middle-income families.

Conclusions

This researcher determined that the AIDS education program did improve the knowledge level of high school

students who attended the class. This conclusion is supported by Brown et al. (1988). An increase in knowledge, however, did not change the attitudes of adolescents toward people with AIDS, fear of AIDS, AIDS, and safe intentions or attitudes toward dangerous risk to life, in general. This conclusion corroborates Brown et al.'s study.

The adolescents in this study were more fearful of AIDS than adolescents in a previous study. These students scored less risky for past and recent risk behaviors than the students in the previous study by Brown et al. (1988). However, responses to question post-educational session indicated this sample would continue to practice high-risk behaviors.

Students in this sample were found to be empathetic toward innocent people dying from AIDS and angry toward individuals who spread the AIDS virus with no regard for infecting others. Adolescents are also concerned about finding a cure for AIDS.

Additional findings indicated that because of AIDS, adolescents indicated they must be more careful of their sexual behaviors. However, many of the students expressed no desire to change anything in their lifestyle, because they felt they were not at risk for contracting AIDS. With this factor in mind, the researcher concluded that AIDS prevention programs and adolescent behavioral patterns should be evaluated over a longitudinal period of time to

assess the students' behavior changes toward adopting safer behaviors. Since no research has addressed these suppositions, the results must be interpreted with caution.

Another major conclusion derived from the findings was that adolescents indicated their parents would want them to use condoms, if their parents knew they were sexually active. The importance of family discussion about AIDS is corroborated by Brown et al. (1988), Brown et al. (1990), and Schvaneveldt et al. (1990).

Finally, the researcher determined from the findings of this study that Orem's (1980) Self-Care Theory is applicable to the self-care needs of an adolescent sample. Additional conclusions were that adolescents do exhibit self-care deficits, developmental requisites, and therapeutic self-care demands regarding AIDS and AIDS prevention. Also, the supportive-educative nursing system was found to be helpful to assist the students through support, guidance, provision of a developmental environment, and teaching to increase knowledge, as a prerequisite for attitude and behavior change.

Implications for Nursing

A number of implications for nursing science were derived from this study. Implications are suggested for research, theory, practice, and education.

Research. Few studies have evaluated the effects of a teaching program about AIDS prevention on the knowledge,

attitudes, and behaviors of high school students. Therefore, the findings of this study suggest that more research effort is needed to gain greater insight into the effects of educational programs on these variables. Future research should include more detailed self-report measures over a longer span of time and assess the impact of AIDS programs on high-risk behaviors and attitudes. The need to develop valid and reliable research instruments appropriate for identifying high-risk behaviors for IV drug usage and sexual behaviors as separate indicators also emerged from this study. The effects of an AIDS prevention program on the knowledge, attitudes, and behavior of high school students continue to be fertile ground for research by the family nurse practitioner. Also, the findings of this study contribute to existing knowledge regarding knowledge, attitudes, and behaviors of high school students toward AIDS and AIDS prevention.

Theory. Nursing theory is tested through research. Therefore, the Orem Self-Care Theory must be tested in future research studies to provide new evidence of the applicability of the Orem Self-Care Theory within other adolescent populations. The Orem Self-Care Theory should also be tested in other health care areas, as well as additional AIDS prevention studies in other age groups of high school students.

Practice. In providing holistic primary care for adolescents, nurses must acknowledge the important role of a careful history and physical assessment. With the findings of this study in mind, the importance of an accurate sexual history cannot be overemphasized. Also, assessment of the high-risk behaviors of adolescents is an essential component when planning care for this age group. This plan of care must include appropriate counseling to reduce the risk of AIDS transmission and the potential for sexually transmitted diseases and pregnancy. Another area of emphasis for practice is the encouragement of preventive health care by the adolescent population. The adolescent often is seen for primary care, and the need for preventive care for the adolescents is often overlooked by this age group.

Education. As the number of AIDS cases continues to increase, it is essential that nurses today be prepared to respond to the needs of adolescents and individuals in all age groups regarding AIDS and AIDS prevention measures. The findings of this study demonstrate the importance of enhancing nursing curricula to include an emphasis on AIDS prevention program.

Recommendations

Based on the findings of this study, the following recommendations are made for future research in nursing.

1. Replication of the study with a larger sample representing additional socioeconomic and ethnic groups.

2. Development of valid and reliable research instruments for self-report, subjective measurement of high-risk behaviors of adolescents.

3. Conduction of more research using the Orem Self-Care Theory for Nursing as a framework for examining the effects of an AIDS prevention program on the knowledge, attitudes, and behaviors of other age groups of high school students.

4. Conduction of research specific to the longitudinal effects of an AIDS prevention teaching program on the knowledge, attitudes, and behaviors of high school students.

5. Conduction of research specific to the development of interventions to alter attitudes and reduce high-risk behaviors of adolescents regarding AIDS.

6. Conduction of research with parents, educators, and role models to assess their knowledge, attitudes, and behavior toward AIDS and AIDS prevention.

REFERENCES

References

- Brown, L. K., Barone, V. J., Fritz, G. K., Cebollero, P., & Nassau, J. H. (1988). AIDS education: The Rhode Island experience.
- Brown, L. K., Nassau, J. H., & Barone, V. J. (1990). Differences in AIDS knowledge an attitude by grade level. Journal of School Health, 60, 270-275.
- Center for Disease Control. (1990). HIV/AIDS surveillance report. Bio-Data Corporation AIDS/HIV Record 1988, 2(19), 1-22.
- Fawcett, J. (1989). Analysis and evaluation of conceptual models of nursing (2nd ed.). Philadelphia, PA: F. A. Davis.
- Marriner-Tomey, A. (1989). Nursing theorists and their work (2nd ed.). St. Louis, MO: C. V. Mosby.
- Mississippi Statistical Abstract. (1988). Mississippi State, MS: Division of Business Research, College of Business and Industry.
- Orem, D. (1980). Nursing: Concepts of practice (2nd ed.). St. Louis, MO: McGraw-Hill.
- Polit, D., & Hungler, B. (1987). Nursing research: Principles and methods (3rd ed.). Philadelphia, PA: Lippincott.
- Price, J. H., Desmond, S., & Kukulka, G. (1985). High school students' perceptions and misperceptions of AIDS. Journal of School Health, 55, 107-109.
- Schvaneveldt, J. D., Lindauer, S. L., & Young, M. H. (1990). Children's understanding of AIDS: A developmental viewpoint. Family Relations, 39, 330-335.
- World Health Organization. (1987). HIV-AIDS surveillance report. Bio-Data Corporation, AIDS/HIV Record 1986, 4(18), 1-14.

APPENDICES

APPENDIX A

APPROVAL OF COMMITTEE ON USE OF HUMAN
SUBJECTS IN EXPERIMENTATION



MISSISSIPPI
UNIVERSITY
FOR WOMEN

Columbus, MS 39701

Vice President for Academic Affairs
P.O. Box W-1603
(601) 329-7142

March 21, 1991

Ms. Deborah H. Whitehead
c/o Graduate Nursing Program
Campus

Dear Ms. Whitehead:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed study on "The Effects of a Teaching Program About AIDS Prevention on the Knowledge, Attitudes, and Behaviors of High School Students."

I wish you much success in your research.

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas C. Richardson".

Thomas C. Richardson
Vice President
for Academic Affairs

TR:wr

cc: Dr. Blow
Dr. Hill
Dr. Barrar
Dr. Rent

APPENDIX B
STUDENT HEALTH SURVEY

STUDENT HEALTH SURVEY

This questionnaire is for students. It asks about what you know and how you feel about AIDS. It is anonymous and confidential, so don't put your name anywhere on the questionnaire or answer card.

INSTRUCTIONS: Mark your answers on the ANSWER CARD — please **DO NOT WRITE ON THIS PAPER**. Use a #2 pencil only, mark in the square completely, and erase all stray markings. Answer **EVERY** question, but give only **ONE** answer per question.

PART I: DEMOGRAPHICS

1. What form are you filling out? (form code can be found in upper right hand corner of this page)
2. How old are you? (mark the correct box on the answer card)
3. What are the last two numbers of your telephone number:
 - a) XXX - XX_X
 - b) XXX - XXX_
4. What is your sex?
 - (1) Male
 - (2) Female
5. What is your race:
 - (1) White (non-Hispanic)
 - (2) Black (non-Hispanic)
 - (3) Hispanic
 - (4) Asian
 - (5) Other
6. What is the highest grade you expect to complete in school?
 - (1) may not finish high school
 - (2) will finish high school
 - (3) will get 2 year or technical degree
 - (4) will get college degree
 - (5) will get a degree beyond college
7. Have you had a class about AIDS during this school year?
 - (1) Yes
 - (2) No
 - (3) I don't remember
8. Have you filled out this questionnaire during this school year?
 - (1) Yes
 - (2) No
 - (3) I don't remember

(turn page to continue questionnaire)

PART II: KNOWLEDGE

INSTRUCTIONS FOR THIS SECTION:

Mark a (T) if you think the statement is true
a (F) if you think the statement is false
a (?) if you are not sure if it is true or false

1. You could get AIDS from having your blood taken by a nurse.
2. You can get AIDS by touching or being near a person with AIDS.
3. AIDS is caused by the same virus that causes venereal disease (VD).
4. You can get AIDS by having sexual intercourse with someone who has the AIDS virus.
5. The AIDS disease is caused by the Human Immunodeficiency Virus.
6. People with AIDS may get cancer because the AIDS virus harms the body's immune system.
7. You can get AIDS from a mosquito bite.
8. Only condoms made of latex are effective against the transmission of the AIDS virus.
9. You can get AIDS by sharing needles when shooting street drugs (IV drug use).
10. If a person has the AIDS virus, it is still safe to kiss them on the lips, as you would kiss a friend or relative.
11. A baby could be born infected with the AIDS virus if its mother is infected with the virus.
12. The only people at risk for the AIDS virus are homosexuals, IV drug users and people who received blood transfusions before we knew about the AIDS virus.
13. When it comes to sex, the most effective way to prevent the spread of AIDS is to avoid sexual intercourse.
14. There is a screening test that tells you if donated blood is infected with the AIDS virus.
15. An effective vaccine that will prevent AIDS recently has been developed.
16. You could get AIDS by using the comb or brush of someone who is infected with the AIDS virus.
17. AIDS can be cured if treated early.
18. You can get AIDS from someone who is infected with the AIDS virus, even if that person has no symptoms of AIDS.
19. A birth control pill will protect you against AIDS.
20. If you get the AIDS virus you are likely to get sick from AIDS within the next six months.

PART III: ATTITUDES

INSTRUCTIONS FOR THIS SECTION:

Mark the answer which best says how you feel.
 Mark (YES) if the statement is "really true" for you.
 Mark (ST) if the statement is "sort of true" for you.
 Mark (NO) if the statement is "NOT TRUE" for you.

1. I feel that people with AIDS get what they deserve.
2. I think that kids who have the AIDS virus should be kept out of school.
3. I'm afraid of getting AIDS, so I will avoid sex.
4. Even knowing about AIDS, I might shoot drugs with a needle.
5. I would feel okay touching someone who has AIDS.
6. If I were to have sex, I would use a condom everytime, or have my partner use one, to protect myself from getting AIDS.
7. Homosexuals should be blamed for the AIDS problem.
8. I am very nervous about AIDS.
9. I would feel okay going to the home of someone with AIDS.
10. I would swim in a pool even if I knew a person with AIDS was swimming in it too.
11. Because of AIDS, falling in love is scarier.
12. My family has talked about AIDS.
13. I am worried that I already might have AIDS.
14. I would worry about getting AIDS from kissing someone.
15. I would worry about getting AIDS from having a nurse take my blood.
16. I would be afraid of getting AIDS if a kid with AIDS was in my classes.
17. I feel confident that using a latex condom during sexual intercourse would protect me from AIDS.
18. If my parents knew I was sexually active, they would want me to use a condom to protect myself from getting AIDS.
19. Those of my friends who have sex always use condoms to avoid getting AIDS.
20. Since it takes so long to get sick from the AIDS virus, I don't need to worry much because they will probably find a cure by then.
21. Honestly, if I were sexually active, I probably would have intercourse without protecting myself against AIDS.

INSTRUCTIONS FOR QUESTIONS 22 - 26

We are interested in how kids understand dangers other than AIDS. Mark the answer which best says how you feel about dangers in the rest of your life.

22. I often do things without worrying about what will happen to me.
23. I do things my friends don't dare to do.
24. It is dumb to do dangerous things.
25. I frequently do dangerous things with my friends.
26. Driving real fast gives me a thrill.

PART IV: BEHAVIOR

FOR QUESTIONS 1 TO 3

Please indicate at what age you have done any of the following. Remember, these answers are confidential and anonymous. Mark the correct age on the answer card.

1. How old were you when you first had sexual intercourse?
never ≤12 13 14 15 16 17 18
2. How old were you when you first drank alcohol?
never ≤12 13 14 15 16 17 18
3. How old were you when you first smoked a cigarette?
never ≤12 13 14 15 16 17 18

FOR QUESTIONS 4 TO 11

Please answer whether any of the following are true for you. Remember, these answers are confidential and anonymous. Mark (YES) or (NO) on the answer card.

4. Have you ever in your life used a needle to shoot street drugs?
5. Have you ever in your life driven a car while drunk?
6. Have you recently had sexual intercourse with anyone (in the last month)?
7. Have you recently had sexual intercourse with anyone without using a condom (in the last month)?
8. Have you recently bought a condom (in the last month)?
9. Have you recently used a condom or had your partner use a condom (in the last month)?
10. Have you recently used a needle to shoot any street drug (in the last month)?
11. Have you recently gotten drunk (in the last month)?

ON THE BACK OF YOUR CARD, PLEASE ANSWER THE FOLLOWING QUESTIONS:

1. "What upsets me most about AIDS is . . ."
2. "Because of AIDS, I now have to . . ."

APPENDIX C
PERMISSION TO USE TOOL



RHODE ISLAND HOSPITAL/PROVIDENCE, RHODE ISLAND 02903

DEPARTMENT OF PSYCHIATRY

Ms. Deborah Whitehead
Route 5 Box 203
Booneville, MS
38829

May 1, 1991

Dear Ms. Whitehead,

This letter is to confirm that you have received permission to administer the Student Health Survey, developed by Dr. Larry Brown, Rhode Island Hospital for your research project.

We do ask researchers to cite us as a reference in their research reports and send us a copy of their write-up upon completion.

Thank you for your interest in our survey.

Sincerely yours,

Allan J. Brenman, Ed.D.
Staff Psychologist
Rhode Island Hospital
Child and Family Psychiatry



BROWN UNIVERSITY

DIVISION OF BIOLOGY AND MEDICINE

DEPARTMENT OF PSYCHIATRY AND HUMAN BEHAVIOR

APPENDIX D
AGENCY CONSENT FORM

Memorandum of Agreement Concerning
Research Study

Title of Study:

The Effects of a Teaching Program About AIDS Prevention
on the Knowledge, Attitudes, and Behaviors of High
School Students

Name of Agency:

Myrtle Attendance Center

Study Discussed with and Explained to:

Paul Nolen, Principal

The nature and purpose of this study have been defined.
This teaching program has been approved for inclusion in the
regular curriculum of the AIDS prevention teaching program.
I understand that all information will be kept confidential
and that this institutional may withdraw at any time during
data collection.

Myrtle Attendance Center

By _____
Principal

Researcher

Memorandum of Agreement Concerning
Research Study

Title of Study:

The Effects of a Teaching Program About AIDS Prevention
on the Knowledge, Attitudes, and Behaviors of High
School Students

Name of Agency:

Ingomar Attendance Center

Study Discussed with and Explained to:

Johnny Weeden, Principal

The nature and purpose of this study have been defined.
This teaching program has been approved for inclusion in the
regular curriculum of the AIDS prevention teaching program.
I understand that all information will be kept confidential
and that this institutional may withdraw at any time during
data collection.

Ingomar Attendance Center

By _____
Principal

Researcher

APPENDIX E
PARENT CONSENT FORM

Dear Parent,

I am a registered nurse and graduate nursing student at Mississippi University for Women. As a part of my studies I am conducting research on AIDS prevention and the knowledge of high school students. This research will help educators have a better understanding of the effects of a teaching program about AIDS prevention on knowledge, attitudes, and behaviors of high school students. I would like your permission to administer a questionnaire to your child during regular school hours. The questionnaire will take a total of about 30 minutes.

In order for your child to be a participant, I need to be sure that I have your permission. All information shared in the survey will be anonymous and kept strictly confidential. This questionnaire will not reflect on your child's school grade and will be used for the purpose of this research. No names will be used, and the information will be reported as a group. Your child's participation is completely voluntary and they may withdraw from the study at any time.

Sincerely,

Deborah Whitehead, RN

I have read the above letter. I understand the purpose of the study and the conditions of my child's participation.

Date

Signature of Parent

Name of Student

APPENDIX F
STUDENT CONSENT FORM

Dear Student,

I am a registered nurse and graduate nursing student at Mississippi University for Women. As a part of my studies I am conducting research on AIDS prevention and the knowledge of high school students. This research will help educators have a better understanding of the effects of a teaching program about AIDS prevention on knowledge, attitudes, and behaviors of high school students. I would like your permission to administer a questionnaire to each of you during regular school hours. The questionnaire will take a total of about 30 minutes.

In order for you to be a participant, I need to be sure that I have your permission. All information shared in the survey will be anonymous and kept strictly confidential. This questionnaire will not reflect on your school grade and will be used for the purpose of this research. No names will be used, and the information will be reported as a group. Your participation is completely voluntary and you may withdraw from the study at any time.

Sincerely,

Deborah Whitehead, RN

I have read the above letter. I understand the purpose of the study and the conditions of my participation.

Date

Signature of Student

APPENDIX G
AIDS PREVENTION PROGRAM

AIDS Prevention Program

- I. Experimental Group
 - A. Introduction of Program's Purpose
 - B. Request for Student Participants
 - C. Explanation, Distribution, and Collection of Student Consent Forms
 - D. Administration of Pretest Utilizing Student Health Survey
 - E. Video Presentation "Sex, Drugs, and AIDS"
 - F. Administration of Posttest Utilizing Student Health Survey
 - G. Discussion Session
 - H. Conclusion of Program
- II. Control group
 - A. Introduction of Program's Purpose
 - B. Request for Student Participants
 - C. Explanation, Distribution, and Collection of Student Consent Forms
 - D. Student Health Survey administration
 - E. Discussion Session
 - F. Conclusion of Program