Knowledge And Attitudes About Hiv/Aids In An Adolescent Population

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KNOWLEDGE AND ATTITUDES ABOUT HIV/AIDS
IN AN ADOLESCENT POPULATION

by

TRACEY HICKMAN

A Thesis
Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Nursing
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Knowledge and Attitudes About HIV/AIDS
in an Adolescent Population

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Abstract

Adolescents are at an increased risk for contracting the human immunodeficiency virus (HIV) as evidenced by increased infection rates and the acquired immunodeficiency syndrome (AIDS) related deaths within this age group. The focus of this study was to assess the knowledge levels and attitudes of adolescents about HIV/AIDS. The theoretical framework that guided this study was Elkind (1993). Elkind (1993) believed that adolescents make decisions on such concepts as the personal fable and imaginary audience regardless of their knowledge level. Two research questions were addressed in this descriptive study: What are the knowledge levels of adolescents about HIV/AIDS? And what attitudes do adolescents have about HIV/AIDS? A convenience sample consisted of 78 students attending high school in the southeastern region of the United States. The Student Health Survey, developed by Brown (Brown, 1989), was the instrument utilized in this study. Data analysis revealed that 100% of the students surveyed knew that the AIDS virus could be transmitted by
sexual intercourse and intravenous drug (IV) drug use. Almost 95% of the participants knew that the AIDS virus could be transmitted perinatally. Greater than 89% of the participants knew that donated blood could be screened for the AIDS virus. Over 60% of the participants said that AIDS could be contracted from a nurse taking blood. Less than 13% of the sample knew that only latex condoms were effective against the transmission of the AIDS virus. Approximately 51% of the students knew that AIDS was not the same organism which causes venereal disease. Attitudes among adolescents about HIV/AIDS varied. Greater than 50% of the adolescents surveyed said they would feel comfortable touching, kissing, or going to the home of someone with AIDS. Approximately 82% of the participants said that kids with AIDS should attend school. The researcher concluded that the AIDS education program in the participating high school had addressed the four main modes of transmission of HIV/AIDS. However, many adolescents had incorrect knowledge about other basic information regarding HIV/AIDS. Implications for nursing include the need for additional education and validation of knowledge in the adolescent population to prevent the
transmission of HIV/AIDS. These findings emphasize the need for further research in the adolescent population focusing on how knowledge about HIV/AIDS impacts behaviors.
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Chapter I
The Research Problem

Acquired immunodeficiency syndrome (AIDS) is the sixth leading cause of death in adolescents ages 16 to 24 years with infection rates increasing in this population faster than any other age group (Journeyworks, 1997). Adolescents are at an increased risk for contracting the human immunodeficiency virus (HIV), the virus that causes AIDS, as evidenced by infection rates reported by the Centers for Disease Control (CDC) within this age group (CDC, 1997). In an effort to curtail this dilemma, many states have mandated AIDS education to help prevent the spread of HIV in the adolescent population by increasing adolescents’ knowledge levels of how HIV is transmitted. The supposition is that with increased knowledge levels of how HIV is transmitted and prevented, adolescents should be able to make better decisions about sexual behavior and intravenous (IV) drug use (Crosby, 1996).

According to the National Commission on AIDS (1994), information about HIV/AIDS must be presented in
conjunction with exploring the attitudes and values of adolescents to expect behavioral changes. Adolescents' attitudes about health care are often contradictory to that of health care providers and hospitals (LaChance, Lamy, Macaulay, Malus, & Vanasse, 1987). In a study conducted by LaChance et al. (1987), 60% to 80% of the adolescents surveyed were interested in discussing sexually transmitted diseases with their physician, but only 18% of those surveyed actually had this discussion with their physician. Adolescents often want to discuss issues such as HIV/AIDS or other sexually transmitted diseases, but because of shyness they wait for the health care provider to initiate this discussion. Health care providers who address issues such as HIV/AIDS in a preventive approach could help adolescents effectively deal with life's difficult situations (LaChance et al., 1987).

Currently, there is no cure for HIV/AIDS; therefore, prevention is the best defense against contracting the virus. With HIV-positive individuals being asymptomatic for up to 10 years, the virus can be transmitted unintentionally. This transmission increases the number of cases of HIV infection (National Commission on AIDS,
1994). However, few follow-up studies have been implemented to determine the impact of HIV/AIDS education on adolescents’ knowledge levels and attitudes. Therefore, the focus of this descriptive study was to assess knowledge and attitudes of adolescents about HIV/AIDS.

Establishment of the Problem

According to the CDC (1997), there were 604,176 cases of AIDS reported in the United States with 511,934 being male and 92,242 being female. Further examination of these statistics revealed that there were 2,953 cases of AIDS reported in ages 13 to 19 years. Because of the possibility that the individual contracted HIV as an adolescent, it is important to address the statistics for the incidence of AIDS in ages 20 to 29 years, which totaled 107,281 cases. In addition, these statistics reflect only the cases that are reported. Many cases are still unreported and even undiagnosed (CDC, 1997).

The Center for AIDS Prevention Studies and the Harvard AIDS Institute (Centers for AIDS Prevention Studies) (1998) estimated that half of all new HIV infections occur among people under the age of 25 years. Every hour at least two Americans under the age of 25 contract HIV. Adolescents who participate in high-risk
behaviors are at risk for contracting HIV, especially adolescents of color, adolescent gay males, and adolescent women who have sex with HIV-positive males. These individuals need preventive education that directly addresses their lives, attitudes, and sense of self-worth (Centers for AIDS Prevention Studies, 1998).

AIDS is an illness that is caused by HIV. The defect in the immunologic response is characterized by the virus making T4 lymphocytes ineffective (Thomas, 1989). HIV can be transmitted through blood and semen (Price & Wilson, 1992). Thus, sexual intercourse and sharing needles used to inject illicit drugs are common ways to transmit HIV in the adolescent population. The best methods to decrease the chance of transmitting HIV is the use of condoms during sexual intercourse and avoiding IV drug use. Individuals infected with HIV can be asymptomatic for up to 10 years resulting in no outward physical signs of illness. Because of this time frame, it is likely that many individuals diagnosed as HIV positive in their 20s have been infected as adolescents. These individuals perpetuate the risk of transmitting and contracting HIV since they appear to be healthy and are unaware of their health status (Price & Wilson, 1992).
HIV/AIDS is not an epidemic only in the United States, but worldwide (AIDS Education Global Information System [AEGIS], 1998). Each year, 2.6 million adolescents acquire HIV worldwide. Every minute, five individuals 10 to 24 years of age contract HIV worldwide. The number of HIV infections is estimated to be much higher than the official statistics. Until 1997 the main method of transmission was sexual, but transmission through IV drug use has increased. The World AIDS Campaign is striving to promote participation of adolescents in HIV prevention and raise awareness of the HIV epidemic (AEGIS, 1998).

Rising HIV/AIDS infection rates prompted many states to mandate AIDS education in schools. This education was a means of helping adolescents understand HIV/AIDS and how it is transmitted. However, many schools do not include AIDS education in their curricula (Crosby, 1996). Ignorance of STD transmission is the main reason adolescents 15 to 19 years of age have a higher risk of contracting STDs than any other age group. This is attributed to lack of information provided in school-based sex education classes. Adolescents are at the mercy of parents, teachers, and politicians who withhold information about HIV/AIDS which is desperately needed in
order to make healthy decisions. Frank discussions about sexual behavior is avoided in many schools with the hope that the HIV/AIDS epidemic will somehow disappear (Kantrowitz, 1992).

Experts believe that knowledge would decrease HIV/AIDS rates, but Crosby (1996) stated that “knowledge alone is not enough to produce a change outcome” (p. 186). Adolescents feel a sense of invincibility to harm and are not motivated to change high-risk behaviors. Crosby (1996) believed that adolescents must believe they are vulnerable to the possibility of contracting HIV/AIDS before motivation to avoid high-risk behaviors will occur. To create a sense of vulnerability, adolescents must first be knowledgeable about the disease. This is done by presenting basic information along with facts and figures on HIV/AIDS, including the population that has HIV and the resulting death rates from HIV/AIDS. After this information has been presented, the adolescent must either accept or deny this information. The vulnerability to this information could encourage the transition from an intellectual level to an emotional level. The transition to an emotional level regarding HIV/AIDS could motivate a change in behavior. Adolescents who have been exposed to
the effects of HIV/AIDS by a close contact are more emotionally motivated and are more likely to change their behavior (Crosby, 1996).

Along with the attitude of invincibility, adolescents are influenced by peer pressure to conform. This need to conform can affect healthy decision making. Adolescents may be more likely to participate in unhealthy risk behaviors, such as unprotected sexual intercourse or IV drug use, because of these attitudes. Experts have also identified loss of hope as an attitude that impacts adolescents’ behaviors. This loss of hope is more common in adolescents who are socioeconomically disadvantaged because they are unable to project themselves into the future, thus they have no reason to avoid high-risk behaviors (National Commission on AIDS, 1994).

Education should be coupled with the opportunity to explore values and attitudes about HIV/AIDS. Educational programs aimed toward the prevention of HIV/AIDS should help the adolescent assess their risks and options regarding sexuality. Once the adolescent has established his or her values and attitudes about HIV/AIDS, he or she is more likely to act on these beliefs. Adolescents who possess strong positive sexual values and attitudes are
more likely to be responsible in regard to sexually transmitted diseases (National Commission on AIDS, 1994).

With the AIDS epidemic, sex education classes have become more common in the school curriculum. There is no controversy about whether sex education is needed in the schools, but it is questionable whether the information provided is useful to the age group for whom it is being presented. Often it is because sex education classes are based on adult anxieties about sexual behavior and not on adolescent concerns. The effectiveness of school-based sex education classes remains questionable because of different views on the definition of healthy sexuality. Sex education cannot be taught without saying that sex is natural, but sex education cannot teach respect and integrity for the body. Yet with AIDS being a life and death matter, the discussion of sexuality must be more explicit and include the use of condoms and other strategies for safe sex (Elkind, 1988).

When the AIDS epidemic began in 1981, it was thought to be a disease that primarily affected homosexuals. This epidemic was first discovered when five homosexual men in Los Angeles reported having a mysterious immune deficiency. The immune deficiency was associated with
pneumocystis pneumonia and other opportunistic infections and was later diagnosed as AIDS. After this report, other cases were reported from elsewhere, which indicated an epidemic. This epidemic was later proven by the isolation of the causative agent in 1983 and serologic testing in 1985 for the virus known as HIV. Education, an effort to prevent the transmission of HIV, did not become a priority until the late 1980s when the virus began to quickly spread to women, children, and heterosexuals. Presently, HIV/AIDS is a common disease that deeply concerns and frightens many Americans (Angell, 1992).

Collins, Holtzman, Kann, Kolbe, and Lowry (1994) believed that the implementation of school-based programs was important as a national effort to improve the health and well-being of adolescents. Yet few studies have been conducted to examine changes over time since HIV/AIDS education has begun in the schools. Collins et al. felt that school-based surveys were useful for assessing educational programs about HIV/AIDS. Research to determine adolescents' knowledge and attitudes about HIV/AIDS is also crucial because of the current cases of adolescents and individuals in their 20s testing positive for HIV (CDC, 1997). This study will assess adolescents' knowledge
and attitudes about HIV/AIDS; therefore, the current AIDS education received in school will be assessed. Using the results of this research, educators and health care providers can adequately plan for future education of adolescents about HIV/AIDS to help decrease the HIV infection rates for this age group.

Significance to Nursing

The family nurse practitioner (FNP) treats many clients in the adolescent population; therefore, there are more opportunities to discuss all health risks, especially HIV, a life-threatening disease with these clients. Many adolescents will not discuss personal issues with parents or teachers but will confide in a health care provider because of the aspect of confidentiality. During the history phase of the visit with an adolescent, the nurse practitioner should also seek information about sexual behavior. This can be accomplished by taking a sexual history, including the number of partners, sexual orientation, and the use of protective devices during sexual intercourse. Based on the information elicited from the sexual history, screening for HIV/AIDS can provide an opportunity for education, thus hopefully decreasing the spread of HIV along with early treatment of the disease.
By accessing this information, the nurse practitioner can adequately screen clients and, when necessary, initiate appropriate interventions, such as treatment and education.

With more adolescents initiating sexual behavior at an earlier age, the nurse practitioner is faced with a larger, younger population at increased risk for contracting HIV. The nurse practitioner must be prepared to address the issue of HIV in the clinic. Education is one of the most important tools the nurse practitioner can use in the prevention of HIV. The nurse practitioner must be knowledgeable about HIV/AIDS to adequately educate adolescents about the transmission and prevention of the disease.

Research in the area of adolescents' knowledge and attitudes about HIV/AIDS will assist health care providers in being informed as to educational needs about HIV, which can be reinforced in the clinic setting. Further research in the adolescent population concerning HIV/AIDS is needed to assess knowledge levels and attitudes that reflect the current trends and increase of the incidence of HIV in this population. Nurse practitioners need to be knowledgeable about adolescents’ knowledge, beliefs, and
attitudes concerning HIV/AIDS so that they can better meet the needs of this population.

Theoretical Framework

The theoretical framework guiding this study was Elkind (1988). Elkind, a child psychologist, is a major advocate for the protection of children, which reflects the theory that children are forced to grow up too soon. Elkind said parents today encourage their children to be mature at an earlier age; therefore, children are unable to cope with issues they often face, placing them in situations that are not healthy. According to Elkind, adolescents need moral guidance, emotional support, and sound rules and values from parents (1993).

Elkind (1993) believed adolescents make decisions based on concepts he described as the "personal fable" and are encouraged in these by the "imaginary audience." The personal fable is the belief that bad things will happen to others and not to that individual. This idea of invincibility causes the adolescent to participate in risk behaviors because they think HIV will not happen to them despite their knowledge level. Elkind (1988) described the imaginary audience as the self-consciousness an adolescent feels because they think everyone knows what they are...
doing and thinking. Because of this self-consciousness, the adolescent makes decisions to please the imaginary audience (Elkind, 1993).

According to Elkind’s theory, others may influence the adolescent’s behavior. This influence by others may make adolescents more at risk for HIV because of their immaturity, sense of invincibility, and need to please others. Elkind found that this type of thinking increases the need for education and prevention. Elkind believed parents should be able to cope with issues such as sexuality, peer groups, and drug and alcohol abuse with their adolescents. This coping allows parents to guide adolescents in a positive direction (Elkind, 1993).

Assumptions

The following assumptions were made for this study:

1. The adolescent population is at increased risk for contracting HIV.

2. Adolescents have received HIV/AIDS education at school.

3. Adolescents make decisions about HIV/AIDS based on the personal fable and imaginary audience.

4. Adolescent subjects will answer questions on the Student Health Survey honestly.
Statement of the Problem

With AIDS being the sixth leading cause of death in the adolescent population, interventions must be initiated to decrease the spread of HIV. Education is one method to help prevent the transmission of HIV/AIDS, which has been mandated in many states. Approximately half of all adolescents by the age of 17 years have had sex (Stapleton, 1997); therefore, knowledge about safer sex practices can help prevent HIV transmission. The research problem was to assess the knowledge and attitudes of adolescents about HIV/AIDS.

Research Questions

This study addressed the following questions:

1. What are the knowledge levels of adolescents about HIV/AIDS?

2. What attitudes do adolescents have about HIV/AIDS?

Definition of Terms

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

Adolescent: Theoretical: an individual of an age between puberty and physical maturity (Kidney, 1993).

Operational: For the purpose of this study, adolescent was
defined as an individual between the ages of 14 and 18 years who attended high school in Grades 9-12 and consented to participate in the study.

**Knowledge level about HIV/AIDS:** Theoretical: an individual’s level of knowing or being well-informed about HIV/AIDS (Kidney, 1993). Operational: Knowledge about HIV/AIDS will be defined by utilizing the data collected by adolescents who participate in this study by completing the Student Health Survey.

**Attitudes about HIV/AIDS:** Theoretical: the opinion or feeling of adolescents about HIV/AIDS. Operational: In this study, attitudes about HIV/AIDS will be measured by the responses given by adolescents who complete the Student Health Survey.

**Summary**

This chapter presented the problem to be researched: What are the knowledge and attitudes of adolescents about HIV/AIDS. The association between HIV/AIDS in the adolescent population and how the nursing community could assist with this problem was established. Elkind’s (1993) Theory of Adolescent Development and how this theory guided the study were explored. Assumptions were outlined,
along with the research questions. Terms were defined as they were used in this research.
Chapter II

Review of the Literature

Based on a review of the literature, many studies have examined knowledge, attitudes, and behaviors of adolescents about HIV/AIDS. Yet, few follow-up studies have been conducted to assess these areas since various educational programs have been implemented in schools, clinics, and communities. With HIV infection rates rising in adolescents and in the second decade of life, it must be assumed that the epidemic continues to spread in this population. Assessment of knowledge is necessary to ascertain whether there are misconceptions in the adolescent population about HIV/AIDS (Bearinger et al., 1997).

Walker (1992) conducted a research study to explore the knowledge, attitudes, beliefs, and associated risk behaviors of suburban adolescents toward HIV/AIDS. The areas targeted were knowledge about the four modes of transmission, information about the HIV organism, the HIV-antibody blood test, and ways of seeking information about
AIDS. Risk behaviors addressed were sexual behavior, past sexual experiences, the use of condoms, and the use of intravenous drugs.

A descriptive design was used to conduct this study. A convenience sample consisted of 152 participants between the ages of 13 and 18 years in Grades 9-12. The sample included 79 girls and 73 boys, with 97% of the adolescents surveyed being white. The instrument used in this study contained a total of 53 questions, 43 focused on knowledge, attitudes, and beliefs about AIDS. Four questions assessed sources of information. The last six questions concerned the frequency of sexual intercourse, drug use, and condom use. Responses included true/false or don’t know, and rank ordered on a scale of 1 to 10 (Walker, 1992).

The questionnaire was administered in a suburban New Jersey high school by the health education teachers as part of their class. Students consented to participate and completed the questionnaire voluntarily with the option to withdraw. Parental consent was obtained at the beginning of the school year. The questionnaires were placed in a sealed box and forwarded to the researchers (Walker, 1992).
The Kruskall-Wallis ANOVA and the Mann-Whitney U Test were used to analyze the data. Knowledge levels were assessed on a scale of 10 to 25 with the median being 21. Seventy-four percent of the students scored 20 or better with over 96% being able to identify the four main modes of transmission. Forty-eight percent of the students did not know that HIV was caused by a different organism than any other SD. Forty-five percent of the students admitted to having sexual intercourse once in their lifetime. Of the males polled, 66% said they had more than one sexual partner and 47% of females answered the same. Ninety-seven percent of the students believed the use of condoms decreased the risk of being infected with HIV, but only 60% of the males participating used condoms during sexual intercourse (Walker, 1992).

Results of the questions regarding information sources revealed that 47.4% of the students had received knowledge about HIV from radio/television, 17% from school, 13.8% from magazines and newspapers, and 2.6% from their parents. Surprisingly, only 5.9% of the students wanted information from their parents, but 75% said they would like to learn more at school (Walker, 1992).
In conclusion, Walker (1992) believed that adolescents have the knowledge necessary for preventing the transmission of HIV. Yet, it was apparent from the sexual behaviors reported by this group that they do not put this knowledge to practical use. Adolescents have the feeling of invulnerability and are known to be risk-takers. Now, the risks include HIV, a universally fatal disease (Walker, 1992).

This study conducted by Walker (1992) is relevant to the current study and supports the need for additional research on adolescents’ knowledge about HIV/AIDS. This is because education has become more widespread in schools and in the media, which has helped to increase knowledge levels. The current research focused on assessing the knowledge and attitudes of adolescents in the rural Southeastern United States in contrast to the research conducted by Walker in a suburban area of New Jersey.

Ashworth, DuRant, Gaillard, and Newman (1992) conducted a similar study to explore the knowledge of high school students and their perceived risk of having AIDS and compared the results to the 1989 research study conducted by the Centers for Disease Control. With only a few states requiring AIDS education in the schools, the
researchers stated that a study about the knowledge level and perceptions of having AIDS was imperative for adolescents in the 90s.

The knowledge level of the students and their perceived chance of acquiring AIDS were the dependent variables. Independent variables included IV drug use and previous education about HIV/AIDS in school. There were 12 HIV/AIDS knowledge questions, four questions concerning IV drug use, and one question about subjects' educational background on the questionnaire (Ashworth et al., 1992).

The 11th and 12th grades at nine high schools were chosen as the accessible population. The sample consisted of 2,483 students, the majority of the students surveyed were either African American or Caucasian. The participants were instructed not to write their names on the questionnaires in order to protect anonymity. The questionnaires were distributed by the homeroom teachers, and the instructions were read aloud to the students prior to completing the questionnaires. The completed questionnaires were placed in a sealed envelope and returned to the researchers (Ashworth et al., 1992).

The questionnaire containing standardized questions was modified from the 1989 CDC Health Risk Survey. Five
questions from the original questionnaire were omitted at the request of the school board who felt these questions could promote sexual intercourse. The researchers did not feel these omitted questions compromised the study since most students answered these questions correctly on the 1989 study. The questionnaire was pretested on adolescents at the university clinic.

Ashworth et al. (1992) found that 97.3% of the students were knowledgeable about the transmission of HIV through IV drug use. Over 17% of the students thought birth control pills would protect them from HIV. Others thought they could contract the virus from toilet seats (24%), insect bites (53%), donating blood (54.4%), and from blood tests (35.1%). Males had a lower level of knowledge than females; African Americans and other ethnic groups had a lower level of knowledge than Caucasians. More than 23% of the students polled thought they could be currently infected with the virus.

The researchers concluded that more education was needed for high school students about HIV/AIDS. Many adolescents were at risk for HIV because of their knowledge level about contracting the virus. Since minorities in this study had a lower level of knowledge,
it was suggested that they should be targeted for education. Ashworth et al. (1992) recommended including education in the public schools starting at a younger age since dropout rates increase in the 11th and 12th grades.

The current study assessed knowledge and attitudes of adolescents regarding HIV/AIDS. Data collected from the current research could provide information on whether enough education on AIDS is being taught in school. This also enabled the researcher to evaluate the current AIDS education program at the school participating in the current study. Ashworth et al. (1992) found that more than 23% of the adolescents surveyed thought they could be infected with the AIDS virus. This is a significant number of adolescents and implies the need for additional research.

A study by Collins, Holtzman, Kann, Kolbe, and Lowry (1994) assessed the effects of AIDS education programs on adolescents. Since public attention has been drawn to the AIDS crisis, more information has become available to the public. With adolescents being exposed to more education about HIV, the researchers believed it was important to find out if this knowledge affected the adolescents' behaviors.
Collins et al. (1994) hypothesized that "greater levels of HIV knowledge would be negatively related to the risk behaviors and that the relationships would not change between the two time periods of 1989 and 1990" (p. 388). The researchers had two independent variables and two dependent variables. Independent variables were whether the adolescents had received knowledge about HIV and if their knowledge was correct. Dependent variables included sexual behavior and drug use. High-risk sexual behavior was defined as having two or more partners in a lifetime. Drug use was described as injecting illicit drugs.

This study by Collins et al. (1994) was a comparison between two descriptive correlational studies. In both 1989 and 1990, probability sampling was used in Grades 9-12 in public and private schools in the United States, Puerto Rico, and the Virgin Islands. Both surveys were conducted in the spring semesters of 1989 and 1990. Schools were randomly selected along with one or two classes from each grade. All students in the selected class could participate in the study. Sampling was stratified to balance the survey in the area of race/ethnicity; therefore, schools with large numbers of African Americans and Hispanics were used in the study.
Both studies included approximately the same amount of males and females (Collins et al., 1994).

The Secondary Student Health Risk Survey was used in 1989 to assess adolescents' knowledge, beliefs, and behaviors about HIV. In 1990, the Youth Risk Behavior Survey was used to survey adolescents. Both instruments contained eight questions that could be compared because of similarity. Both questionnaires were on a seventh-grade reading level and were self-administered. Parental consent was obtained and students participating were anonymous. Data collectors who were professionally trained administered the questionnaires (Collins et al., 1994).

A t test was used by Collins et al. (1994) to compare the results of the surveys. Even though both studies were similar, it was necessary to interpret the differences in the responses related to the independent variable, knowledge, and the dependent variables, which were sexual behavior and drug use. The SESUDAAN procedure was used, and if the value of p was less than or equal to .05 the results were considered significant.

Statistics were gathered using 122 schools in 1989 that included responses from 8,098 students. In 1990, 124 schools participated, which resulted in 11,631 surveys.
Demographic characteristics were distributed almost evenly in both years except for the unequal number of African American students (9.1% vs. 15.2%) and the proportion of students younger than 15 years of age (8.4% vs. 13.1%). To examine whether these demographic differences affected the results of the $t$-test analysis, additional multivariate analysis was conducted. The researchers determined the demographic differences did not affect the results in the areas of knowledge or behavior in either study (Collins et al., 1994).

Collins et al. (1994) determined that the percent of students being taught about HIV at school increased from 53.7% to 74.0% for almost every demographic group. Students also knew where to get good information about AIDS as evidenced by an increase from 49.0% in 1989 to 68.4% in 1990. Subjects from both studies were not likely to talk with adults about AIDS. In 1990, more students knew that insects were not a carrier of the virus, but fewer knew that donating blood did not cause HIV.

Sexual behavior before 13 years of age was approximately the same for both surveys, but the age that intercourse was initiated decreased for the 1990 study samples. Students having two or more sexual partners were
decreased in 1990 to 36.3% from the 40.1% reported in 1989. The percentage of condom use and drug use could not be determined because of a conflict in the survey questions (Collins et al., 1994).

The characteristics of being an African American male and having a low knowledge level about AIDS were associated with having two or more sexual partners in both surveys. However, when the factors of age, sex, and race/ethnicity were controlled, knowledge did increase in both surveys as an apparent result of HIV/AIDS instruction. The characteristics of being male, a race other than African American, and having lower knowledge levels about HIV/AIDS were related to the likelihood of drug injection, a consistent finding for both studies.

In conclusion, Collins et al. (1994) emphasized that studies of this type are essential in investigating the knowledge levels about HIV in adolescents and the impact on behaviors of this group. The researchers concluded that the relationship between knowledge and behaviors remains unclear since in this study there were no significant changes that occurred over time. But according to this study, adolescents received more information about HIV and knew where to get good information in 1990 than in 1989.
Collins et al. wrote that school-based education programs on HIV are effective in encouraging healthy behaviors in the adolescent population.

The current research will assess knowledge and attitudes about HIV/AIDS. The results of the current study evaluated a school-based HIV/AIDS education program and its effects on knowledge. In contrast to the current research, the study by Collins et al. (1994) focused on adolescents’ knowledge levels about HIV and how this affected their behavior.

Cohall et al. (1992) conducted a study of adolescents residing in an AIDS epicenter since this population is at an increased risk of contracting HIV. Since one fifth of all AIDS cases are reported in the 20- to 29-year-old population, it can be proposed that most of these individuals became infected as adolescents and have been asymptomatic since that time. Because of this concern, prevention programs for inner-city adolescents have become an important public health issue.

The purpose of the study was to examine correlates of risky and preventive behaviors that could be modified or reinforced with prevention programs. There were four goals for the survey which were to assess current AIDS risk and
preventive behaviors, to determine whether age, gender, race/ethnicity, school attended, or knowledge about AIDS affected these behaviors, to describe cross-sectional associations of AIDS risk and preventive behaviors, and to determine the variance between belief behaviors and demographic and knowledge levels (Cohall et al., 1992).

The Health Belief Model says that individuals who believe they can be exposed to HIV/AIDS know the disease would be devastating and that prevention of the disease is better than engaging in risky behaviors. Those individuals are more likely to participate in preventive behaviors than those who do not hold these beliefs. The social cognitive theory suggests that self-confidence necessary to maintain preventive behaviors will result from self-competence pertaining to these preventive behaviors. A recent proposed model of reference group-based social influence proposes that behavior norms (beliefs about how people typically act) and values (beliefs about how people out to act) help to formulate a normative standard which encourages the beginning and maintenance of preventive behaviors (Cohall et al., 1992).

Cohall et al. (1992) used a descriptive design to study AIDS-related behaviors, beliefs, and knowledge in a
sample of 10th-grade students in the AIDS epicenter of New York City. Two schools were selected out of 14 possible public academic high schools because of their willingness to participate and the racial/ethnic similarities to the entire population of the schools. Tenth-grade students were targeted for the study, and passive parental consent was required for the students to participate in the study. Nonconsenting parents totaled 5.5% in one school and 6.5% in the other school. The sample consisted of 44.3% males with a racial/ethnic distribution of 59.2% African Americans, 28.3% Hispanics, and 12.5% other (primarily non-Hispanic whites). The mean age of the participants (N = 531) was 16 years with a range of 13 to 21 years. Students were from working-class or welfare-recipient families.

The survey form contained questions about AIDS risk behaviors, perceived susceptibility to AIDS, severity of AIDS, and knowledge about transmission and prevention of AIDS. The survey was guided by the Health Belief Model, social cognitive theory, and the model of social influence. The research staff distributed the surveys to the 10th-grade students who consented to participate in the study and were enrolled in general education courses. The
survey took one hour to complete and was anonymous since no identifying information was included (Cohall et al., 1992).

Statistical analyses consisted of four stages. In the first stage, descriptive statistics were calculated to present prevalent data for the behaviors and beliefs assessed. Odd ratios (Ors) and associated 95% confidence intervals (Cis) were used to describe bivariate relations between the behaviors and beliefs. The second stage was composed of multiple logistic regression to investigate the differences in the distribution of AIDS behavior index scores among the five demographic and knowledge variables. Multiple logistic regression was used again in the third stage to assess the associations between beliefs generated from the seven investigational constructs and the AIDS behavior index scores. During the last stage, interaction effects were analyzed by multiplying demographic term or terms by the associated beliefs (Cohall et al., 1992).

The results of the study revealed that the average age of first sexual intercourse was 11 years for males and 15 years for females. Of the students who participated in this study, 64.4% had already engaged in sexual intercourse with 59.3% reporting the use of condoms during
sexual intercourse by them or their partners. Abstinence from sexual behavior was reported in less than half of the participants. Illicit intravenous drug use was not reported by any of the students.

Most of the students believed that half or more of their friends had participated in sexual intercourse in the past year with none or inconsistent use of condoms. Males (60%) and females (25%) believed students should have sexual intercourse at this age. Males reported to be less likely to perform behaviors to prevent AIDS than females (Cohall et al., 1992).

Cohall et al. (1992) found that students residing in an AIDS epicenter were at risk for contracting HIV because of their participation in risk behaviors. Socioeconomic factors, such as beliefs about norms, values, and self-efficacy, may determine involvement in behaviors that place the adolescent at risk for AIDS. Practitioners can help to correct misconceptions about AIDS risk behaviors and encourage preventive behaviors (Cohall et al., 1992).

Cohall et al. (1992) conducted research in New York City to assess for risky and preventive behaviors. The current research was conducted in a rural high school in the Southeastern United States to evaluate the knowledge
and attitudes of adolescents who received HIV/AIDS education in school. Knowledge levels of adolescents in the AIDS epicenter of New York City was compared to that of adolescents attending a high school in a rural area in the Southeastern United States.

Sullivan (1996) conducted a study on HIV prevention among high-risk adolescents. High-risk behaviors were defined as homosexual or bisexual orientation who were substance abusers, prostitutes, or both. Health education in this high-risk population has been initiated to help prevent HIV infection. However, the effectiveness of these efforts have not been seen in the population that is homeless and uses drugs and alcohol during sexual activity. The focus of this study was to assess the knowledge of HIV transmission and prevention among high-risk adolescents and to identify other factors that increase the risk in this population.

This descriptive exploratory study of HIV knowledge and risk behaviors was conducted with 60 adolescents and young men participating in the street life of Hollywood, California. The average age of the participants was 17 years. These individuals were located in areas that constituted a risk, such as those areas frequented by
runaways, drug-involved youths, prostitutes, and their customers. Potential subjects were identified in the late afternoon or at night in these high-risk locations. More than one of the following conditions had to be present for the participants to be classified as high risk: homelessness or transient or tenuous housing, use or involvement in illicit drugs, prostitution in exchange for money, drugs, food, and shelter, and identification as being gay or bisexual. The biggest challenge was the communication with the participants.

For the purpose of this study by Sullivan (1996), a 24-year-old African American male made contact with the participants and conducted the interviews. The interviewer was associated with a local youth-serving agency that distributed condoms and kits for the cleaning of IV needles and was known in the area for helping to find shelters for those in need. Adolescents agreed to participate in the interviews that were held in coffee shops or at a local park for the convenience of the participants. Data collection occurred over a 6-month period and resulted in interviews with 60 high-risk adolescents and young men (Sullivan, 1996).
A structured format was used during the interviews that lasted no more than 20 minutes. The brevity and anonymity of the interview helped promote participation. Demographic questions included school attendance and educational achievement, employment, and nontraditional sources of income, such as begging, stealing, drug dealing, and prostitution. Other demographic assessments were about the type of housing of the participants, how long they had been on the street, and how long it had been since they had seen or had contact with relatives. Specific questions were asked about drug and alcohol use and sexual activity. Knowledge levels were assessed by asking about ways HIV could be transmitted and prevented. Participants were asked about their source of information to determine if prevention programs were effective in reaching these individuals. Whether or not the individuals had been tested for HIV and if this affected their sexual activity or drug involvement were the last questions asked during the interview (Sullivan, 1996).

Data were analyzed using descriptive statistics with all demographic and nominal variables. To identify any relationships among ordinal- and interval-level variables, correlation coefficients were examined. Participants were
placed in two different groups. The participants citing a community program as an information source were placed in one group, the other group being participants who did not include a community program as an information source. These two groups were analyzed further using a t test to compare the difference in sexual behaviors and substance involvement (Sullivan, 1996).

The 60 male participants ranged in age from 13 and 29 years, with a mean age of 17 years. Ninety percent of the individuals participating in the study were gay or bisexual, with 60% being white, 30% being African American, 5% being Hispanic, and the remainder being Asian or American Indian. Of the 60 youths surveyed, only 25% were registered for school and 48% had completed high school. Living arrangements consisted of only 16% living with family or relatives, 19% living with friends, and 21% residing in group or foster homes. At the time of the interview, 44% had no permanent address or shelter arrangements, and only 16% of the participants had been living at the same location for more than 6 months (Sullivan, 1996).

Respondents who could correctly provide any HIV transmission information only totaled 13%, with 11%
providing more false information than correct information. Seventy-six percent could identify at least one way that transmission of HIV was possible, and 56% of the participants could identify two correct transmission sources. Incorrect responses about how HIV could be transmitted included the following: kissing someone infected with the virus, sharing kitchen utensils, having sexual intercourse with someone who appears “sick,” and using “needles.” Of the 60 participants, 49 (82%) said the risk of HIV could be reduced by the use of condoms, 25 (42%) said the risk of HIV could be reduced by not sharing needles, and 8 (13%) said the risk of HIV could be reduced by not having as many sexual partners (Sullivan, 1996).

Drug use was identified in 57% of the participants with 62% using drugs daily and 19% sharing needles. Alcohol consumption was identified in 68% of the participants with 16% saying they drank everyday. For the purpose of this study, drinking was defined as the equivalent of five drinks of hard liquor or five bottles of beer in 2 hours (Sullivan, 1996).

Sixty-seven percent of respondents reported having multiple sexual partners in the past month with 18 being the average number of partners. Of the 60 respondents,
only 20% reported they always used a condom consistently and had one in their possession at the time of the interview. Other respondents only used condoms sporadically. The most common reasons given for not using condoms were not having any, being drunk or stoned, and forgetting (Sullivan, 1996).

Sullivan (1996) found the sources of information available to the respondents included a local high school and two community outreach projects that were attempting to disseminate preventive information about HIV/AIDS. Only 22% of the respondents had been reached through the community outreach project. Despite the efforts of community education projects, knowledge levels about HIV infection and its prevention were not reflected in the survey even by the respondents who identified these projects as a primary source of information.

Sullivan (1996) concluded that the risk for HIV/AIDS was increased in the high-risk adolescent population despite information, condoms, and kits for the cleaning of IV needles being distributed by community outreach programs. Another area of concern found in this study was substance abuse which inevitably leads to high-risk sexual practices. This study found that the stigma and
psychosocial costs of being gay or bisexual contributed to educational disruption. Gay or bisexual individuals may not receive the appropriate, ethical, and effective service that would promote safer practices in this population.

The current research assessed adolescents' knowledge and attitudes about HIV/AIDS, not behaviors. The current study did not identify adolescents who participate in high-risk behaviors in the sample. Many adolescents participate in high-risk behavior; therefore, it was necessary to present data on this high-risk population. Sullivan (1996) believed that adolescents did not alter high-risk behavior even with information about HIV/AIDS.

Ellis, Jones, Lindsay, and Tappe (1991) conducted a descriptive study that was commissioned by the State Department of Education and its AIDS Advisory Council. The purpose of this study was to assess the knowledge, beliefs, and behaviors in relation to HIV of adolescents. The Centers for Disease Control (CDC) began a national study in 1987 to determine these same aspects regarding AIDS in the cities that had the highest incidence of HIV/AIDS. The study was conducted by Ellis et al. in a
state with a lower HIV incidence to see how the results compared to the earlier CDC research.

A random sample of approximately 10% of the schools in the state was selected, and a letter signed by the state superintendent was sent to each school superintendent asking for permission to collect data in their school district. The school was chosen randomly in districts that contained more than one high school. Two ninth-grade classes and two 11th-grade classes were selected randomly by the building principal. An attempt was made to collect data from 50 ninth graders and fifty 11th graders at each participating school (Ellis et al., 1991).

A modified version of the earlier CDC instrument was used to collect data. Questions were added to elicit how and where adolescents get information about HIV/AIDS. The AIDS Advisory Council approved the instrument before it was piloted and found it to be suitable to use with ninth- and 11th-grade students. The questionnaires were distributed by university level health education professionals at each school to ensure confidentiality of all student responses. A total of 2,307 students in 26 different school districts participated in the study.
including 1,135 females and 1,172 males. There were slightly more ninth-grade students than 11th-grade students participating in the study, but the sample was similar to the study conducted by the CDC (Ellis et al., 1991).

Results showed that 92% of both the ninth and 11th graders equally believed that the school had a responsibility to teach about HIV/AIDS. Attitudes about whether or not HIV positive students should attend school varied between 50% believing they should be allowed to attend school, 25% being unsure, and 12% saying they should not be allowed to attend school. Males in both grades are less supportive than females about HIV-positive students attending school. Communication with friends and/or adults in their family about HIV/AIDS resulted in 50%, with males less likely than females to participate in such discussions (Ellis et al., 1991).

Sixty percent of respondents said they had received some information about HIV/AIDS in school, with 35% responding that they had not received any information. Only less than 50% of the respondents knew where to get accurate information. Eleventh graders were more aware of where to get accurate information than ninth-grade students. Over 80% of students knew how to prevent the
transmission of HIV/AIDS, with approximately the same percentage knowing that one cannot tell if a person has HIV by their appearance. More 11th graders than ninth graders knew there was no cure for AIDS resulting in a total of almost 90% (Ellis et al., 1991).

Over 90% of participants knew that the risks of HIV were increased when sharing IV needles and having sexual intercourse without a condom. More than 80% of students knew that abstinence, using a condom during sexual intercourse, and not having sexual intercourse with an IV drug user could reduce their risk of HIV. Thirty-one percent of students were unsure about whether HIV was transmitted through blood testing and donation. Ninth graders were more unsure about this mode of transmission than 11th graders (Ellis et al., 1991).

Only a small number of students, mostly males, engaged in IV drug use. At-risk sexual activity was of more concern, with 34% of respondents having had multiple sexual partners. Sexual intercourse was initiated between the ages of 13 and 16 years with 10% responding that they had their first sexual encounter at age 12 or younger. Thirty-three percent of respondents used condoms
consistently, the remaining 66% used condoms sporadically, with 25% never using condoms (Ellis et al., 1991).

Among the risks assessed in this study by Ellis et al. (1991), unprotected sexual behavior is the risk factor that needs to be decreased. To prevent the spread of HIV/AIDS, adolescents must be knowledgeable about HIV and be willing to change their risk behaviors. This study discussed a paradigm that would assist with prevention that contains five elements: (a) the rational element, based on knowledge; (b) the emotional element, based on intensity of attitudes or feeling, (c) the practical element, based on personal skills needed to achieve the new desired behaviors, (d) the interpersonal element, or social networks, and (e) the structural element or the economic, legal, and technological context in which at-risk behavior takes place.

In conclusion, Ellis et al. (1991) found that students believe that schools should instruct them about the HIV/AIDS epidemic, including information about the transmission and prevention of the disease. Students feel they are behaving in ways that place them at risk for HIV. The decision to address these findings and perceptions remain with the health education professionals.
The current research will focus on adolescents who have received AIDS education at school. The results of the current research reflected the knowledge levels of the adolescents who participated in the study. The knowledge levels of these adolescents could be considered an evaluation of the current AIDS program at the participating high school. Ellis et al. (1991) believed that schools should instruct adolescents about HIV/AIDS. The current research focused on the outcomes of AIDS education.

Bearinger et al. (1997) conducted a study with the main objective to identify cognitive and behavioral predictors of risk behavior among sexually active adolescents. Behaviors addressed in the research included condom use consistency with the most recent sexual partners, number of vaginal sex partners, and frequency of intercourse with most recent sexual partner. These behaviors contribute to sexually transmitted disease and are amenable to change with the help of clinics, schools, and community-based programs (Bearinger et al., 1997). The following research questions were addressed:

1. What is the relationship between adolescents’ baseline knowledge, attitudes, and behaviors, including
STD-related knowledge, condom use self-efficacy, outcome expectations, partner communication practices, substance use behavior, use of oral contraceptive pills (OCP), and STD risk behaviors, to STD risk behavior one year later?

2. What is the relative strength of these cognitive and behavioral factors, both alone and in combination, in explaining STD risk behavior among sexually active teens?

3. How much variability in STD risk behavior can be explained by antecedent cognition and behavioral patterns (Bearinger et al., 1997)?

Independent variables in this study were identified as adolescents’ perceptions of susceptibility to and severity of STDs, barriers to STD preventive behaviors, effectiveness of STD preventive behaviors, and condom use self-efficacy. The dependent variable was based on the participants’ level of involvement in three high-risk behaviors for acquisition of STDs: inconsistent condom use, multiple sexual partners, and high frequency vaginal intercourse (Bearinger et al., 1997).

This one-year longitudinal study focused on health beliefs, sexual behaviors, and STD acquisition using a sample of 549 adolescents between the ages of 14 and 21 years, who represented seven school- and community-based
clinics in the Minneapolis-St. Paul, Minnesota, metropolitan area. The potential participants were recruited during routine health visits. All adolescents presenting to the health clinic were eligible unless they had been treated with antibiotic therapy within the last 6 months because this would complicate the detection of an STD. Another condition is if the adolescents were enrolled in the 12th grade at the baseline (T1) because the one-year follow-up (T2) could not be assured. T1 occurred in 1990 and T2 one year later in 1991 (Bearinger et al., 1997).

The sample consisted of 335 females and 75 males who completed surveys at T1 and T2 who were sexually active at T2. Sexually active is defined as having had vaginal intercourse with one or more partners or the opposite sex in the previous year. Females were an average of 16.9 years, with 74.1% being white, 13.7% being African American, and 12.2% being from other backgrounds. Males were an average age of 17.6 years with 60% being white, 18.7% being African American, and 21.3% from other backgrounds (Bearinger et al., 1997).

A written consent was obtained from each participant before completing the self-administered questionnaire that elicited information about demographics, contraceptive use
patterns, history of STD testing and diagnosis, and sexual knowledge, beliefs, and behaviors. Adolescents were not required to obtain parental consent before participating in this study because of the Minnesota Medical Bill for Minors Act. The University of Minnesota Institutional Review Board approved all study protocols prior to implementation (Bearinger et al., 1997).

Instrumentation for this study collected data concerning STD risk behaviors and health beliefs which included perceived barriers to STD prevention, perceived effectiveness of STD preventive action, perceived susceptibility to negative outcomes, perceived severity of STD, and condom use self-efficacy. Behaviors assessed included partner sexual communication patterns, alcohol use, and the use of oral contraceptives (Bearinger et al., 1997).

To explore the significance of changes in STD behavior over the one-year interval, a paired t test was used. Male and female subjects were compared separately. Bivariate analyses were used to determine T1 cognitive and behavioral predictors of T2 STD risk behavior within this sample. STD risk behaviors among the participants were grouped into three categories: low, medium, and high risk.
These relationships were explored using the Spearman rank-order correlation coefficients. Pearson correlation coefficients were used to examine the relationships between T1 and T2 STD risk behavior (Bearinger et al., 1997).

Results of the behavior portion of the survey reflected 46.6% of females having sexual intercourse with one partner during the one-year interval between T1 and T2, and 14.9% having four or more partners during this same time frame. The statistics for males were approximately the same as that of females in this area. The mean level of STD risk behavior was not significantly different at T2 from the previous T1 in either males or females. Females reporting the lowest levels of STD risk behavior at T1 engaged in the lowest level of risk behavior at T2. Those using oral contraceptives at T1 as a reason not to use condoms reported higher levels of risk behavior at T2. Use of alcohol associated with sexual activity at T1 was a predictor of higher levels of STD risk behavior at T2. Approximately 10.8% of adolescents in the sample who completed screening examinations had a confirmed STD at T2 (Bearinger et al., 1997).
Bearinger et al. (1997) found that behaviors remained the same in males and females during the one-year interval. The level of risk behavior present at T1 was the most important predictor at T2 according to this research. The research suggested that school-, clinic-, and community-based programs should be aimed at reducing and preventing STD risk behaviors.

The current research did not assess risk behaviors; however, knowledge and attitudes were assessed about HIV/AIDS. The study by Bearinger et al. (1997) was significant to present knowledge and behaviors as predictors of future behaviors. With research on the current knowledge levels of adolescents about AIDS, health care providers will be more aware of the educational needs of this population. This education will help prevent the transmission of HIV/AIDS in adolescents.

The review of literature shows that adolescents are at increased risk for contracting HIV/AIDS because of their knowledge levels, attitudes, beliefs, and participation in high-risk behaviors (Ashworth et al., 1992; Bearinger et al., 1997; Cohall et al., 1992; Ellis et al., 1991; Walker, 1992). Because of the increased risk of HIV/AIDS in the adolescent population, school-based
education programs have been developed and have effectively increased knowledge levels among adolescents (Collins et al., 1994). Other literature has been conducted to assess knowledge, beliefs, and risk behaviors among adolescents living in high-risk areas, such as New York City and adolescents who participate in high-risk behavior, such as prostitution and drug use (Cohall et al., 1992; Sullivan, 1996). Research about adolescents’ knowledge and attitudes about HIV/AIDS in the rural South was not found during the review of literature which supported the need for the current study.
Chapter III

The Method

The purpose of this study was to assess the knowledge and attitudes of adolescents about HIV/AIDS. In this chapter the variables are defined, and the method used to examine these variables is discussed. The procedures used in this research are discussed including the design, population, sample, and setting. The procedures used to collect data with each group of subjects are also described.

Design of the Study

This study utilized a descriptive design since the main objective of descriptive research is the accurate portrayal of the characteristics of individuals, situations, or groups and the frequency with which certain phenomena occur (Polit & Hungler, 1995). A descriptive design was chosen for this study because the purpose of this study was to describe adolescents’ knowledge and attitudes about HIV/AIDS.
Variables

The variables of interest in this study were knowledge and attitudes of adolescents about HIV/AIDS. Control variables included age, geographical location, and the class in which the participants were enrolled at the time of the study. Other factors affecting the study may have been the honesty of the participants and the technique used by the faculty member during the completion of the questionnaire.

Setting, Population, and Sample

The setting for this research was in the northeastern section of Mississippi at a high school with approximately 700 students enrolled in Grades 9-12. The students participated in this research study as a health class. There are no statistics for HIV/AIDS cases at this high school, but school officials do recognize the AIDS epidemic as a health risk for students; therefore, they agreed to participate in this study to assess the knowledge and attitudes of the participating students about HIV/AIDS. Members of the faculty who instruct students about HIV/AIDS have received special education to qualify them to teach this subject.
The population investigated consisted of adolescents between the ages of 14 and 18 years enrolled in Grades 9-12. The convenience sample included 78 adolescents who agreed to participate in the study. Seventy-seven of the students had received AIDS education at school during the past year. A written consent was obtained from the students.

Procedures

Permission was obtained from the Committee on the Use of Human Subjects in Experimentation at the Mississippi University for Women (see Appendix A). Permission was obtained from the superintendent of the city high school participating in the research (see Appendices B and C). The superintendent obtained permission prior to participation in the study from the Board of Education before granting permission to the researcher. The superintendent was advised that results from the study would be provided to the school after the study. The Student Health Survey used to collect data for this study was revised by the superintendent by omitting all questions related to risk behaviors. The revised questionnaire was reviewed and approved by the school board and the researcher. Consent forms were sent to the
parents of the perspective participants to be signed and returned prior to the implementation of the study (see Appendix D). All students who participated in the study had prior parental consent forms that were given to the faculty member and retained by the school. At the request of the superintendent, the faculty member who regularly teaches Health administered the questionnaire using the guidelines described by the researcher. Completion of the survey took approximately 30 minutes. All students were given the same information about the study. The student consent was also read aloud by the faculty member and signed by the students before the surveys were distributed (see Appendix E). After the surveys were distributed, the faculty member read the directions and explained that the students could withdraw from the study at any time by turning the survey face down on the desk. When all students had completed their surveys, the faculty member collected the surveys. All surveys were placed in a folder and returned to the researcher. The same procedure was repeated in five different Health classes in Grades 9-12.

Instrumentation. The instrument utilized in this study was the Student Health Survey, developed in 1989 by Dr. Larry Brown (see Appendix F). Permission to use the
instrument in a modified version was obtained from the author prior to implementation of the study (see Appendix G). This instrument was appropriate for the research because it assessed information about the knowledge and attitudes of adolescents regarding HIV/AIDS. The instrument contained a 5-question demographic section and 38 questions about knowledge and attitudes. All questions were multiple-choice except the last two questions on the survey, which were open-ended questions. Students were instructed to mark their answers on the survey form. All students were given the same instructions prior to completing the survey form. The Student Health Survey has no established reliability or validity but has been used extensively with the adolescent population. The survey was accepted based on face validity as determined by a group of experts.

Method of Data Analysis

The research questions were concerned with the knowledge and attitudes of adolescents about HIV/AIDS and were designed to elicit information on the knowledge and attitudes of adolescents about HIV/AIDS. Results of the surveys were analyzed using descriptive statistical methods including frequencies and percentages, which were
appropriate to describe the knowledge and attitudes of the participants about HIV/AIDS. Open-ended questions were subjective and analyzed to find a significant pattern.

Summary

In Chapter III, the design of this research study which examined knowledge and attitudes of adolescents about HIV/AIDS was discussed. The setting, population, and sample were defined. Written consents were required to participate in the study. A discussion of the procedure and instrumentation used in the study were presented. Methodology and analysis used to interpret the data were discussed.
Chapter IV

The Findings

The purpose of this study was to assess the knowledge and attitudes of adolescents about HIV/AIDS. A descriptive study was conducted among adolescents during health class at a high school in the southeastern region of the United States. The sample consisted of 78 adolescents. Data were collected using the Student Health Survey developed by Brown (1989). The surveys were administered to the high school adolescents by the faculty member teaching Health.

The data collected and analyzed for this study are presented in this chapter. Demographics of the participants in the study are presented. Data analysis is described along with the results of the study. A comparison of three questions that appeared in both the knowledge and attitude sections of the Student Health Survey are discussed.
Description of the Sample

The sample for this study consisted of 78 adolescents enrolled in a health class at a high school in the southeastern region of the United States. The mean age of the participants was 15.7 years with a range of 14 to 18 years. The sample consisted of 43 (55%) male and 35 (45%) female participants. Ethnic backgrounds were 59% Caucasian, 35.9% African American, and 5.1% other.

Adolescents were asked what educational level they expected to complete. Future educational plans for the sample were 1 (1.3%) not finishing high school, 16 (20.5%) planning to finish high school, 36 (46.2%) planning to earn a college degree, and 21 (26.9%) planning to earn a degree beyond college. All participants except one said they had received HIV/AIDS education during this school year.

Knowledge levels about HIV/AIDS were assessed using 20 questions. These questions assessed knowledge about the modes of transmission, whether HIV could be contracted by casual contact, and the transmission of HIV perinatally. Other basic information about HIV/AIDS was assessed such as whether there was a cure for AIDS, the length of time before becoming sick from AIDS, and whether a vaccine was
available for AIDS. Participants could answer the questions by selecting one of three choices, true, false, or "?" which denoted the participant did not know the correct answer.

Adolescents’ attitudes about HIV/AIDS were ascertained using 14 questions. Information from these questions included attitudes about others that are infected with HIV/AIDS including adolescents, casual contact with individuals infected with HIV/AIDS, and attitudes about the modes of transmission. The choices given to answer these questions were yes, sort of true, and no. The survey concluded with two open-ended phrases to be completed by the participants.

Knowledge About HIV/AIDS

Twenty questions were asked that assessed knowledge of adolescents about HIV/AIDS. The majority of participants correctly answered questions about the modes of transmission of HIV/AIDS. All participants (100%) answered that AIDS could be transmitted by having sex with someone infected with AIDS. The question regarding transmission of AIDS by sharing needles to inject street drugs was also answered correctly by 100% of the participants.
Forty-seven (60.3%) of the adolescents surveyed believed it was possible to contract AIDS by a nurse taking their blood, with 25 (32%) of the participants answering false, and 6 (7.7%) answering that they did not know if the question was true or false. Nearly 90% correctly answered that there is a screening test to identify AIDS in donated blood.

Transmission of HIV/AIDS through casual contact, such as touching, kissing, and using the comb or brush of someone with AIDS, was assessed in three questions. The majority of participants answered these questions correctly, which indicates adolescents are knowledgeable about casual contact with HIV/AIDS-infected individuals.

Approximately 50% of the adolescents surveyed answered correctly that AIDS is not caused by the same virus that causes other venereal diseases (VD), with the remaining participants answering incorrectly or not sure. Eighty-two percent of adolescents answered that HIV is the virus that causes AIDS. Approximately 87% of the participants knew that there had not been a vaccine developed to prevent AIDS.

One question assessed knowledge about latex condoms being the only effective protective device against the
transmission of the AIDS virus. Only 10 (12.8%) of participants answered this question correctly, with 61 (78.2%) answering false, and the remaining 7 (9%) answering not sure. These percentages indicated the need for teaching about different condoms and that latex is the only effective barrier against the AIDS virus. Responses from the Knowledge section of the Student Health Survey are presented in Table 1.

Attitudes About HIV/AIDS

Fourteen questions assessed the attitudes of adolescents about HIV/AIDS. One question assessed the attitude of adolescents about people with AIDS getting what they deserve. Approximately 55% of participants answered no to this question, with 39.7% answering sort of true, and the remaining 5.1% answering yes. Twenty-three percent of participants answered that homosexuals should be blamed for the AIDS problem, with 30.8% answering ST (sort of true), and the other 46.1% answering that homosexuals should not be blamed.
<table>
<thead>
<tr>
<th>Question</th>
<th>True</th>
<th>False</th>
<th>NS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. You could get AIDS by having your blood taken by a nurse.</td>
<td>47</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>2. You can get AIDS by touching or being near a person with AIDS.</td>
<td>1</td>
<td>77</td>
<td>0</td>
</tr>
<tr>
<td>3. AIDS is caused by the same virus that causes other venereal disease (VD).</td>
<td>14</td>
<td>40</td>
<td>24</td>
</tr>
<tr>
<td>4. You can get AIDS by having sex with someone who has the AIDS virus.</td>
<td>78</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5. The AIDS disease is caused by the human immunodeficiency virus.</td>
<td>64</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>6. People with AIDS may get cancer because the AIDS virus harms the body's immune system.</td>
<td>53</td>
<td>18</td>
<td>7</td>
</tr>
<tr>
<td>7. You can get AIDS from a mosquito bite.</td>
<td>9</td>
<td>61</td>
<td>8</td>
</tr>
<tr>
<td>8. Only condoms made of latex are effective against the transmission of the AIDS virus.</td>
<td>10</td>
<td>61</td>
<td>7</td>
</tr>
</tbody>
</table>

(table continues)
<table>
<thead>
<tr>
<th>Question</th>
<th>True f</th>
<th>True %</th>
<th>False f</th>
<th>False %</th>
<th>NS f</th>
<th>NS %</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. You can get AIDS by sharing needles when shooting street drugs (IV drugs).</td>
<td>78</td>
<td>100.0</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>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.</td>
<td>67</td>
<td>85.9</td>
<td>6</td>
<td>7.7</td>
<td>5</td>
<td>6.4</td>
</tr>
<tr>
<td>11. A baby could be born infected with the AIDS virus if its mother is infected with the virus.</td>
<td>74</td>
<td>94.9</td>
<td>4</td>
<td>5.1</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>12. The only people at risk for the AIDS virus are homosexuals, IV drug users, and people who received blood transfusion before we knew about the AIDS virus.</td>
<td>16</td>
<td>20.5</td>
<td>61</td>
<td>78.2</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>13. When it comes to sex, the most effective way to prevent the spread of AIDS is to avoid sexual intercourse.</td>
<td>70</td>
<td>89.7</td>
<td>7</td>
<td>9.0</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>14. There is a screening test that tells you if donated blood is infected with the AIDS virus.</td>
<td>70</td>
<td>89.7</td>
<td>5</td>
<td>6.4</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td>Question</td>
<td>True</td>
<td>False</td>
<td>NS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------</td>
<td>-------</td>
<td>-----</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. An effective vaccine that will prevent AIDS recently has been developed.</td>
<td>5</td>
<td>68</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. You could get AIDS by using the comb or brush of someone who is infected with the AIDS virus.</td>
<td>1</td>
<td>77</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. AIDS can be cured if treated early.</td>
<td>6</td>
<td>68</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. You can get AIDS from someone who is infected with the AIDS virus, even if that person has no symptoms of AIDS.</td>
<td>70</td>
<td>8</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. A birth control pill will protect you against AIDS.</td>
<td>2</td>
<td>75</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. If you get the AIDS virus you are likely to get sick from AIDS within the next 6 months.</td>
<td>26</td>
<td>42</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 78.
Two questions assessed attitudes of the participants about other students with AIDS. The first question related to a student with AIDS attending school, and the other question assessed whether the participant would be afraid of contracting AIDS from another student. The majority of participants do not feel students with AIDS should be kept out of school and would not be afraid of contracting AIDS from another student attending school.

Thirty-eight (48.7%) answered that AIDS makes them nervous, with 15 (19.2%) answering sort of true, and the other 25 (32.1%) answering that AIDS did not make them nervous. Only 32 (40%) of the participants said their family has discussed AIDS with them, with the remaining students answering sort of true and no. Four (5.1%) of the participants said they worried about already having AIDS, with 3 (3.8%) answering sort of true, and 71 (91.1%) answering no to this question.

Four questions assessed the attitudes of adolescents regarding the transmission of HIV/AIDS through social contact. These questions referred to contact through touching and kissing someone with AIDS, going to the home of someone with AIDS, and swimming in the same pool as someone with AIDS. Approximately 50% of the participants
felt comfortable touching, kissing, and going to the home of someone with AIDS. Approximately 40% answered that they would feel comfortable swimming in the same pool as someone with AIDS. Responses to the attitudes sections of the Student Health Survey are presented in Table 2.

Two open-ended phrases concluded the survey, and participants were asked to complete these phrases. The first phrase asked what upset the adolescent most about AIDS. The second phrase stated, "Because of AIDS, I now have to . . . " A majority of the participants answered these phrases. The most common responses from these phrases are presented in Tables 3 and 4, respectively.

Additional Findings

Additional findings include a comparison of three questions that were similar in both the knowledge and attitude sections of the Student Health Survey. These three questions pertained to contracting AIDS by a nurse taking blood, by touching someone with AIDS, and by kissing someone with AIDS. The frequencies and percentages of these three questions will be presented in this section.
Table 2

**Frequencies and Percentages of Attitudes of Adolescents About HIV/AIDS**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th></th>
<th>ST</th>
<th></th>
<th>No</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>1. I feel that people with AIDS get what they deserve.</td>
<td>4</td>
<td>5.1</td>
<td>31</td>
<td>39.7</td>
<td>42</td>
<td>55.1</td>
</tr>
<tr>
<td>2. I think that kids who have the AIDS virus should be kept out of school.</td>
<td>6</td>
<td>7.7</td>
<td>8</td>
<td>10.3</td>
<td>64</td>
<td>82.1</td>
</tr>
<tr>
<td>3. I would feel okay touching someone with AIDS.</td>
<td>45</td>
<td>57.7</td>
<td>19</td>
<td>24.4</td>
<td>14</td>
<td>17.9</td>
</tr>
<tr>
<td>4. Homosexuals should be blamed for the AIDS problem.</td>
<td>18</td>
<td>23.1</td>
<td>24</td>
<td>30.8</td>
<td>36</td>
<td>46.1</td>
</tr>
<tr>
<td>5. I am very nervous about AIDS.</td>
<td>38</td>
<td>48.7</td>
<td>15</td>
<td>19.2</td>
<td>25</td>
<td>32.1</td>
</tr>
<tr>
<td>6. I would feel okay going to the home of someone with AIDS.</td>
<td>41</td>
<td>52.6</td>
<td>27</td>
<td>34.6</td>
<td>10</td>
<td>12.8</td>
</tr>
<tr>
<td>7. I would swim in a pool even if I knew a person with AIDS was swimming in it too.</td>
<td>31</td>
<td>39.7</td>
<td>19</td>
<td>24.4</td>
<td>28</td>
<td>35.9</td>
</tr>
</tbody>
</table>

*(table continues)*
TABLE 2. (continued)

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>ST</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
</tr>
<tr>
<td>8. Because of AIDS, falling in love is scarier.</td>
<td>22</td>
<td>28.2</td>
<td>22</td>
</tr>
<tr>
<td>9. My family has talked about AIDS.</td>
<td>32</td>
<td>40.4</td>
<td>17</td>
</tr>
<tr>
<td>10. I am worried that I already might have AIDS.</td>
<td>4</td>
<td>5.1</td>
<td>3</td>
</tr>
<tr>
<td>11. I would worry about getting AIDS from kissing someone.</td>
<td>6</td>
<td>7.8</td>
<td>26</td>
</tr>
<tr>
<td>12. I would worry about getting AIDS from having a nurse take my blood.</td>
<td>15</td>
<td>19.2</td>
<td>21</td>
</tr>
<tr>
<td>13. I would be afraid of getting AIDS if a kid with AIDS was in my class.</td>
<td>5</td>
<td>6.4</td>
<td>12</td>
</tr>
<tr>
<td>14. 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.</td>
<td>1</td>
<td>1.3</td>
<td>10</td>
</tr>
</tbody>
</table>

Note. N = 78.
Table 3

Frequencies and Percentages of What Upsets Adolescents the Most About HIV/AIDS

<table>
<thead>
<tr>
<th>Response</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No cure for AIDS</td>
<td>17</td>
<td>22.0</td>
</tr>
<tr>
<td>Not knowing who has AIDS</td>
<td>18</td>
<td>23.0</td>
</tr>
<tr>
<td>Adolescents who continue with risk behaviors despite increased knowledge levels</td>
<td>10</td>
<td>13.0</td>
</tr>
<tr>
<td>Possible death</td>
<td>7</td>
<td>.8</td>
</tr>
</tbody>
</table>

Note. n = 52.

Table 4

Frequencies and Percentages of How Adolescents Have to Change Because of AIDS

<table>
<thead>
<tr>
<th>Response</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worry about getting AIDS</td>
<td>4</td>
<td>.5</td>
</tr>
<tr>
<td>Being in contact with blood and body fluids (sports injuries/accidents)</td>
<td>6</td>
<td>.7</td>
</tr>
<tr>
<td>Remain abstinent</td>
<td>14</td>
<td>18.0</td>
</tr>
<tr>
<td>Be careful regarding sexual behavior</td>
<td>33</td>
<td>42.0</td>
</tr>
</tbody>
</table>

Note. n = 57.
Forty-seven (60.3%) of the adolescents surveyed answered that AIDS could be transmitted by a nurse taking blood, with 25 (32%) of the participants answering false to this question. The remaining adolescents were unsure. Yet, the attitude of the adolescents when asked if they would worry about getting AIDS from a nurse taking blood reflected otherwise. Forty-two (53.9%) of the adolescents said they would not worry about getting AIDS when a nurse took blood, with only 15 (19.2%) answering they would worry. The remaining participants answered sort of true.

Participants were asked if AIDS could be transmitted by touching or being near someone with AIDS on the knowledge section of the survey. Seventy-seven (98.7%) answered that AIDS could not be transmitted by touching or being near someone with AIDS. Yet, in the attitude section of the survey, only 45 (57.7%) of the adolescents answered that they would feel comfortable touching someone with AIDS. Fourteen (17.9%) of the participants answered that they would not feel comfortable touching someone with AIDS, with the remaining 19 (24.4%) answering sort of true.

Finally, the third question compared was kissing someone with AIDS. On the knowledge section, 67 (87.9%)
answered that it was still safe to kiss someone with AIDS on the lips, 6 (7.7) said it was not safe, and the remaining 5 (6.4%) were unsure. The attitude section of the survey reflected that 46 (58.4%) of the participants would not worry about getting AIDS from kissing someone infected with the virus. Six (7.8%) answered that they would worry about getting AIDS from kissing someone with AIDS. The remaining 26 (33.8%) of the adolescents felt that it was sort of true that AIDS could be transmitted by kissing someone with the AIDS virus.

Conclusions

Data collection using the Student Health Survey was analyzed and presented in this chapter. Demographics were presented including the expected education levels for the adolescents who participated in the survey. Results were illustrated using tables from the knowledge and attitude sections of the survey. The most frequent responses from the two open-ended phrases were presented. Additional findings included a comparison of three questions that were similar in both the knowledge and attitude sections of the Student Health Survey.
Chapter V

The Outcome

The purpose of this descriptive study was to assess knowledge and attitudes of adolescents about HIV/AIDS. Elkind’s (1988) theory of child/adolescent development was used to guide this study. This theory was appropriate for the current research because the personal fable and imaginary audience aspects of the theory describe the thought patterns of adolescents. The sample was one of convenience and consisted of 78 adolescents attending a high school in the southeastern region of the United States.

The research questions were the following: What are the knowledge levels of adolescents about HIV/AIDS? And what are the attitudes of adolescents about HIV/AIDS? A descriptive research design was used to conduct this study. The participants completed the Student Health Survey developed by Brown (1989). The survey contained 20 questions regarding knowledge about HIV/AIDS and 14 questions about attitudes toward HIV/AIDS. Two open-ended
phrases were completed by the participants that ascertained personal feelings about HIV/AIDS. These data were analyzed using descriptive statistics to assess knowledge and attitudes of adolescents about HIV/AIDS.

Adolescents are at an increased risk for contracting HIV/AIDS as evidenced by infection rates presented in this research. Because of these growing statistics, many states have mandated AIDS education in the schools. The assumption was that, with increased knowledge levels about HIV/AIDS, adolescents could make effective decisions regarding high-risk behavior. Yet many experts believe that knowledge will not have an impact on adolescents without exploring attitudes and beliefs regarding HIV/AIDS. The need to conform to a standard among adolescents is a barrier to the prevention of HIV/AIDS in this population.

**Summary of Findings**

**Demographics.** The convenience sample for this study consisted of 78 adolescents between the ages of 14 and 18 years, with a mean age of 15.7 years. Gender distribution was 43 (55%) males and 35 (45%) females. Ethnic backgrounds were Caucasian (46, 59%), African American (28, 35.9%), and other (4, 5.1%). All participants were
enrolled in a health class at a local high school in the southeastern region of the United States at the time of this study.

Participants were asked what level of education they expected to complete. One (1.3%) student did not expect to finish high school, with 16 (20.5%) expecting to finish high school, 4 (5.1%) expecting to complete a 2-year degree, 36 (46.2%) expecting to complete college, with the remaining 21 (26.9%) expecting to earn a degree beyond college. All participants except one had received AIDS education at school during this past year.

Adolescents have adequate knowledge regarding modes of transmission. All participants answered correctly that AIDS could be transmitted during sex with someone infected with AIDS. The transmission of AIDS when sharing needles to inject street drugs was also answered correctly by all participants in the study. Seventy-four (94.9%) of the participants believed that a baby could be born having AIDS if the mother was infected with AIDS. Seventy (89.7%) of the adolescents said there was a screening test to detect AIDS in donated blood.

The majority of participants knew that AIDS was not transmitted through casual contact with others who are
infected with the virus. Yet the attitudes reflected they would worry about getting AIDS by having casual contact with someone infected with AIDS. Apparently, though adolescents know that AIDS is not transmitted through casual contact, they still worry about close contact with someone with AIDS. Sixty-one (78.2%) of the participants believed that AIDS could not be transmitted by a mosquito bite. Seventy-five (97.4%) of the adolescents correctly answered that a birth control pill would not protect them from AIDS.

The most significant information found in the current research was adolescents' knowledge about HIV/AIDS in regard to a nurse taking blood, the protective use of latex condoms, and about the organism that causes AIDS. Forty-seven (60.3%) of the participants believed AIDS could be transmitted when a nurse took blood. Yet 42 (53.9%) of the participants said they would not worry about getting AIDS from a nurse taking blood. Sixty-one (78.2%) of the adolescents surveyed said that condoms did not have to be made of latex to protect from AIDS. Only 50% of the adolescents who participated in the study correctly answered that the AIDS virus was not the same organism that causes venereal disease (VD).
Discussion

This research was conducted in a rural high school to assess knowledge and attitudes about HIV/AIDS among adolescents. All of the participants except one said they had received AIDS education during this school year. Considering the results of the current study, knowledge levels of the adolescents were adequate regarding the modes of transmission of AIDS. The four main modes of transmission are identified as sexual intercourse, IV drug use, perinatal transmission, and transfusion of blood products. All participants correctly answered questions about HIV transmission by sharing needles to inject street drugs and having sex with someone infected with AIDS. A majority answered correctly that a baby could get AIDS if the mother was infected with the virus. Almost 90% of the participants knew there was an AIDS screening test for donated blood. These results can be compared to the study conducted by Walker (1992) in which approximately 96% of the respondents could identify the four main modes of transmission. Walker (1992) believed that adolescents had the knowledge to prevent the transmission of AIDS which was supported in the current study.
The current study contained two open-ended phrases to be completed by the participants. One of these phrases assessed what the adolescent would have to do differently because of AIDS. Thirty-three (42%) of the adolescents completed this phrase by saying they would have to be more careful regarding sexual behavior. Fourteen (18%) answered this phrase by saying they would remain abstinent. These figures combined resulted in 60% of adolescents either taking precautions during sex or remaining abstinent because of HIV/AIDS. This indicated that more than half of the adolescents surveyed have changed their behavior because of HIV/AIDS. Other responses to this phrase implied valid concerns about HIV/AIDS not directly associated with changes in behavior.

The majority of adolescents in the current research knew that AIDS was not transmitted through casual contact, such as touching or kissing someone with AIDS. These percentages combined with the percentages from the questions regarding the four main modes of transmission indicate that adolescents are knowledgeable about the transmission of HIV/AIDS. The AIDS educational program in this school may have focused on the modes of transmission,
thus the adolescents were knowledgeable and were able to answer these questions appropriately.

Participants were unsure about other basic information about AIDS. Approximately 60% of the sample said that someone could get AIDS by a nurse taking their blood. Another misconception by adolescents pertains to the AIDS virus as being the same organism that causes other venereal diseases. Only 50% of the participants knew the AIDS virus was not the same organism that causes venereal disease. This result can be compared with the study conducted by Walker (1992) in which 48% of the 152 participants did not know that AIDS was a different organism from those that cause other sexually transmitted diseases. These misconceptions have not been effectively addressed through AIDS education.

Knowledge about whether birth control pills protect from AIDS was assessed in the current study. Only 2 (2.6%) of the adolescents surveyed felt that birth control pills would serve as protection against AIDS. This finding compared to the study conducted by Ashworth et al. (1992) in which 17.4% of the adolescents surveyed felt that birth control pills would protect them against AIDS. The statistics of the current study regarding birth control
pills could be attributed to the mandated AIDS education since Walker's study in 1992.

Adolescents' attitudes about HIV/AIDS and those affected with the virus varied. When asked if people with AIDS got what they deserved, only 55% of the adolescents surveyed answered no. Of the remaining participants, nearly 40% answered sort of true and the remaining 5% said, "Yes, people with AIDS get what they deserve." Another survey question with similar results asked if homosexuals should be blamed for the AIDS problem. Approximately 46% of the adolescents surveyed answered no to this question, with 30.8% answering sort of true, and the remaining 23.1% answering yes. This reflects the attitudes of adolescents in a small rural area that have limited exposure to the effects of AIDS. These attitudes, according to Elkind's (1993) theory on family, may reflect the value system of their parents. Only 40% of the adolescents surveyed said their family had talked to them about AIDS. However, the discussion within the family could either be regarding the transmission and prevention of AIDS or the expression of negative feelings about those infected with the disease.
The theoretical framework that guided this study was that of Elkind (1988), a child psychologist and an advocate for the protection of children. Elkind (1993) believed that adolescents make decisions based on the personal fable and imaginary audience. This research revealed that adolescents are knowledgeable about the transmission and prevention of AIDS. The study did not assess behaviors, though many adolescents completed the open-ended phrases regarding sexual behaviors. Thirty-three (42%) of the adolescents surveyed said they would have to be careful in regard to sex, with many mentioning the use of condoms. This reflects that even though adolescents are knowledgeable about HIV/AIDS, many continue to have sex. Considering the personal fable as described by Elkind (1993), these adolescents probably do not think they will contract AIDS. They believed if they were careful when having sex that they will not contract the disease. This is also demonstrated using the results of the survey question that asked whether the adolescent worried about already being infected with AIDS. Only 4 (5.1%) of the 78 adolescents surveyed said they were worried about already having AIDS. Compared to the 33 adolescents that said they will be careful in regard to
sexual behavior, it can be assumed that most adolescents do not believe they will contract AIDS.

Conclusion

Based on the research findings, conclusions were made about the knowledge and attitudes of adolescents about HIV/AIDS attending high school in a rural area in the southeastern region of the United States. According to the statistics from the current study, adolescents were knowledgeable about the transmission and prevention of HIV/AIDS. The knowledge levels of the adolescents surveyed were reflected in the open-ended phrase that assessed what the adolescents would have to do differently because of AIDS. Thirty-three (42%) of the adolescents voluntarily said that because of AIDS they would have to be careful regarding sexual behavior. Fourteen (18%) of the participants said that because of AIDS they would remain abstinent. These figures combined resulted in 60% of the adolescents surveyed either taking precautions regarding sexual behavior or remaining abstinent. Participants were unsure about other basic information about AIDS, such as transmission of the virus by a nurse taking blood and if the AIDS virus was the same organism that causes venereal
disease. These areas have not been effectively addressed through AIDS education.

Attitudes about HIV/AIDS and those infected with the virus varied among the adolescents surveyed. Approximately 50% of the participants either answered true or sort of true that people with AIDS get what they deserve and that homosexuals should be blamed for the AIDS problem. Forty percent of the adolescents surveyed said their family had discussed AIDS with them. According to Elkind (1993), these attitudes may reflect the value system of the family.

Limitations

Several limitations were identified concerning this research study. The survey was modified to exclude questions about sexual behaviors including the use of condoms, the age the participants first had sexual intercourse, and the number of sexual partners of the participants. Several questions were deleted from the knowledge and attitudes section of the survey regarding condom use and sexual behavior. The ages of the participants ranged from 14 to 18 years which does not represent younger adolescents.
The researcher did not administer the questionnaire at the request of the superintendent; therefore, the method used by the faculty member who conducted the survey could have affected the answers. The adolescents may not have fully understood the directions for completing the survey. The adolescents were given 30 minutes to complete the survey but might have been given less or rushed by the faculty member to finish the survey. The presence of the faculty member may have affected the answers given by the adolescents. The participants may not have been honest when completing the survey.

Implications for Nursing

Many implications for nursing were established from this study. Because nurse practitioners treat adolescents, research was needed in this area to validate the knowledge and attitudes of this population about HIV/AIDS. With information derived from the current research, nurse practitioners can focus teaching efforts appropriately to help prevent the transmission of HIV/AIDS among adolescents.

The current research supported the theory of Elkind, a child psychologist and an advocate for children. Elkind (1993) believed that adolescents make decisions based on
the personal fable and imaginary audience. The current research consisted of a significant number of adolescents who said they had to be more careful regarding sexual behavior. This reflects that the adolescents surveyed are making decisions based on the personal fable. Adolescents believed that because of AIDS they have to be more careful regarding sexual behavior.

This research assessed knowledge and attitudes of adolescents about HIV/AIDS. According to the open-ended phrases, additional research is needed to assess adolescents' behaviors regarding HIV/AIDS. Adolescents were not asked direct questions about sexual behavior or IV drug use. Information derived from the research about sexual behavior was given by adolescents voluntarily. Research is needed to find out more information about adolescents' sexual behavior including the use of condoms, number of sexual partners, and the use of IV drugs. This research is significant because of the current HIV infection rates among adolescents. Nurse practitioners could benefit from the knowledge of adolescents' behaviors in rural areas. With this knowledge, nurse practitioners could screen and educate adolescents more effectively to
promote understanding about the transmission and prevention of AIDS.

Though results from the current research demonstrate that AIDS education in the participating high school has been effective, attitudes and behaviors contradict this knowledge. This fact indicates the need for varied teaching about HIV/AIDS. The role of the nurse practitioner can include assisting with education to help promote healthy behaviors and decision making by adolescents. With the efforts of both the education and nursing professions, adolescents can be informed about prevention of HIV/AIDS.

Recommendations

Considering the findings of the current research study, the following recommendations are made for additional research:

1. Replication of the current study to include a larger sample with younger participants.

2. Replication of the current study to include risk behaviors, such as sexual behaviors and IV drug use, for contracting HIV/AIDS.

3. Conduction of additional research to focus on peer pressure and how this affects adolescents' decision making
to further support Elkind's theory of the imaginary audience.

4. Conduction of research to assess adolescents' perceptions of the AIDS epidemic.

5. Conduction of additional research to assess where adolescents get accurate information about HIV/AIDS.

6. Conduction of additional research regarding information adolescents received from their parents about HIV/AIDS.

7. Conduction of additional research to assess methods used by health care providers to teach adolescents about HIV/AIDS.
References


APPENDIX A

APPROVAL OF THE COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION FROM MISSISSIPPI UNIVERSITY FOR WOMEN
Ms. Tracey Coin  
c/o Graduate Program in Nursing  
Campus  

Dear Ms. Coin:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research with the following caveat: the committee strongly urges you to maintain the highest standards of anonymity and confidentiality. The committee further strongly urges you to include in the proposal, so that parents will be adequately informed, a statement that their son's and daughter's attitudes about HIV/AIDS, sexual behavior and drug use will be explored in the questionnaire.

I wish you much success in your research.

Sincerely,

Susan Kupisch, Ph.D.  
Vice President  
for Academic Affairs

SK: wr

cc: Mr. Jim Davidson  
Dr. Mary Pat Curtis

Where Excellence is a Tradition
APPENDIX B

LETTER TO PRINCIPAL/SUPERINTENDENT
Dear Principal/Superintendent:

My name is Tracey Hickman. I am a registered nurse and a graduate nursing student at Mississippi University for Women. I am conducting a research study on knowledge and attitudes of adolescents about HIV/AIDS and current risk behaviors. I would like permission to survey 100 students between the ages of 13 and 19 years in Grades 9 through 12 during Health class about their knowledge and attitudes about HIV/AIDS and current risk behaviors. This study will help educators become more knowledgeable about the current knowledge, attitudes, and risk behaviors in the adolescent population. It can also serve as an evaluation of HIV/AIDS education and help to improve the program if necessary. I will also ask permission from the students and their parents to participate prior to the study.

The questionnaires and consent forms have been reviewed by the Committee on Use of Human Subjects in Experimentation at Mississippi University for Women. The questionnaires will be distributed to the students and will take approximately 30 minutes to complete. Participation will be voluntary, and the students will be informed of their rights as subjects and will be assured of confidentiality. I have enclosed the questionnaire and consent forms for your examination.

Please contact me if you have questions or concerns. My telephone numbers are (601) 284-9911 at home and (601) 293-3382 at work. I will make an appointment with you to further discuss this matter.

Thank you in advance for your time and consideration.

Sincerely,

Tracey Hickman, RN
APPENDIX C

CONSENT OF PRINCIPAL/SUPERINTENDENT
Consent Form

(Superintendent/Principal)

I understand that Tracey Hickman, a registered nurse and a graduate nursing student at Mississippi University for Women, will be conducting a research study in my school system. I understand that students will be asked to complete a questionnaire that will take approximately 30 minutes. This questionnaire will assess knowledge and attitudes of adolescents about HIV/AIDS and current risk behaviors. I understand that consent will be required from all students and their parents that participate in the study. I understand that students will be informed that participation is entirely voluntary and that they may withdraw at any time from the study. Students will be informed that participation or nonparticipation in this study will not have an impact on their school grade or their status at school. I understand that participants will be informed of their rights as subjects and will be assured of confidentiality.

I understand the above information and give my consent to Tracey Hickman to conduct the described study in my school system.

________________________________________
Superintendent/Principal Signature: 

________________________________________
School System (County): CORINTH

Date: 5/1/98
APPENDIX D

CONSENT OF PARENTS
Dear Parent,

My name is Tracey Hickman. I am a registered nurse and a graduate student at Mississippi University for Women. I am conducting a research study on knowledge and attitudes of adolescents about HIV/AIDS, which includes sexual behavior and drug use. This research will help educators in evaluating current teaching programs about AIDS prevention and its effects on the knowledge, attitudes, and current risk behaviors of high school students.

I am requesting permission for your son/daughter to participate in this study. Participation in this study includes completing a questionnaire that will assess your son/daughter’s knowledge and attitudes about HIV/AIDS and current risk behaviors. This questionnaire will take approximately 30 minutes to complete. All information given in this survey will be anonymous and kept strictly confidential. Students will not put their names on the questionnaire to ensure confidentiality. Participation is entirely voluntary and your son/daughter may withdraw from the study at any time. Your son/daughter’s participation or nonparticipation will not have any impact on their school grade or status at school.

Sincerely,

Tracey Hickman, RN

I have read the above letter. I understand the purpose of the study and the conditions of my son/daughter’s participation.

_________________________  _________________________
Date                  Signature of Parent

_________________________
Name of Student
APPENDIX E

CONSENT OF STUDENTS
Dear Student,

My name is Tracey Hickman. I am a registered nurse and a graduate student at Mississippi University for Women. I am conducting a research study on knowledge, attitudes, and current risk behaviors of adolescents about AIDS. This research will help educators have a better understanding of teaching programs about AIDS prevention on knowledge, attitudes, and risk behaviors of high school students. I would like to ask you to participate in this study. The study will require completion of a questionnaire that will take approximately 30 minutes.

This questionnaire is not a test and will not have an impact on your school grade or status at school. All information given in this survey will be anonymous and kept strictly confidential. You will not put your name on the questionnaire, and there will be no way to find out your name. Participation is entirely voluntary, and you may withdraw from this study at any time.

Sincerely,

Tracey Hickman

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

__________________________  __________________________
Date                              Signature of Student
APPENDIX F

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 do not put your name anywhere on the questionnaire.

Instructions: Read each question carefully and circle the correct answer.

Part I. Demographics

1. How old are you?
   ____ 13 years  ____ 17 years
   ____ 14 years  ____ 18 years
   ____ 15 years  ____ 19 years
   ____ 16 years

2. What is your sex?
   ____ Male
   ____ Female

3. What is your race?
   ____ White (non-Hispanic)
   ____ Black (non-Hispanic)
   ____ Hispanic
   ____ Asian
   ____ Other

4. What is the highest grade you expect to complete in school?
   ____ May not finish high school
   ____ Will finish high school
   ____ Will get 2-year technical degree
   ____ Will get college degree
   ____ Will get degree beyond college

5. Have you had a class about AIDS during this school year?
   ____ Yes
   ____ No
   ____ I don’t remember
Part II. Knowledge

Instructions: Read questions carefully and circle T if you think the statement is true, circle F if you think the statement is false, and ? if you are not sure if it is true or false.

1. You could get AIDS from having your blood taken by a nurse.
   T       F       ?

2. You can get AIDS by touching or being near a person with AIDS.
   T       F       ?

3. AIDS is caused by the same virus that causes venereal disease (VD).
   T       F       ?

4. You can get AIDS by having sexual intercourse with someone who has the AIDS virus.
   T       F       ?

5. The AIDS disease is caused by the human immunodeficiency virus.
   T       F       ?

6. People with AIDS may get cancer because the AIDS virus harms the body’s immune system.
   T       F       ?

7. You can get AIDS from a mosquito bite.
   T       F       ?

8. Only condoms made of latex are effective against the transmission of the AIDS virus.
   T       F       ?

9. You can get AIDS by sharing needles when shooting street drugs (IV drug use).
   T       F       ?

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.
    T       F       ?
11. A baby could be born infected with the AIDS virus if its mother is infected with the virus.
   T   F   ?

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.
   T   F   ?

13. When it comes to sex, the most effective way to prevent the spread of AIDS is to avoid sexual intercourse.
   T   F   ?

14. There is a screening test that tells you if donated blood is infected with the AIDS virus.
   T   F   ?

15. An effective vaccine that will prevent AIDS recently has been developed.
   T   F   ?

16. You could get AIDS by using the comb or brush of someone who is infected with the AIDS virus.
   T   F   ?

17. AIDS can be cured if treated early.
   T   F   ?

18. You can get AIDS from someone who is infected with the AIDS virus, even if that person has no symptoms of AIDS.
   T   F   ?

19. A birth control pill will protect you against AIDS.
   T   F   ?

20. If you get the AIDS virus, you are likely to get sick from AIDS within the next 6 months.
   T   F   ?
Part III: Attitudes

Instructions:
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.
   Yes   ST   No

2. I think that kids who have the AIDS virus should be kept out of school.
   Yes   ST   No

3. I would feel okay touching someone with AIDS.
   Yes   ST   No

4. Homosexuals should be blamed for the AIDS problem.
   Yes   ST   No

5. I am very nervous about AIDS.
   Yes   ST   No

6. I would feel okay going to the home of someone with AIDS.
   Yes   ST   No

7. I would swim in a pool even if I knew a person with AIDS was swimming in it too.
   Yes   ST   No

8. Because of AIDS, falling in love is scarier.
   Yes   ST   No

9. My family has talked about AIDS.
   Yes   ST   No

10. I am worried that I already might have AIDS.
    Yes   ST   No

11. I would worry about getting AIDS from kissing someone.
    Yes   ST   No
12. I would worry about getting AIDS from having a nurse take my blood.
   Yes    ST    No

13. I would be afraid of getting AIDS if a kid with AIDS was in my class.
   Yes    ST    No

14. 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.
   Yes    ST    No

Please answer the following questions:

1. What upsets me most about AIDS is . . .

2. Because of AIDS, I now have to . . .
Dear Colleague:

Enclosed is the survey and related articles you requested.

You may use the survey with appropriate populations with whom you are working. Because the development of this instrument was funded in part by grants from federal agencies and private foundations, if this survey is used, please cite its origin appropriately.

Thank you for your interest, and let me know if I can be of any further assistance.

Larry K. Brown, M.D.