HIV transmission risk behaviors of HIV-positive adolescents in Mississippi

Kristi A. Henderson

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HIV TRANSMISSION RISK BEHAVIORS
OF HIV-POSITIVE ADOLESCENTS
IN MISSISSIPPI

by

KRISTI A. HENDERSON

A Thesis
Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Science in Nursing in the Division of Nursing Mississippi University for Women

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HIV Transmission Risk Behaviors
of HIV-Positive Adolescents
in Mississippi

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Abstract

Risk behaviors for transmission of the human immunodeficiency virus are prevalent among adolescents. One outcome of continued participation in risk behaviors is increased prevalence of HIV. Based on Fishbein and Ajzen’s Theory of Reasoned Action (1975), a descriptive design was utilized to examine the following research question: What are the HIV transmission risk behaviors of HIV-positive adolescents? The Henderson Risk Behavior Participation Survey was utilized to examine HIV transmission risk behaviors among adolescents already infected with HIV. The sample for this study was comprised of 24 adolescents age 11 to 21 years who were drawn from two infectious disease clinics in Mississippi. Data analysis revealed that 66% of the subjects continued to participate in sexual intercourse regardless of the HIV diagnosis. Seventy percent of the participants were involved with one to three sexual partners. Greater than 23% of participants revealed involvement in oral and anal sex since the HIV diagnosis and 45% were not using
condoms. Only 29% of the participants had notified sexual partners of the HIV positive diagnosis while 37% of them reported inquiring about a partner’s HIV status. Ninety-five percent of participants had received post-diagnosis education on risk behaviors. The researcher concluded that there was a continuation of participation in HIV transmission risk behaviors among HIV-positive adolescents regardless of education. Implications for nursing science include the need for more preventive strategies aimed toward adolescents. These findings emphasize the need for further research on HIV-positive adolescents with attention to the psychosocial issues of adolescents rather than exclusively educational interventions.
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Chapter I
The Research Problem

In 1970 the human immunodeficiency virus first came to the attention of the Centers for Disease Control and Prevention (CDC) (1996). According to Lewis and Collier (1992), the human immunodeficiency virus (HIV) “ranges from an asymptomatic state to the severe immunosuppression and related opportunistic diseases associated with acquired immunodeficiency syndrome (AIDS)” (p. 142). The virus is transmitted primarily through specific sexual practices and exposure to infected blood (Lewis & Collier, 1992). As of June 1996, the CDC reported 548,102 men, women, and children were diagnosed with AIDS and more than 80,000 people were diagnosed with HIV (CDC, 1996). However, this projection of the prevalence of HIV/AIDS cases is underestimated. According to the CDC (1996), only 26 states have laws requiring that HIV and AIDS cases be reported. The prevalence of HIV infection in the United States was between 650,000 and 900,000 in 1992 (Karon et al., 1996). Estimates by the World Health Organization
(1992) state that there will be 30 to 40 million cases of HIV by the year 2000. Since the beginning, HIV has spread rapidly among adolescents. Young, Feldman, Brackin, and Thompson (1992) found that in Mississippi, the seroprevalence rate for HIV infection in adolescents was 4.0 per 1,000. The National AIDS Commission has reported a trend of increasing HIV infections in rural areas which is reflected in the population demographics of Mississippi (Young et al., 1992). Therefore, the purpose of this study was to examine the HIV transmission risk behaviors of HIV-positive adolescents in Mississippi.

Establishment of the Problem

Many aspects of HIV remain a mystery to health professionals, researchers, and those afflicted with the disease. New research brings new recommendations and treatments leading to much confusion not only to health care professionals but to the general public. Education has focused on the groups found to be at highest risk which could explain some of the recent changes in the prevalence of HIV/AIDS.

According to the CDC (1996), there has been a slight decline in AIDS cases in infants and homosexual men. The reasons for the decline in these specific groups are
unknown. There continues to be an increase in prevalence in African-Americans, Hispanics, women, and adolescents (Mississippi State Department of Health [MSDH], 1996). In 1991 approximately 60% of AIDS cases were attributed to men who had sex with men, but a sharp decline was seen in this risk group to 40% in 1995. However, heterosexual transmission in Mississippi has risen from approximately 5% in 1991 to 25% in 1995.

Adolescent cases of HIV/AIDS, especially among African-Americans, are increasing rapidly nationwide. The trend is also seen in Mississippi. In Mississippi, there has been a cumulative total of 216 cases of HIV and 25 cases of AIDS among adolescents age 13 to 19 years (MSDH, 1996). From 1995 until the present there has been an increase in the percentage of HIV/AIDS cases seen in Mississippi in the adolescent age group (MSDH, 1996). The reasons that adolescents continue to have an increase in prevalence despite educational efforts are not fully understood. Research must focus on this group to prevent the further spread to other teens.

Studies show that adolescents have numerous extraneous influences on their behaviors, such as peer pressure and parental influences (Gerrard, Gibbons,
Adolescents are adapting their own values and lifestyles and often learn by trial and error (Lewis & Collier, 1992). This experimentation has led to several risk behaviors which are prevalent among adolescents which lead to the transmission of HIV. Three general modes of HIV transmissions involve the risk behaviors of sexual intercourse, contact with blood and blood products, and perinatal transmission (Lewis & Collier, 1992).

The concept of HIV risk behaviors must be fully examined in future research to include assessment of behaviors, cognitions, and attitudes related to the decision to participate in risk behaviors (Gerrard et al., 1996). The spread of HIV among adolescents could be controlled by eliminating risk behaviors. The alarming suspicion is that adolescents are continuing to have unprotected sexual intercourse and multiple partners and are using intravenous drugs (Levy et al., 1995; Osborn & Rogers, 1994; Sowell, Seals, & Cooper, 1996). Researchers and health providers agree that reduction or elimination of these risk behaviors would almost surely decrease the prevalence and spread of the HIV infection. However, little empirical data exist in which the risk behaviors
of adolescents already infected with HIV have been extrapolated. The goal of this study was to explore those risk behaviors among HIV positive adolescents.

**Significance to Nursing**

To eventually improve quality of life for adolescents, the nursing community must gain knowledge regarding the HIV transmission risk behaviors of HIV positive adolescents. By isolating the risk behaviors which are prevalent, proper interventions can be developed to change those behaviors. Until there is an understanding of these existing risk behaviors in HIV-positive adolescents, the continued efforts to decrease the prevalence of HIV will fail.

**Nursing research.** Nurse practitioners have a unique opportunity to produce an impact in the area of HIV research. Currently, limited research and empirical data exist on HIV-positive adolescents. The identification of adolescent risk behaviors, knowledge levels, and beliefs is necessary. The unique characteristic of adolescents and the prevalence of HIV emphasize the need for further research. One gap found in the literature was in the area of HIV-positive adolescents. Remaining current on related
research findings and new protocols in adolescent care are essential for the nurse practitioner to be able to guarantee adequate care.

**Nursing theory.** This study serves to advance the establishment of Fishbein and Ajzen’s Theory of Reasoned Action (1975) for nursing as an appropriate tool for identifying, assessing, and understanding adolescent behaviors. This theory can provide an understanding of the concept of social behaviors. The theory suggests that adolescents will participate in behaviors knowing the possible harmful consequences of this behavior.

**Nursing practice.** With the prevalence of HIV/AIDS cases, nurse practitioners will be confronted with the care of these patients. Practitioners working with adolescents have an additional challenge of social and behavior characteristics seen in this age group which complicates the diagnosis of HIV/AIDS. An HIV diagnosis brings with it all the related problems of dealing with a chronic illness that also carries much stigma. Information must be gathered in practice to identify how health care providers can defeat peer pressure and the social norms of adolescents, thereby decreasing the participation of HIV transmission risk behaviors.
Nursing education. As the epidemic of HIV continues, graduates of schools of nursing can be guaranteed an encounter with this disease. Findings from this study may contribute to the development of a nursing curriculum that includes a focus on care of the HIV/AIDS patient. Education on specific interventions for HIV-positive adolescents needs to be addressed in nursing programs. Graduate level nurse clinicians and practitioners must be aware of the devastating effects that this chronic disease has not only for the adolescent but the families, friends, and coworkers.

Theoretical Framework

The study was based on Fishbein and Ajzen's (1975) Theory of Reasoned Action. Fishbein and Ajzen introduced the Theory of Reasoned Action which is based on predicting social behaviors. Fishbein and Ajzen proposed that all people utilize their knowledge and rationalize their thoughts before behaving. The authors state that the ultimate goal is to predict and understand behavior (Ajzen & Fishbein, 1980). Utilizing the theory when assessing adolescents can be essential since it assumes a causal chain that links beliefs to behaviors. The first step identified in this theory is to identify the behavior
under examination (Ajzen & Fishbein, 1980). During this step, action, target, context, and time must be evaluated (DiClemente & Peterson, 1994). “Every action occurs with respect to a target, in a given context, and at a given time” (DiClemente & Peterson, 1994, p. 64). Any change in one of these elements changes the behavior of focus (DiClemente & Peterson, 1994).

Fishbein and Ajzen (1975) also stated that most behaviors are under volatile control. Therefore, the intention to perform or not perform a certain behavior is the first determinant of behavior. Intention is defined in regard to the same four elements that were used to define behavior. Changing intentions to perform a behavior must be the first step toward changing a behavior. For example, DiClemente and Peterson (1994) state that,

... if the goal of an intervention is to increase homosexual men’s condom use for oral sex with their long-term partners, the intervention should be designed to increase homosexual men’s intention to “always use condoms for oral sex with my long-term partner” and not to increase their intentions to “avoid AIDS” or “practice safe sex.” (p. 65)

However, changing intentions must be utilized with other factors in order to produce change.

Two factors affecting a person’s intentions are personal positive or negative feelings and social
influences (DiClemente & Peterson, 1994). The Theory of Reasoned Action labels these factors as attitude toward the belief and subjective norm. If a person has a positive attitude toward the performance of a behavior and believes others think he or she should perform it, then the intention will be present. However, intentions, attitudes, and norms are just three of the factors affecting a change in behavior.

The Theory of Reasoned Action stated that for a change to occur there must be a change in cognitive function (Ajzen & Fishbein, 1980). "To develop a successful intervention, one must first identify and examine the behavioral belief and outcome evaluations underlying the attitude as well as the normative beliefs and motivations to comply that determine the subjective norm" (DiClemente & Peterson, 1994, p. 66). The relationship between attitude and behavioral beliefs also was presented in the Theory of Reasoned Action. If an individual believes that the outcome of performing a behavior is positive, then the person will have a more favorable attitude toward this behavior.

The behaviors under investigation in the study were any that led to the transmission or spread of HIV. The
theory suggested that an adolescent’s intention to participate in HIV transmission risk behaviors is a function of his or her attitude, positive or negative, toward the participation in the risk behavior and his or her perception of what significant others think he or she should do. Identification of risk behaviors is the first step toward establishing causation and ultimately developing nursing interventions aimed at changing these behaviors. It is, therefore, appropriate that Fishbein and Ajzen’s (1975) Theory of Reasoned Action be utilized as the theoretical framework for the study.

Assumptions

For the purposes of the study, the following assumptions were made:

1. The first step toward changing behavior is to identify the behavior (Fishbein & Ajzen, 1975).

2. Adolescents are participating in risk behaviors which may have potential harmful consequences.

3. HIV-positive adolescents’ risk behaviors can be empirically measured.
Statement of the Problem

Research has indicated that HIV transmission among adolescents continues to rise at an alarming pace. Because of the low incidence of detection and reporting, adolescents may be the largest reservoir of undetected HIV in the United States. Yet no research was discovered regarding the HIV transmission risk behaviors among HIV-positive adolescents. Until there is research exposing these behaviors, proper interventions will not exist. Therefore, the purpose of this study was to examine the HIV transmission risk behaviors of adolescents diagnosed with HIV.

Research Question

The following research question guided this study:

What are the HIV transmission risk behaviors of HIV-positive adolescents?

Definition of Terms

For the purposes of the study, the following terms were defined:

HIV transmission risk behaviors: the participation in activities which have been recognized to transmit HIV from one individual to another. Operationally, HIV transmission
risk behaviors will include adolescents' responses regarding abstinence or participation in sexual intercourse, number of sexual partners, use of condoms, homosexual or heterosexual relationships, participation in anal or oral sexual activity, and use of intravenous drugs on the Henderson Risk Behaviors Participation Survey.

HIV-positive adolescents: persons between the onset of puberty and the beginning of young adulthood who have HIV. Operationally, HIV-positive adolescents refer to individuals between the age of 11 and 21 years whose charts show the diagnosis of HIV or AIDS for at least 3 months duration. This included clients of either a public sexually transmitted disease clinic or an infectious disease clinic in the Southeastern United States.

Summary

This chapter provided an introduction to the research problem: What are the HIV transmission risk behaviors of HIV-positive adolescents in Mississippi? The need for this research was addressed along with the significance it would have to nursing science. The research question was stated, and the theoretical framework for the study was presented. Principal terms were defined, and the assumptions upon which the study was based were stated.
In Chapter II, current research relevant to HIV-positive adolescents and risk behaviors associated with HIV/AIDS is reviewed and their pertinence to this study is discussed. In Chapter III, a detailed description of the design of the study is presented, revealing how the research problem was empiricalized.
Chapter II

Review of the Literature

The literature is limited in regard to risk behaviors of HIV-positive adolescents, but literature regarding related topics strongly recommend the need for further research in this area. Emphasis has been placed on interventional research and the elimination of risk behaviors associated with the transmission of HIV. Even with the vast research focused on HIV, the incidence and prevalence of the disease continue to grow. The fastest growing rate is among the adolescent population (MSHD, 1996). The reasons why the adolescent population is continuing to have an increased prevalence of HIV are unknown but may be related to the recent focus on educating homosexuals about the disease. Current research must focus on adolescents and their unique characteristics which impact this population.

Many studies suggest that HIV transmission risk behaviors are prevalent among adolescents and that adolescents know the risks involved with participation in
these behaviors (Basen-Enquist & Parcel, 1992; Gerrard et al., 1996; Zimet et al., 1992). To begin to understand adolescents, health care providers must know what risk behaviors are present in this population in order to educate and counsel on the consequences. Identification of the risk behaviors which exist among HIV-positive adolescents is the first step in changing the prevalence of these behaviors.

This chapter will present research related to the HIV transmission and risk behaviors associated with the disease. The available related research which addressed the adolescent population is also presented. This review of the related research provides support for the current research endeavor.

Basen-Enquist and Parcel (1992) conducted a descriptive study related to the problem of educating adolescents to reduce their sexual risk behaviors. Utilizing a sample of 1,720 ninth graders enrolled in a social studies course in Texas, the questionnaire was mailed to 17 school campuses. The school district personnel administered the questionnaire in the classroom and responses were anonymous.
The purpose of the Basen-Enquist and Parcel (1992) research was twofold: first, to determine if attitudes, norms, self-efficacy, and intentions were associated with behaviors, and second, to determine whether self-efficacy makes a unique contribution to understanding condom use and choices about having or abstaining from sexual intercourse. These purposes supported two main research questions. The first question asked if attitudes, norms, self-efficacy, and intentions of adolescents affected their sexual risk behaviors; and the second asked if self-efficacy contributes to the understanding of condom use and to choices about having or abstaining from sexual intercourse.

Attitudes were measured through use of the National Adolescent Student Health Survey (NASHS) with high scores indicating more conservative attitudes and a positive attitude toward condom use. Norms were examined utilizing questions from the NASHS. Norms were identified by assessing how friends of the student felt about people their age having sexual intercourse and using condoms. Self-efficacy about making the decision to have or to abstain from sexual intercourse and self-efficacy about condom use was assessed by questions from an instrument on
which participants were asked to rate their confidence that they could implement particular HIV-preventive behaviors. Behaviors were measured by the number of sexual partners an individual reported he or she had the year prior to the survey.

Data analysis was accomplished by utilizing descriptive statistics which examined the demographics of the sample. Pearson correlation coefficients were used to compare the decision to have or to abstain from sex and to assess the condom use related to both their relationships to each variable. Multiple regression was used to test the significance of the contribution of self-efficacy to the prediction of intention and behavior.

The findings related to the decision to have or to abstain from sex were \( n = 1,595, p < .001 \) in all areas including attitude, norm, self-efficacy, intention, and number of partners. Intercorrelations were significantly related to the number of partners at the \( p .001 \) level. These findings suggested that there was a positive relationship between the decision to have or to abstain from sex and the adolescent’s attitude, norm, self-efficacy, and intention. Results related to condom use and attitude, norms, self-efficacy, intention, and condom use
frequency were $n = 743$, $p < .001$ in all areas except for number of partners which was not significant. According to Pearson’s correlation coefficient, intercorrelations existed among the independent variables ranging from .19 (attitudes-self-efficacy) to .42 (attitudes-norms). A relationship between the independent variables and frequency of condom use (.22 to .34) and the correlation of condom use and number of partners was not significant ($r = -.02$). Therefore, a significant relationship existed between the intention to use of condoms and the participants’ attitudes, norms, self-efficacy, and behaviors. If the participant believed that condoms should be used with sexual intercourse, if the participant believed his or her friends would use condoms, if the participant believed he or she could get their partner to use a condom, and if in past relationships a condom was used, then the participant was more likely to have the intention to use condoms in the future.

Basen-Enquist and Parcel (1992) concluded that attitude, norms, and self-efficacy related to the number of sexual partners and condom use were significantly correlated. However, there was no significant relationship between condom use and the number of partners. Self-
efficacy was found to be significantly correlated to sexual intentions and behaviors such as condom use. Attitudes, norms, and self-efficacy were found to be related to the decision to have or abstain from sexual intercourse. Finally, the researcher concluded that attitude had the strongest relationship to intention. Behaviors, attitude, and self-efficacy also were significantly associated with condom use intentions. The results suggest that self-efficacy and variables of the Theory of Reasoned Action are associated with IV-related sexual behavior in adolescents (Basen-Enquist & Parcel, 1992).

According to Basen-Enquist and Parcel (1992), it is difficult to determine which variable is the most significant in causing the behaviors within this particular study. The authors state that further research is needed to develop a better model of the factors affecting adolescents’ sexual behavior. Additionally, further research is recommended to provide a better understanding of the underlying psychosocial variables that lead to risk-taking behaviors. Finally, research needs to be conducted which examines behaviors of adolescents diagnosed with HIV. Such research would add
needed information which would ultimately provide a more adequate teaching and intervention for youth. One of the problems with educating adolescents regarding risk behaviors has been the failure to recognize exactly which behaviors HIV-positive adolescents are participating in after their diagnosis. The proposed study will begin to fill this knowledge gap by identifying these HIV transmission risk behaviors of HIV-positive adolescents.

In related studies, researchers have focused on the belief that cognitions guide decisions to engage in risk and preventive behaviors, but this is an incomplete examination of the complex problem of adolescent risk behaviors. According to Gerrard et al. (1996), minimal research exists on “the reciprocal nature of the relation between health cognitions and health behavior” (p. 344). The examination of this reciprocal relationship in adolescents, as explored by Gerrard et al., began helping health care professionals create more effective interventions to change risk behaviors of adolescents.

The purpose of the Gerrard et al. (1996) research was twofold. The first purpose was to examine the hypothesis that engaging in risk behaviors influences health cognitions, and the second was to address the question of
how adolescents can continue to engage in behaviors that they apparently know are putting them at risk. The researchers elected to examine this reciprocal relation between health cognitions and adolescents' participation in three risk behaviors: reckless driving, drinking, and smoking.

Adolescents' participation in risk behaviors was examined by utilizing a questionnaire which asked three questions regarding how much the individual participated in each of the risk behaviors. The participants were asked the number of times he or she had driven recklessly in the last 3 months and were asked to pick from five choices ranging from never to regularly. This same question was asked in relation to smoking and drinking alcohol. Perceived vulnerability was examined by asking, "How likely is it that your driving will cause a car or motorcycle accident that injures someone at some time in the future?" and "Compared to others your age, how likely is it that your driving will cause a car accident that injures someone at some time in the future?" (Gerrard et al., 1996, p. 347). The same questions were applied to the other two risk behaviors of drinking and smoking. The questions asked in the same format examined the likelihood
of having a smoking-related illness in the future and the likelihood of having a drinking problem. Avoidance of thoughts about health and safety were defined by examining the responses to one question: “How likely is concern for your health and safety to influence your drinking behavior, smoking habits and driving?” (p. 346). Estimated prevalence was operationalized by responses to two questions; first “How many of your friends drink?” and second “How many people your age do you think smoke?” (Gerrard et al., 1996, p. 348).

The longitudinal descriptive study initially involved 231 males and 246 female adolescents in rural Iowa who completed the first two periods of data collection. Two hundred and twenty boys and 233 girls completed the third session of data collection and were included in follow-up analyses. Half of the adolescents were in the eighth grade and half were in the 10th grade. Mean age at the initial time of data collection was 14. A questionnaire was used by a trained interviewer in the families’ homes to gather data. The questionnaires were administered at approximately one-year intervals. Adolescents were asked to complete the questionnaire in privacy and confidentiality was stressed. Data analysis was
accomplished utilizing descriptive statistics to examine
the percentage of participants reporting risk behavior and
behavior change at each data collection period.

Hierarchical regression analyses were used to assess
the effect of the first data collection cognitions on
changes in behavior between the first and second data
collection periods. The major findings from these analyses
were divided by the researchers into four main categories.

In the first category, related to behavior and
behavior change, there were significant increases in the
proportion of adolescents engaging in all three risk
behaviors from the first data collection to the second and
from the second to the third data collection (p < .01). In
the second category related to changes in risk behavior,
as a function of health cognitions, Gerrard et al. (1996)
found that the adolescents’ reckless driving, drinking,
and smoking at the first data collection were significant
predictors of these behaviors at the second data
collection (β = .49, .64, and 49, respectively, p < .001).

In the third category, related to changes in
cognitions as a function of behavior change, findings
included changes in reckless driving behavior from the
first and second data collection times predicted changes
in perceptions of vulnerability to the negative consequences of reckless driving \((\beta = .28, p < .01)\), in estimates of the prevalence of reckless driving \((\beta = .27, p < .01)\), and in the influence of health and safety concerns \((\beta = -.23, p < .01)\). The researcher found significance for all three driving-related cognitions: influence of health and safety concerns \((p < .01)\), perceptions of vulnerability \((p < .001)\), and prevalence estimates \((p < .001)\). Differences in cognitions from the first and second data collections were significant. Adolescents who increased risk behavior increased their perceptions of their personal risk as well as their estimates of the prevalence of reckless driving among their peers but reported reduced influence of concerns about health and safety \((p < .01)\). In contrast, the adolescents who decreased risk behaviors showed a significant increase in reported influence of health and safety concerns \((p < .01)\), a marginally significant decrease in perceptions of risk \((p < .10)\), and were the only group that showed a tendency to decrease their estimates of the prevalence of reckless driving in spite of the actual increase of reckless driving among their peers. All other groups recognized the increase in
prevalence of this risk behavior (p < .05). Except for the no-risk group, subjects clearly overestimated the prevalence of reckless driving among their peers (Gerrard et al., 1996).

Increases in the variable of drinking were associated with increases in risk perception (β = .23, p < .01), increases in prevalence estimates (β = .23, p < .01), and decreases in the influence of health and safety concerns (β = -.29, p < .01). The researchers also determined significance in perceptions of vulnerability (p < .001), estimated prevalence (p < .001), and influences of health and safety concerns (p < .01) related to drinking. All groups showed an awareness that the level of drinking among their peers had risen from the initial data collection period to the second collection (p < .001). The no-risk group was the only group that did not overestimate the prevalence of drinking among peers at both the first and second data collection times.

Related to the risk behavior of smoking, few adolescents had changed their frequency of smoking. Increases in smoking were associated with increases in risk perception (β = .35, p < .01), increases in prevalence estimates (β = .11, p < .05), and decreases in
influence of health and safety concerns ($\beta = -.20$, $p < .01$). Findings related to perceptions of vulnerability and prevalence estimates were $F(3, 466) = 10.02$, $p < .01$, and $F(3, 467) = 5.46$, $p < .01$, respectively (Gerrard et al., 1996).

The fourth category was related to the association between changes and cognitions in which the pattern of correlations between risk perceptions and influence of concern about health and safety was consistent. Increases in risk perceptions were associated with a decrease in the reported influence of health and safety concerns; $r$ ranged from $-.15$ ($p < .01$) for drinking to $-.10$ ($p < .05$) for reckless driving. Prevalence estimates were not correlated with influence of health and safety concerns. Two of the three correlations between estimated prevalence and perceptions of vulnerability were not significant; the exception was reckless driving, $r = .11$, $p < .05$. Last, self-reported influence of health and safety at the second data collection time was a significant predictor of all three risk behaviors at the third data collection ($p < .01$). Estimated prevalence significantly predicted changes in both drinking and smoking above and beyond the influence of health and safety ($p < .01$), such that high
prevalence estimates predicted increases in drinking and smoking.

Gerrard et al. (1996) drew several conclusions from these findings. Adolescents' perceptions of vulnerability to the negative consequences of specific risk behaviors increase as their participation in these behaviors increases. Adolescents apparently understand the relationship between risk behaviors and vulnerability to negative outcomes and apply this knowledge to themselves. Gerrard et al. concluded that the reason adolescents engage in risk behavior in spite of their awareness of the potential consequences is not denial. These adolescents instead apparently engage in cognitive manipulations that allow them to deal with the inherent contradiction between their behavior and their knowledge of the danger. These data also provided evidence that increases in risk behavior are associated with adjustments in health cognitions. Health cognitions affect participation in health risk behaviors and engaging in health risk behaviors is associated with subsequent changes in health cognitions. The authors' conclusions regarding the impact of risk behavior on cognitions are that a variety of influential cognitions shift as a result of involvement in
various kinds of risk behaviors. Gerrard et al. (1996) stated that adolescents who enjoy a specific risk behavior will begin to associate with others who engage in that behavior leading to an increased prevalence estimate. The researchers recommended that further studies include utilizing a wider range of age groups and the development of more complex methodologies for examining the link between behaviors and cognition. Current researchers seek to explore the concept of risk behaviors especially related to adolescents. The understanding of why adolescents continue risky behaviors is essential in order to provide adequate care.

Findings from Gerrard et al.'s (1996) study are important to the proposed study which will examine the HIV transmission risk behaviors of HIV-positive adolescents. While the Gerrard et al. study did not specifically explore HIV risk behaviors, their findings serve to underscore the importance of identifying adolescents' HIV risk behaviors that exist since the findings indicate that adolescents are unlikely to change behaviors based on awareness of risk alone.

In the most important related study identified to date, Wiktor et al. (1990) endorses a focus on risk
elimination and reduction based on one’s HIV status. The researchers reviewed previous studies showing the decrease in the seroconversion rates of homosexual men since 1982 until 1988 after HIV antibody testing was available. The authors then theorized that this knowledge could lead to safer sexual practices. With knowledge of one’s HIV serostatus, individuals can select partners based on their HIV status deciding then whether to be exposed to risk of acquiring HIV or spreading HIV to someone with the opposite HIV status.

The purpose of the research was to first examine whether individuals know their own HIV serostatus and their partner’s status. Secondly, if the serostatus is known, is this information used to guide sexual-related decisions. Sexual activity was defined as all forms of interaction resulting in ejaculation including mutual masturbation. However, completely safe sex was defined as abstinence from sexual activity or mutual masturbation only and a monogamous concordant relationship. Less safe sex was defined by the following three criteria: (a) the individual and partner always use a condom, (b) there was a mandatory inquiry about HIV status, and (c) an individual would refuse any unknown or discordant status
partner. Unsafe sex was defined as all other sexual activity not included in the other two categories.

Wiktor et al.'s (1990) prospective, longitudinal, and descriptive study examined homosexual men from two U.S. cities and Denmark from 1982 until 1987. The U.S. participants were eligible to participate if they were consecutive outpatients at two physicians' offices in Washington, D.C. and New York City. From the cohort in the U.S. (n = 245), 85 individuals were originally HIV positive, 46 seroconverted by 1987, 42 individuals converted to AIDS, 25 died of complications of AIDS, and 2 died of other non-related causes. During the study, 84 were lost to follow-up in the U.S., leaving 134 available for study in 1987. The Danish cohort (n = 258) was collected by invitation through a newsletter sent to members of a national homosexual organization. From this original cohort, 23 people were HIV positive from the beginning, 25 participants seroconverted, and 119 participants were lost to follow-up.

The methods of the study after collection of the sample consisted of a self-administered questionnaire and laboratory work. The questionnaire included questions on demographics, drug use, medical history, and sexual
behavior. The lab work consisted of testing for HIV antibodies by enzyme-linked immunoassay with confirmation by Western blot. Lab results and questionnaires were kept confidential with results kept only with the primary physician. The lab work and questionnaires were administered approximately yearly from 1982 until 1987. The participants were encouraged to receive their HIV test results from their physicians but were not required to do so. In the final questionnaire in 1987, the participants were also asked about their sexual practices and about their knowledge of their HIV status.

Analysis of the data collected was done after dividing the participants into three groups of HIV positive, HIV negative, and unknown HIV status. Utilizing the two-tailed $\chi^2$ test, Fisher’s exact test, and Wilcoxon rank-sum test the data were analyzed. A comparison of sexual activity characteristics between the two cohorts and the three HIV groups was analyzed.

Wiktor et al. (1990) found many similarities between the U.S. and Denmark cohorts. The subjects were predominantly white with a median of 4 years of college education. The median age was similar with the U.S. median age of 39 years the Denmark median age of 37 years.
However, differences were found in knowledge of HIV status and sexual activity. Thirty-eight percent of the U.S. participants and 19% of the Denmark participants knew they were HIV positive. Forty-six percent of U.S. participants and 61% of Denmark participants knew they were HIV negative and 16% vs. 20% of the participants were unsure of their HIV status. Not only were twice as many U.S. participants aware of being HIV positive, but there was a 12% greater participation in sexual activity by U.S. participants than those in Denmark (86% and 74%, respectively). The Denmark participants were found to be more active in insertive and receptive anal intercourse without condom use than the U.S. participants who were also sexually active. The U.S. cohort had three times as many median sexual partners as the Denmark cohort had in the last year.

Comparing activities among the three groups, HIV positive (n = 51, 26), HIV-negative (n = 61, 85), and HIV-status unknown (n = 22, 28) revealed many differences between not only the groups but the geographical cohorts. Of the HIV-positive group, 80% of U.S. participants and 77% of Denmark participants were sexually active. There was an increase in the sexual activity of the HIV-negative
participants in the U.S. but a decline in those in Denmark. Only 68% of the Denmark participants whose HIV status was unknown were found to be sexually active whereas 86% of the U.S. participants with unknown serostatus were sexually active. Wiktor et al. (1990) concluded that in the U.S. the largest percentage of sexually active individuals were HIV negative, but in Denmark the largest percentage was found in the HIV-positive group. In the U.S., only 31% of HIV-positive participants, 25% of HIV-negative participants, and 21% of HIV-status unknown participants always used a condom. In Denmark 33% of HIV-positive participants, 16% of HIV-negative participants, and 11% of HIV-status unknown participants always used condoms with sexual activity. Another finding was that a lower percentage of HIV-positive individuals than HIV-negative individuals in the U.S. always asked their partner's HIV status (22%, 25%). However, in Denmark 33% of HIV-positive participants and 26% of HIV-negative participants always asked their partner's HIV status.

With further analysis Wiktor et al. (1990) determined that Danish men were more likely than U.S. men to be practicing completely safe sex (53% vs. 32%, \( p < .0007 \))
but less likely to be practicing less safe sex (9% vs. 18%, p = .04). Fifty percent of the U.S. men and 38% of the Danish men practiced unsafe sex (p = .07). From the U.S. subjects, there was a significant finding of 20% of HIV-positive participants who had anal intercourse with other known HIV-positive persons (p = .002) and only 2% of HIV-negative participants having anal intercourse with known HIV-positive persons (p = .002). The same results were found among the Danish men. Thirty-five percent of HIV-positive and 6% of HIV-negative participants had anal intercourse with a known HIV-positive person (p = .0005). A significant difference between the U.S. and Danish cohorts was found between HIV-positive subjects having anal intercourse with known HIV-negative persons. Six percent of the U.S. subjects versus the 23% of Danish subjects were found to have anal intercourse with a known HIV-negative partner. Forty-eight percent of HIV-negative Americans versus 29% of HIV-negative Danish men were likely to engage in anal intercourse with individuals of unknown serostatus.

Wiktor et al. (1990) concluded that both in the U.S. and in Denmark the men are continuing to engage in anal intercourse after knowing their HIV status even if it is
not concordant with their partner's status. The U.S. HIV-negative men were twice as likely to participate in anal intercourse with partners of uncertain serostatus, thus threatening their own health. There was a small percentage in the U.S. and a slightly higher percentage in Denmark of unknown HIV-positive subjects engaging in sexual activity with a HIV-negative partner. No significant results were found to attribute sexual behavior to the knowledge of one's own HIV status. However, findings suggested that the person engaging in the sexual activity is more likely to participate with a partner of the same serostatus or with individuals of unknown serostatus. In 1987 the findings showed that most of the men continued to be sexually active regardless of serostatus. Wiktor et al. suggested that further research was needed to determine whether men who knew their HIV status were "more selective" in choosing their partners as a result of this knowledge. Further recommendations of the researchers were to increase education to promote the need for awareness of one's own and one's sexual partner's HIV status.

The Wiktor et al. (1990) study is germane to the reader's future research interests on HIV-positive adolescents and their behaviors after knowing their
diagnosis. The study examined the risk behavior issue but did not focus on adolescents or the different behaviors individuals participate in after an HIV diagnosis. The study did have a significant finding that most of the men did have unsafe sex. The presence of these risk behaviors in this sample raises the question of whether these behaviors also exist in adolescents. If these risk behaviors are present in HIV-positive adolescents, determination of the exact behaviors and their prevalence needs to be assessed.

In another study, risk behaviors were examined in high-risk individuals. The purpose of the Heffernan, Chiasson, and Sackoff (1996) research was to describe HIV-associated risk behaviors among adolescents attending a clinic for the treatment of sexually transmitted diseases (STD) in New York City. The study sought to document the HIV prevalence among adolescents and their risk behaviors.

This research was a part of a larger study which examined HIV prevalence and risk behaviors among all age groups. In the age group of 13 to 19 years, 456 participants were evaluated. After informed consent was obtained, pretest counseling and HIV tests were administered to the participants. A questionnaire was
administered in either English or Spanish in face-to-face interviews. Information regarding demographic characteristics, drug use, sexual behaviors, and STD history was gathered. A physical exam was performed by a physician, and all results including lab work were obtained through a medical chart review.

Of the 456 participants, half were men and half were women. From each gender there were approximately 59% African-Americans, 38% Hispanics, and 2% whites. Mean age was 17.5 for all participants. The participants were attendees of a STD clinic in New York City. The clinics were located in a community known for its persistent problem with drugs and prevalence of HIV/AIDS (Heffernan et al., 1996).

Data analysis was achieved through utilization of chi-square tests or a two-tailed Fisher's exact test to assess for differences in proportions. For continuous variables, differences were tested by the two-tailed Student's t test or the Wilcoxon rank-sum test. Multivariate analysis was utilized to examine a relationship between major risk variables and results of participants' HIV tests (Heffernan et al., 1996).
Sexually-transmitted diseases were found in approximately one third of all participants. Primary syphilis, herpes, and chancroid were all identified in participants. Approximately 10 to 13% of participants were diagnosed with multiple STDs, and one fourth were not diagnosed with a STD. A history of STDs was found in over one third of the participants.

Alarmingly, the female adolescents self reported a median of three lifetime sex partners, and the male adolescents reported a total of 14 partners to date. The frequency of sex per month was four for women and eight for men. During these sexual encounters 60% of the females, and 54% of men reported rarely or never using condoms during the last year. Anal sex was found in 15% of the women and 22% of the men. Associated risk factors examined included drug use and prostitution. Approximately 3 to 5% admitted using crack cocaine and trading sex for money or drugs. Twenty percent of the male adolescents reported having had sex with a prostitute.

The HIV tests performed revealed 9 women and 3 male adolescents as HIV seropositive. The risk behaviors prevalent among the participants placed them at high risk for HIV. This study showed that the risk behavior of
unprotected sex rather than drug use in these adolescents was the most prevalent risk behavior. This class of participants is often not reached by current attempts to education/prevention interventions. Heffernan et al. (1996) recommended intensive efforts toward reaching adolescents who live in areas of high HIV prevalence. Through the efforts of the current research, a step can be made toward evaluating those with HIV/AIDS and their needs in regard to future education.

This research by Heffernan et al. (1996) is germane to the current study in that risk behaviors were found in these individuals who were later found to be HIV positive at the time of the questionnaire. The current interventions obviously either did not impact or reach these adolescents, thereby emphasizing the need for a refocus on this population. Data on HIV-positive adolescents is essential to create a positive movement toward understanding adolescents with HIV.

Another study which was relevant to the current research was the Ellen, Boyer, Tschann, & Shafer (1996) study. The purpose of the Ellen et al. research was twofold: first, to determine whether adolescents underestimate their risk for STDs and HIV, and second to
determine what extent anxiety about STD/HIV, past condom use, number of lifetime sex partners, and STD/HIV-related beliefs predict perceived relative risk. Adolescents are recognized for their sense of invulnerability which leads to them engaging in risk behaviors with limited use of protective methods regardless of their knowledge of possible consequences (Ellen et al., 1996).

Two hundred thirty-one adolescents participated in the study. Participants were ninth and 10th graders in one of four urban high schools. Participants had to be at risk for STDs as evidenced by being currently sexually active to be included in the study. The participants' mean age was 15.5 years with 53% being male and 47% being female. African-Americans and Latinos comprised 61% of the subjects, and the remainder were Asians, whites, or mixed race/ethnicity.

After written parental consent was obtained for each adolescent, an anonymous questionnaire was administered. The questionnaire assessed the participants' knowledge, beliefs, and behaviors related to STDs and HIV. Participants were asked to compare their risk of contracting an STD or HIV to other people their age. Questions were measured using a 5-point Likert scale.
Answers ranged from much lower (score of 0) to much higher (score of 5). Results revealed a different picture than had been presented in other studies. Ellen et al. (1996) found that 43% of the participants always used condoms whereas 24% reported never using a condom. Only 12% were found to have had more than six lifetime sex partners, 37% had only one partner, and 39% had two to three partners. Related to participants' beliefs, the only finding which was to a level of significance was that white subjects perceived themselves to be at less relative risk than subjects of other or mixed race/ethnicity (p < .05). One additional significant finding was that anxiety was associated with perceived level of risk rather than past condom use, number of partners or beliefs (β = 0.27, p < .001; β = .27, p < .001). The finding suggested that those who are anxious about STDs also perceive themselves at a higher risk.

Contrary to other studies, the research indicated that there was no support for the belief that adolescents are optimistically biased in their perception of risk for STD/HIV. The study underscores the need for future research to examine the relationship between anxiety,
perceived risk, and behavior. The understanding of this relationship could provide more effective interventions.

The Ellen et al. (1996) study supports the need for the proposed research by emphasizing the need for more information on HIV/STDs and adolescents. Before health care providers can understand any relationship between cognition and behaviors, they must first learn what behaviors present in the population of target, HIV-positive adolescents. This current study sought to provide the first step in addressing the problem.

Conflicting results have been published on the effects of the notification of HIV infection on risk behaviors. In the Cleary et al. (1991) research, the authors sought to assess short-term behavior changes in HIV-positive blood donors who were a part of a nonvoluntary screening program for HIV infection.

Subjects were selected from all HIV-positive persons who donated blood between June 1, 1986, and February 28, 1988. Blood donors who were found to be HIV positive were contacted to return to the clinic for results. Counselors were available at the time of notification. A nurse elicited a complete medical history and performed a brief medical examination on each participant. Next each
participant was given a confidential questionnaire which was administered in private. This first questionnaire asked participants about intravenous drug use, number of partners, sexual preference (heterosexual, homosexual, or bisexual), and specific sexual activities including vaginal, anal, or oral sex within the past 2 weeks. Men were asked about their frequency of condom use, and women were asked how often their partners used a condom. Psychological characteristics such as self-esteem and health concerns also were elicited. Participants were asked to return in 2 weeks to complete the same questionnaire again after HIV status was known.

During the period of data collection, 708 confirmed HIV positive at the New York Blood Donor Clinic, and 271 subjects agreed to participate and were enrolled in the study. Of the 271 who initially agreed to participate, 196 individuals completed the interview and the two questionnaires. Data analysis was accomplished using chi-square statistics for categorical variables and t tests for continuous variables (Cleary et al., 1991). Pearson product moment correlations were used to assess associations between demographic characteristics and sexual behaviors.
Demographic findings revealed that 78% of participants were male, 53% were < 29 years old, 47% had some college or post high school training, and 63% had never married (Cleary et al., 1991). Forty-five percent were white whereas 31% were black (Cleary et al., 1991). Men reported sexual contact with another man most commonly as a risk factor. Other risk factors found were sexual contacts with intravenous drug users and intravenous drug use.

Results from each questionnaire were examined and then compared to assess for a change in behavior after notification of HIV-positive status. Reported behaviors prior to notification included 63% of men having had a male sexual partner and more than 40% of the men reported multiple female sexual partners (Cleary et al., 1991). Approximately 67% of the women participants reported having had sexual contact with the opposite sex within the last year. Eighty percent of participants reported an unsafe sexual encounter one week prior to notification (Cleary et al., 1991).

Behaviors reported at the follow-up visit were similar to those at the initial interview. Two thirds of the participants reported having been sexually active in
the previous week, and approximately 40% of those reported engaging in unsafe sex (Cleary et al., 1991). There was a 15 to 18% decrease in the number of those sexually active from the initial interview to the 2-week follow-up visit. This reduction may have been related to the post notification counseling provided.

Data analysis did reveal a decrease in risk behavior participation, but the remaining 40% of the participants who remained sexually active after having been notified of their diagnosis of HIV was alarming (Cleary et al., 1991). Recommendations for future research included the need to further assess this population to determine whether participation in risk behaviors continues after a longer period of awareness of diagnosis. Consideration should be given to denial of the person's diagnosis and the need for retesting to confirm. Cleary et al. (1991) stated that if these risk behaviors are continued at periods greater than 3 months post diagnosis, then the likelihood of them remaining a part of the person's lifestyle is greater.

It is apparent that many HIV-positive individuals are being untouched by current educational and behavioral intervals. Therefore, the need for the current research to
identify the behaviors and prevalence to them in HIV-positive adolescents is further emphasized.

The last study critiqued and found to be relevant to the current study was the King, Delaronde, Dinoi, Forsberg and the Hemophilia Behavioral Intervention Evaluative Project Committee (1996). King et al. conducted a descriptive study related to adolescents with hemophilia and HIV and their participation in certain risk behaviors. Utilizing 306 adolescent males from 10 different hemophilia treatment centers, the survey was administered using various data collection methods because of the different guidelines established at each treatment center.

The purpose of the King et al. (1996) study was to examine the use of alcohol and other drugs (AOD) to cope with HIV, the use of AOD with sex, and the association of AOD with safer sex practices. AOD users were defined as participants who reported one or more incidents where alcohol or illegal drugs were used before or during sex with their most recent sex partner. AOD copers were defined as those participants who drank alcohol or used illegal drugs to help cope with their diagnosis of HIV. Those who were found to be AOD users or copers were classified as at risk for HIV transmission in the study.
Data collection was done by either direct mailing to adolescents (64%), telephone interviews (19%), self-administration during clinic visits (14%), and face-to-face interviews (3%). Even though various techniques of data collection were utilized analysis showed that no statistically significant differences existed between each technique and the responses gathered on the surveys.

Demographic characteristics assessed included age, race, and marital status. Participants were asked if they used AOD to cope with HIV, if the AOD use helped, if they ever had sex with a female, and if they used AOD with sex. They were further questioned regarding whether condoms were used every time with sex, if they discussed safer sex with every sex partner, and if they disclosed their HIV status to every sex partner. Data analysis was conducted using descriptive statistics. Multivariate logistic regression analysis also was used.

Results from the King et al. (1996) study revealed that all participants were male. Sixty-two percent of participants were between the ages of 18 and 25 years and 38% were between 12 and 17 years. Ninety-six percent of participants were not married and approximately 75% were Caucasian. Analysis of the question related to the use of
AOD in coping with their HIV-positive status showed nearly one third of the adolescents to be AOD copers. Further assessment of those adolescents found to be AOD copers revealed a relationship between age and AOD copers. Forty percent of those ≥ 18 years of age were AOD copers (p < .001). No differences were found in the number of white and black participants who were AOD copers, but Hispanics were found to be three times as likely to use AODs to cope with their diagnosis of HIV (p < .01). When age was not a factor, racial classification was not significantly associated with AOD use to cope with HIV. Eighty-six percent of participants who were found to be AOD copers previously had sex with a female as compared with only 39% of the non-AOD users.

The relationship between participants' use of AOD to cope with their HIV status and their willingness to talk to their sex partners about safer sex was statistically significant. Eighty-three percent of non-AOD copers and 70% of AOD copers revealed that they disclosed their HIV status to their sex partners (p < .05). When participants were questioned about whether they always disclosed their HIV status to every sex partner, only 30% of AOD copers and 55% of non-AOD copers responded yes.
Data analysis revealed that condom use and whether the participant was an AOD coper or not were also related. AOD copers were more likely to find condoms not enjoyable (31%, p < .01) and to report their sex partners' disapproval of condom use (14%, p < .01). However, no statistically significant differences were found in condom use between the sexually active AOD users and the sexually active non-AOD users. Analysis showed that 82% of AOD copers stated they also used AOD before or during sex with their most recent sex partner, whereas only 32% of non-AOD copers used AOD with their last sexual encounter. Forty-eight percent of the non-AOD users disclosed their HIV status to every partner either before or during a sexual encounter compared to 27% of the AOD users. Multivariate analysis showed that disclosure of HIV status to all partners was strongly associated with the AOD variables. Participants who were AOD users to cope with their HIV status were more likely not to disclose their HIV status with all sex partners than non-AOD copers (p < .001, 95% CI+ 2.05, 7.50).

The association between AOD use and unprotected sex had been previously established as an HIV risk factor. King et al. (1996) specifically revealed that non-AOD
copers were more likely to disclose their HIV-positive status to all sex partners, to find the use of condoms more enjoyable, and to have sex partners which approved of condom use.

The King et al. (1996) findings suggested that with this knowledge the use of AOD to cope with HIV is related to a greater risk of HIV transmission risk behaviors. Therefore, interventions should be aimed at the prevention of alcohol and drug use as a means of coping to prevent HIV transmission. An additional recommendation included the development of a support system which includes peers and could help lead to safer sex practices and less use of AOD to cope with problems.

Limitations of the King et al. study include the uncertainty of the honesty of the participants with self-report data and the subjects were all males. Many similarities exist between the King et al. study and the current study in that risk behaviors of HIV-positive adolescents were examined. The current study sought to identify the behaviors which take place among the HIV-positive adolescents. The King et al. study served as a comparison for similarities in participants and behaviors
and provided a stronger case for the need for more research regarding HIV-positive adolescents.

The review of literature reveals that risk behaviors existed among adolescents, including those adolescents who were HIV positive, and that the decision to participate in these risk behaviors was affected by variables like self-efficacy, beliefs, social norms, and the perception of vulnerability (Basen-Enquist & Parcel, 1992; Cleary et al., 1991; Ellen et al., 1996; Gerrard et al., 1996; Heffernan et al., 1996; King et al., 1996; Wiktor et al., 1990). While no research exists on HIV-positive adolescents, two studies revealed that HIV-positive adults did continue their risk behaviors to some degree and that alcohol and drug use greatly influenced their behaviors (King et al., 1996; Wiktor et al., 1990). The lack of information regarding HIV-positive adolescents underscores the need for the current research. Examination of the adolescent risk behaviors present after diagnosis of HIV was necessary to begin to understand and intervene with this population. Much literature is present in regard to HIV-positive adults and homosexuals and risk behaviors, but the crucial first step needed in understanding adolescents with HIV is absent from the literature. This
supported the need for the conduction of this current study.
Chapter III

The Method

The purpose of this study was to examine the HIV transmission risk behaviors of HIV-positive adolescents. In this chapter methods used to study the variables of interest are identified. The research design, population, and sample are described, and instruments utilized for the measurement of variables are discussed. Procedures for data collection, techniques for data analysis, and measures taken for the protection of human subjects are explained.

Design of the Study

A descriptive research design was employed to examine the HIV transmission risk behaviors of HIV-positive adolescents in Mississippi. The purpose of a descriptive study is "to observe, describe, and document aspects of a situation as it naturally occurs" (Polit & Hungler, 1995, p. 178). This design was appropriate because no causal relationship between variables was implied.
Variables

The variables of interest in the study were the HIV transmission risk behaviors which are present among HIV-positive adolescents in Mississippi. Specifically, those variables included HIV education knowledge, sexual intercourse, presence of sexually transmitted diseases, number of sexual partners, condom use, oral sex, anal sex, illegal drug use, sex for drugs, intravenous drug use, sharing of drug paraphernalia, disclosure of diagnosis, and inquisition of partner's HIV status. Controlled variables included the ages of the adolescents and the geographical location in which the study took place. Intervening variables may have included the honesty of the participants, health status of the participants, and the influence of the parent or legal guardian if present during the completion of the questionnaire.

Setting, Population, and Sample

The setting for the research was Central Mississippi. Hinds County, which is located in Central Mississippi, has approximately 255,000 people (Mississippi State Department of Health [MSDH], 1996). As of September 1996 there had been 250 reported cases of AIDS and 403 additional reported cases of HIV in Mississippi in 1996. There was a
cumulative total of 5,686 reported cases of HIV in Mississippi through 1995 (CDC, 1996). According to Young et al. (1992), the seroprevalence of HIV among adolescents was 4.0 per 1,000 people. Mississippi has risen in rank in number of AIDS cases from 40th in 1987 to 20th in 1990 (Young et al., 1992).

The setting for the study was the pediatric and adult infectious disease clinics at the local public hospital. The pediatric infectious disease clinic treats individuals ages 16 and below. A small percentage of the patients seen at this clinic are HIV positive; however, the clinic mainly treats other infectious diseases. The adult infectious disease clinic treats primarily HIV-positive individuals. The clinic schedules approximately 18 patients per day and is open 3 days a week. Patients with HIV and AIDS travel from all over the state to these clinics for management of their chronic disease. The clinic patients are managed by an attending physician, two nurse practitioners, and a social worker.

The population examined consisted of HIV-positive adolescents age 11 to 21 years who had been diagnosed with HIV or AIDS for at least 3 months. The sample included all
adolescents who met the sample criteria and were willing to participate. The sample size was 24 adolescents.

**Empiricalization of the Study**

**Procedures.** Permission to conduct the study was first obtained from Mississippi University for Women Committee on Use of Human Subjects in Experimentation (see Appendix A). Permission also was obtained from the Institutional Review Board for both clinics (see Appendix B). After approval was obtained, data collection began.

Attendees of either of the two selected clinics, who met the sample criteria, were approached and asked to participate in the study while at their clinic appointments. The potential participants were given an explanation of the purpose of the study and a letter of informed consent (see Appendix C). Informed consent was obtained from the adolescent and from the parent or legal guardian whenever the guardian was in attendance or the adolescent was not considered to be an emancipated minor. After obtaining informed consent, each participant was asked to complete the Henderson Risk Behaviors Participation Survey (see Appendix D). Upon completion of the questionnaire, the participants were advised that a summary of the findings was available, if desired, upon
conclusion of the study. The researcher's name and telephone number were left with the participants in the event that the participants had questions or second thoughts regarding the study.

**Instrumentation.** The Henderson Risk Behaviors Participation Survey was a 21-item tool. The tool was not designed to obtain a total risk behavior score, rather each item was evaluated independently. Items 1 to 5 assessed demographic status of the participants including age, gender, ethnicity, length of time diagnosed, and route of acquisition. Items 6 to 21 were utilized to identify specific risk behaviors. Response choices for items 6, 9, 12 to 17, and 19 and 21 were dichotomous while 7, 8, 10, 11, 18, and 20 were multiple choice. Item 22 was an open-ended question which assessed how the diagnosis of HIV had changed or not changed the participant's sexual practices and risk behaviors. The Henderson Risk Behaviors Participation Survey was not tested for reliability and validity but was accepted based on face validity given by a panel of expert researchers.

**Method of Data Analysis**

The research question was what are the HIV transmission risk behaviors of HIV-positive adolescents in
Mississippi. Data collected from the Henderson Risk Behaviors Participation Survey were entered into the Microsoft Excel spreadsheet program and was output as a space delimited text file for analysis by a PC version of the SAS data analysis program.

Data analysis consisted of frequencies and percentages, means and standard deviations, and contingency tables analyzed by Fisher's Exact test. The value of .05 was used for the level of significance. The open-ended question was examined using content analysis to reveal any additional data regarding the effects of HIV diagnosis on participation in risk behaviors.

Summary

In Chapter III the research design for this study in which HIV transmission risk behaviors of HIV-positive adolescents in Mississippi are identified was described. The setting, sample, and population for the study were defined, and the methods of data collection and analysis were presented. The subsequent chapters will reveal findings and interpretation of the data analysis.
Chapter IV

The Findings

The purpose of this study was to identify the HIV-transmission risk behaviors of HIV-positive adolescents in Mississippi. A descriptive study was conducted among adolescents who attended one of two infectious disease clinics in Central Mississippi. The research sample consisted of 24 adolescents. Data for the study were obtained through questionnaires administered by the researcher. The Henderson Risk Behaviors Participation Survey was used for data collection.

The data collected and analyzed for this study are presented in this chapter. Characteristics of the participants are described followed by the data analysis outcomes and additional finding.

Characteristics of the Participants

The sample for this study was comprised of 24 adolescents who had been diagnosed with HIV. All
participants were residents of Mississippi who attended an infectious disease clinic for the management of HIV.

The mean age was 18.3 (SD = 2.8) with a range from 11 years to 21 years old. Examination of the distribution of gender of the adolescents revealed that 12 (50%) were male and 12 (50%) were female. The ethnic distribution of the adolescents was 23 (95.8%) African American and 1 (4.2%) Caucasian.

The route that the participants acquired HIV was ascertained. All participants (100%) had acquired HIV through vaginal or anal intercourse. Two (8.3%) of the adolescents had been raped. Blood transfusion and contaminated drug paraphernalia were not cited as routes of HIV acquisition in these participants.

HIV-positive diagnosis was validated by chart review. Fourteen (58.3%) participants knew about the condition for 0-6 months, 7 (29.3%) had known for 7 months to a year, and 3 (12.5%) had known for 1 to 3 years. According to patient chart information, none of the participants were considered to have AIDS.

Knowledge related to HIV transmission was evaluated by five questions. These questions evaluated whether it was important to notify sex partners about the diagnosis,
methods of safer sex practices, coping with the disease, ways to clean drug paraphernalia, and pregnancy and HIV. Following these five questions, participants were asked where they had obtained information about these topics.

Twenty-three (95.8%) indicated having received education on risk behaviors after diagnosis. Of the 23 participants who received education, all 23 (100%) received education on the importance of telling sex partners about an HIV diagnosis and ways to have safer sex practices. Nineteen (82.6%) were educated on ways to cope with the stress of living with HIV, 11 (47.8%) were informed of ways to clean drug paraphernalia, and 14 (60.9%) were taught the risk of pregnancy and transmitting HIV to children.

Data analysis regarding how participants were educated about HIV revealed that 5 (21.7%) participants received education from a physician. Fifteen (65.2%) of the participants indicated that a nurse had provided education, and 2 (8.7%) stated a nurse practitioner provided the education. One (4.2%) participant revealed he or she had been educated by another type of health care provider.
Risk Behaviors after Diagnosis of HIV

Sixteen participants (66.7%) reported having sexual intercourse since the diagnosis of HIV. Sixteen (66.7%) had not acquired any sexually transmitted diseases (STDs), including gonorrhea, syphilis, chlamydia, chancroid, trichomonas, herpes, or general warts. However, 5 (20.8%) reported having had one STD, 2 (8.3%) participants reported having two STDs, and 1 (4.2%) reported having had three sexually transmitted diseases since the time of the HIV diagnosis.

In the last 3 months, 17 (70.8%) admitted having had one to three partners, and 7 (29.2%) participants reported having no sexual partners in the last 3 months. Eight (33.3%) participants reported always using condoms during sexual intercourse, while 11 (45.8%) stated condoms were not used with every sexual encounter. Five (20.8%) participants were not having sexual intercourse at the time of the study. Eight (33.3%) individuals reported having had oral sex since the diagnosis of HIV. Eight (33.3%) of the participants also reported having anal sex since the diagnosis of HIV. Two (8.3%) of the participants reported having had sex for drugs or money since the
diagnosis of HIV. Four (16.7%) individuals reported using illegal intravenous drugs since the diagnosis.

Frequencies and percentages of drug use are shown in Table 1. Twenty (80.3%) of the participants indicated that there had been no use of the drugs marijuana, cocaine, heroine, amphetamines, barbiturates, or LSD. Two (8.3%) of the participants reported currently using one of these drugs.

Table 1

Frequencies and Percentages Related to Drug Use of Adolescents with HIV

<table>
<thead>
<tr>
<th>Drug</th>
<th>f</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>Marijuana</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Cocaine</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>Heroine</td>
<td>1</td>
<td>4.2</td>
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<tr>
<td>Amphetamines</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Barbiturates</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>LSD</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

None of the participants had donated blood since the diagnosis of HIV. When asked if they notified sexual partners there had been notified of the change in HIV
status, 7 (29.2%) of the participants responded that there had been sexual intercourse since diagnosis so this question was not applicable. Seven (29.2%) of the participants responded that sex partners were notified, and 7 (29.2%) responded that a limited notification of sex partners had taken place. Three (12.5%) of the participants indicated they did not notify their partners of their diagnosis.

When participants were questioned about whether inquiry of partner’s HIV status had been done, 9 (37.5%) of the participants responded yes, 10 (41.7%) responded no, while 5 (20.8%) had no sexual partners.

Changes made after Diagnosis

The last question on the Henderson Risk Behaviors Participation Survey was an open-ended question which was used to reveal how HIV has changed or not changed the participants’ participation in risk behaviors. Results of the data analysis are presented in Table 2 showing the frequencies and percentages of participants who had similar responses.
Table 2

**Frequencies and Percentages Related to Changes Made in the Participants' Risk Behaviors After HIV Diagnosis**

<table>
<thead>
<tr>
<th>Responses</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased condom use</td>
<td>11</td>
<td>45.8</td>
</tr>
<tr>
<td>Decreased frequency of participation in risk behaviors</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>Decreased number of sex partners</td>
<td>7</td>
<td>29.2</td>
</tr>
<tr>
<td>Involved with one partner who is HIV positive</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>Stopped having sexual intercourse</td>
<td>3</td>
<td>12.5</td>
</tr>
<tr>
<td>Stopped using IV drugs</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Decreased or quit drinking alcohol</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Began to take better care of health</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>Only one sex partner</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>More careful when participating in risk behaviors</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>Notifies partners of HIV status</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Stopped partying</td>
<td>2</td>
<td>8.3</td>
</tr>
<tr>
<td>Stopped everything related to risk behaviors</td>
<td>1</td>
<td>4.2</td>
</tr>
<tr>
<td>Did not change anything</td>
<td>4</td>
<td>16.7</td>
</tr>
</tbody>
</table>
Additional Findings

Additional discoveries which help to identify the existence of risk behavior in HIV-positive adolescents were made during data analysis. Those findings are presented in this section.

Table 3 compares risk behaviors for males and females in the study. Only the p value for anal sex was found to be significant. This p value indicated that more male participants were having anal sex after diagnosis of HIV than females.

Table 3

Frequencies and Percentages by Gender of Risk Behaviors after HIV-Positive Diagnosis and the Significance Using Fisher’s Exact Test

<table>
<thead>
<tr>
<th>Risk behavior</th>
<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual intercourse</td>
<td>7</td>
<td>58.3</td>
<td>9</td>
<td>75.0</td>
<td>0.667</td>
</tr>
<tr>
<td>Always use condom</td>
<td>2</td>
<td>16.7</td>
<td>6</td>
<td>50.0</td>
<td>0.136</td>
</tr>
<tr>
<td>Oral sex</td>
<td>6</td>
<td>50.0</td>
<td>2</td>
<td>8.3</td>
<td>0.193</td>
</tr>
<tr>
<td>Anal sex</td>
<td>1</td>
<td>8.3</td>
<td>7</td>
<td>58.3</td>
<td>0.027*</td>
</tr>
</tbody>
</table>

(table continues)
Table 3 (Continued)

<table>
<thead>
<tr>
<th>Risk behavior</th>
<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Sex for drugs/money</td>
<td>2</td>
<td>16.7</td>
<td>0</td>
<td>0.0</td>
<td>0.478</td>
</tr>
<tr>
<td>Inject illegal drugs</td>
<td>3</td>
<td>25.0</td>
<td>1</td>
<td>8.3</td>
<td>0.590</td>
</tr>
<tr>
<td>Share drug paraphernalia</td>
<td>1</td>
<td>8.3</td>
<td>1</td>
<td>8.3</td>
<td>1.000</td>
</tr>
</tbody>
</table>

*p < .05.

The gender distribution in regarding the question about notification of sexual partners about the participant's HIV status is presented in Table 4. The p-value was 0.715 indicating no difference in the male and female participants' responses in regard to notifying partners.
Table 4

**Frequencies and Percentages by Gender Related to Notification of Sexual Partners of HIV Positive Status**

<table>
<thead>
<tr>
<th>Response</th>
<th>Female</th>
<th></th>
<th></th>
<th></th>
<th>Male</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td></td>
<td>f</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
<td>16.7</td>
<td>5</td>
<td>41.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2</td>
<td>16.7</td>
<td>1</td>
<td>8.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Told some but not all sex Partners</td>
<td>4</td>
<td>33.3</td>
<td>3</td>
<td>25.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The gender responses for the question regarding inquiry into the partner's HIV status are given in Table 5. The p value for this table is 1.000 indicating no statistically significant difference in these distributions.
Table 5

Frequencies and Percentages by Gender Related to Inquiry About Partner's HIV Status

<table>
<thead>
<tr>
<th>Response</th>
<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>41.7</td>
<td>4</td>
<td>33.3</td>
</tr>
<tr>
<td>No</td>
<td>5</td>
<td>41.7</td>
<td>5</td>
<td>41.7</td>
</tr>
</tbody>
</table>

Conclusions

Results of the data analysis were presented in this chapter. Demographics, risk behaviors, and comments of the open-ended question were given. Significant findings were illustrated, and the implications and discussion of these finding will be presented in Chapter V.
Chapter V

The Outcome

The purpose of this study was to identify those HIV transmission risk behaviors which existed among HIV positive adolescents in Mississippi. Fishbein and Ajzen's Theory of Reasoned Action (1980) was used to guide this descriptive investigation. The sample consisted of 24 adolescents and was drawn from two infectious disease clinics in Central Mississippi. Participants were interviewed at their regularly scheduled clinic appointments. The Henderson Risk Behaviors Participation Survey was used to assess participation in HIV transmission risk behaviors.

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

The number of adolescents diagnosed as HIV positive is growing rapidly, and the cure for this chronic and fatal disease still remains unknown. Without a cure for
HIV/AIDS, there is a need for primary prevention and education. The increasing prevalence and continued spread of the disease emphasize the need to break this cycle. Risk-taking behaviors are common among adolescents. The behaviors that exist within the adolescent population have been identified as a whole in the literature, but those behaviors that are specific to high risk HIV infected adolescents have not been a focus until this study.

Summary of Findings

Demographics. The mean age of the participants was 18.3 years with the youngest being 11 years and the oldest being 21 years. Both genders were equally represented with 12 males and 12 females. More than 95% of the participants in this study were African-American.

All participants had acquired HIV through sexual transmission, two of which reported having been raped. Over 50% of the participants had known of the HIV-positive status for 0-6 months, 29% had known of their disease from 7 months to a year, and over 12% had known of their diagnosis from 1 to 3 years at the time of this study.

All participants except for one had been educated on risk behaviors after the diagnosis of HIV. Of these
participants who were educated, 65% were educated by a nurse. All of these participants who had post diagnosis education received information of partner notification and methods of having safer sex. Eighty-two percent had been taught coping methods, and 60% received information of pregnancy and HIV. Only 47.8% of the participants were taught about cleaning drug paraphernalia.

Over 66% continued to participate in sexual intercourse after being diagnosed with HIV. Seventy percent of the sexually active participants indicated involvement with one to three sexual partners. Only 33% reported condom use with every sexual encounter. Additionally, 33% had revealed involvement in oral and anal sex since the diagnosis of HIV. Only 8% reported having sexual intercourse for drugs or money.

Eighty percent denied any current drug use. None of the participants reported donating blood since their diagnosis. Only 29% of the participants had notified sexual partners of the positive HIV status. An additional 29% of the participants revealed that some of their sexual partners were notified. The remainder of the participants reported not telling any partners of their HIV-positive status at the time of the study. Thirty-seven percent of
the participants reported inquiring about a partner's HIV status.

Discussion

Although the current study was conducted in a metropolitan area in the southern United States, the demographic and risk-taking behaviors were similar to earlier studies conducted in various other parts of the country. In a study in New York City, Heffernan et al. (1996) studied a population which had the same ethnic background, was equally divided between genders, and had a mean age of 17.5 years. Findings related to number of sexual partners, participation in anal sex, and frequency of condom use in the Heffernan et al. (1996) study also approximated the statistics for this current study. Additionally, risk factors related to drug use were relatively low in the 1996 group and the current group (3 to 5% and 8%, respectively) compared to sexual risk factors.

The strength of the demographic associations lends credence to the validity of both studies, as well as highlighting the severity of HIV risk factors across geographic boundaries. The existence and magnitude of the
risk factors of unprotected sexual behaviors, rather than drug use risk behaviors, were also noted.

According to the current study, HIV-positive adolescents are communicating the disease to others by having unprotected sex and multiple partners, some of whom are not notified of the change in HIV status. The fact that some individuals had decreased risk behaviors somewhat after diagnosis with HIV is encouraging. This was reflected in the statistics as well as in answers to the open-ended questions, such as increased condom use (45.8%) and decreased number of partners (29.2%). However, there were still many individuals who believed that the disease should not cause a change in the sexual practices. The belief that the diagnosis of HIV should not lead to behavioral changes was revealed in the findings of data collected from the open-ended question. Four (16.7%) of the participants stated that after becoming HIV positive no changes were made in sexual behaviors. Fifty-eight percent of the participants in this study advised some or all sexual partners of their HIV-positive status. Thirty-seven percent reported that there had been inquiry into the sexual partner's HIV status. Wiktor et al.'s (1990) review of literature revealed that in 1987 most HIV
positive men continued to be sexually active regardless of serostatus. By 1990, individuals were found to be more likely to participate in sexual activity with a partner of the same serostatus or with individuals of unknown status. The compilation of these findings indicate that there may be a promising trend toward more attention to risk factors related to serostatus.

Despite some improvements, unprotected sex, nondisclosure of HIV status, multiple partners, alcohol and drug use, and oral and anal sex still were evident in this study. If such behaviors are continued, then the prevalence of HIV in this age group will continue to increase.

The communication of HIV from sexual transmission is being seen in much younger age groups today (CDC, 1996; MSDH, 1996). In the current study, two of the participants were 11 years old and had contracted HIV through sexual transmission. Gerrard et al. (1996) determined that overall adolescent risk-taking behaviors increased the older the adolescent and that teens were not in denial about the risks, but rather developed cognitive shifts to adapt to their awareness of risks. Likewise Ellen et al. (1996) found that adolescents are not optimistically
biased in their perception of risk for HIV and other STDs. These findings emphasize the need for intervention at the preteen years rather than waiting until the risk behaviors already exist in the adolescent years. Since adolescents seem to be aware of risks, future interventions may need to be targeted toward issues other than lack of knowledge and client education. All but one of the adolescents in the current study had received HIV education, but 66% remained sexually active. Basen-Enquist and Parcel (1992) suggested that psychological variables, especially attitudes, social norms, and adolescents' self-efficacy are issues which are related to sexual risk-taking and deserve more attention in terms of future research and development of interventions.

The participation in risk behaviors after diagnosis was revealed in the Cleary et al. (1991) study. Cleary et al. (1991) found a 15% to 18% decrease in the number of persons sexually active 2 weeks after notification of their HIV positive status. However, 40% of the participants still participated in unprotected sex minimizing any significance of the overall decline in total number of persons participating in sexual behaviors. Cleary et al. (1991) recommended research to identify if
these findings could be replicated after a longer period of awareness of their HIV-positive status. The current study supported these results revealing similar findings of a 66% involvement in unsafe sexual behaviors after an HIV-positive status. More than 40% of the participants from the current study had known of the diagnosis for longer than 7 months.

Overall, findings from this study indicated that while adolescents are growing more aware of risks and are perhaps being a bit more cautious in some circumstances, participation in risk factors related to sexual activity remains alarmingly prevalent. These research findings validate the recommendations made by the Theory of Reasoned Action by Fishbein and Ajzen (1975). The Theory of Reasoned Action stressed the need for prediction and understanding of behaviors. Beliefs and behaviors were linked by this theory. Fishbein and Ajzen also stated that a behavior cannot be changed until it has been identified. Now that the behaviors have been identified, intentions, influences, and beliefs can be researched. This study was the first step in an area of much needed attention.
Conclusions

Based on the research findings several conclusions were made related to the research question of what HIV transmission risk behaviors existed among HIV-positive adolescents in Mississippi. Sixty-six percent of the participants continued to have sexual intercourse after their diagnosis of HIV. Seventy percent of the participants had one to three sexual partners within the last 3 months despite their HIV-positive status. More than 45% of the participants were not using condoms with their sexual encounters. Eighty percent of the participants were not using drugs. Of the 20% using illicit drugs, only 8% were using more than one drug. None of the participants had donated blood since the diagnosis. Twelve percent of the participants had not notified their sexual partners of their HIV-positive diagnosis. Twenty-nine percent of the participants reported notifying some of the sexual partners. Forty-one percent of the participants did not inquire about the partner's HIV status. Thirty-three percent of male participants reported participating in anal sex.
Limitations

A number of limitations with this research study were identified. The design utilized in the study imposed certain constraints upon the generalization of the findings. The study was conducted among adolescents who received services from one of two infectious disease clinics located in an urban area of central Mississippi. The ethnicity of the participants may not represent the diversity in this geographical area.

The honesty of the participants was a concern. No participants questioned the meaning of any of the survey items. Due to the sensitive nature of the questionnaire, participants may have avoided asking questions and haphazardly or dishonestly completed the survey. The reliability and validity of the instrument used for data collection were not established and only face validity of the instrument had been established.

The open-ended question regarding changes in sexual practices since the diagnosis of HIV created some problems. Two of the participants were unable to write requiring the participant dictate their answers to the researcher which could have affected their answers. Due to time constraints of the scheduled clinic appointments,
some participants may not have completed the open-ended question as thoroughly as desired. Most participants had approximately 15 minutes to answer the questionnaire including the open-ended question. No interruptions of the sessions occurred.

**Implications for Nursing**

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

Nursing theory is tested through research. Findings from previous studies and from the Theory of Reasoned Action validated the need for this research. The presence of risk behaviors, increasing HIV incidence, and the spread of HIV to the adolescent population had been supported by previous studies. The Theory of Reasoned Action suggests that many factors influence adolescent decision making processes, and these factors must be considered when studying this population. The findings provided needed data to begin the process of changing behaviors leading to a decreased prevalence and spread of HIV/AIDS. The results of this study serve to encourage the continued use of Fishbein and Ajzen’s Theory of Reasoned Action (1975) as a conceptual framework for assessing and
changing HIV transmission risk behaviors of HIV positive adolescents.

This research will not only broaden the data base on HIV but will support the need for future research on the identification and change of HIV transmission risk behaviors. The findings of this study suggest that more research is needed to gain an insight into understanding HIV-positive adolescents and why participation in risk behaviors continues regardless of education. Development of interventions other than education about HIV also is imperative. The need to develop valid and reliable research instruments appropriate for use with adolescents also emerged from this study.

As the prevalence and spread of HIV continue to rise, it is essential that health care professionals be familiar with the disease and its implications. Education of society and health care professionals on HIV is crucial to proper care and understanding of the individuals afflicted with this disease. The findings of this study demonstrate the importance of enhancing health care curricula to include the components of assessment and management of HIV-positive adolescents including attention to psychological variables as well as client education.
The prevalence and spread of HIV/AIDS greatly affect advanced practice nursing. The chronic nature and social impact of this disease will demand attention by nurse practitioners. The importance of nursing interventions was evident in the fact that 65.2% of the participants in this study had received their HIV teaching from a nurse. Until there is a cure, long-term management and counseling will be part of the nurse practitioner’s involvement with HIV-positive patients. This research illuminated the need for more preventive strategies aimed toward adolescents. In addition, nursing involvement in local, state, and national campaigns to assist in the care and research of HIV-positive individuals is crucial. Research, education, and prevention must identify and incorporate measures which lead to a change in behavior where currently no significant change is occurring.

Recommendations

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

1. Replication of the study with a randomized study to include more diverse ethnic representation and a larger sample.
2. Development of valid and reliable research instruments for identification of behaviors which exist among HIV positive adolescents.


4. Conduction of research specific to the development of interventions to decrease the participation in risk behaviors by HIV positive adolescents.

5. Conduction of more research specific to psychosocial issues and interventions, rather than exclusively educational interventions.

The following recommendations are made for nursing practice:

1. Expand and improve knowledge of health care providers and society on HIV including prevention, assessment, management, and complications.

2. Utilization of research findings in the care of HIV patients.

3. Increased activity in lobbying and campaigning for increased funding for HIV research, education, and patient support programs.

4. Increased attention to the psychosocial issues which impact risk behaviors for HIV.
References


APPENDIX A

APPROVAL OF MISSISSIPPI UNIVERSITY FOR WOMEN COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION
February 26, 1997

Ms. Kristi Henderson  
c/o Graduate Program in Nursing  
Campus

Dear Ms. Henderson:

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 stipulations:

Due to the sensitive nature of this study, great care should be taken to insure the confidentiality of each patient. You should make sure it is understood that no names are to be used on the surveys. The surveys should be destroyed as soon as the results are tabulated. The consent must be a full disclosure, making it clear that difficult questions will be asked in the survey. Parental consent must be obtained before you proceed with any child.

I wish you much success in your research.

Sincerely,

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

cc: Mr. Jim Davidson  
Dr. Mary Pat Curtis  
Dr. Rent

Where Excellence is a Tradition
APPENDIX B

APPROVAL OF INSTITUTIONAL REVIEW
BOARD OF AGENCIES
February 14, 1997

Kristi Henderson, R.N.
Graduate Student
Mississippi University for Women
6811 Old Canton Road, Apt. 3102
Ridgeland, MS 39157


Dear Mrs. Henderson:

Thank you for your correspondence of 10 February, 1997, and your request for approval of the above noted protocol by expedited review. Your study involves minimal risk and qualifies for expedited review in accordance with §46.110 (b) (1) - subset (9) - of 45 CFR part 46. Also approved is the "Letter of Introduction and Informed Consent." However, I would like to emphasize that you furnish the participant a copy of this form for their future reference.

This study involves humans and is subject to continuing review. Enclosed please find a final evaluation form to complete and return to the IRB upon completion of the study which you project to last for three months.

Sincerely,

Stanley W. Chapman, M.D.
Professor of Medicine
Chairman, Institutional Review Board

SWC/mw

Enclosure
APPENDIX C

LETTER OF INTRODUCTION AND INFORMED CONSENT
Letter of Introduction and

Informed Consent

Dear Survey Participant:

My name is Kristi Henderson. I am a registered nurse working on my master's degree at Mississippi University for Women. I am conducting a research study to identify behaviors of adolescents with HIV. The findings of the study may benefit other adolescents who are diagnosed with HIV. I am requesting that you participate in my study. Approximately 15 minutes of your time will be needed to complete the survey.

I need to be very sure that I have your permission to use your answers to the questions in my study. Difficult questions will be asked on the questionnaire. Completion of the survey and your signature on this form indicate your agreement to participate in this study. Participation is voluntary and your confidentiality will be maintained as I will separate the consent forms and the surveys as soon as I receive them. No names will be used on any of the forms, and all materials will be destroyed after the study is completed. Be assured that your decision to be in the study will in no way affect the care you receive from the clinic. You may withdraw from the study at any time prior to returning the survey.

If you would like more information before agreeing to be in my study, please feel free to contact me at (601) 978-3745. Thank you for considering this request.

Sincerely,

Kristi Henderson, RN

----------------------------------------------------------

Participant

----------------------------------------------------------

Parent/Legal Guardian
APPENDIX D

HENDERSON RISK BEHAVIORS
PARTICIPATION SURVEY
Henderson Risk Behaviors
Participation Survey

Please circle one answer for each of the following questions unless asked to circle all the answers that apply.

1. How old are you? _____________

2. What is your sex?
   ___ a. Female
   ___ b. Male

3. Ethnicity
   ___ a. White--not Hispanic
   ___ b. Black--not Hispanic
   ___ c. Hispanic
   ___ d. Asian or Pacific Islander
   ___ e. Native American or Alaskan native
   ___ f. Other

4. Length of time diagnosed with HIV
   ___ a. 0 to 6 months
   ___ b. 7 months to 1 year
   ___ c. 1 to 3 years
   ___ d. 3 to 6 years
   ___ e. More than 6 years

5. How did you acquire HIV?
   ___ a. Sexual intercourse
   ___ b. Rape
   ___ c. Blood transfusion
   ___ d. Contaminated drug paraphernalia
   ___ e. Do not know

6. Did you have any education on risk behaviors after your diagnosis?
   ___ a. Yes
   ___ b. No
7. If yes, who provided you with HIV education?
   ____ a. Doctor
   ____ b. Nurse
   ____ c. Nurse practitioner
   ____ d. Social worker
   ____ e. Other

8. Were you talked to about any of the following?
   a. Telling your sex partners that you are HIV positive?
      ____ Yes  ____ No  ____ Don't know
   b. Ways to have safer sex?
      ____ Yes  ____ No  ____ Don't know
   c. How to cope with the stress of living with HIV?
      ____ Yes  ____ No  ____ Don't know
   d. Ways to clean needles and other drug use equipment?
      ____ Yes  ____ No  ____ Don't know
   e. Pregnancy or having children?
      ____ Yes  ____ No  ____ Don't know

9. Have you had sexual intercourse since your diagnosis of HIV?
   ____ a. Yes
   ____ b. No

10. Which sexually transmitted diseases have you had since your diagnosis of HIV? (Circle all those that apply.)
    a. None
    b. Gonorrhea ("Clap")
    c. Syphilis
    d. Chlamydia
    e. Chancroid
    f. Trichomonas
    g. Herpes
    h. Genital warts
11. How many sexual partners have you had in the last 3 months?
   ____ a. None
   ____ b. 1 to 3 partners
   ____ c. 4 or more partners

12. Do you use condoms every time you have sexual intercourse?
   ____ a. Yes
   ____ b. No

13. Have you had oral sex since your diagnosis of HIV?
   ____ a. Yes
   ____ b. No

14. Have you had anal sex since your diagnosis of HIV?
   ____ a. Yes
   ____ b. No

15. Have you had sex for drugs or money since your diagnosis of HIV?
   ____ a. Yes
   ____ b. No

16. Have you injected (shot-up) any illegal drugs since your diagnosis of HIV?
   ____ a. Yes
   ____ b. No

17. If yes, do you share needles or other drug paraphernalia?
   ____ a. Yes
   ____ b. No

18. What drugs are you currently using?
   ____ a. Marijuana
   ____ b. Cocaine
   ____ c. Heroine
   ____ d. Amphetamines (Uppers)
   ____ e. Barbiturates (Downers)
   ____ f. LSD (Acid)
   ____ g. None

19. Have you donated blood since your diagnosis of HIV?
   ____ a. Yes
   ____ b. No
20. Do you notify your sexual partners of your diagnosis of HIV?
   ___ a. I have not had sexual intercourse since my diagnosis.
   ___ b. Yes, I tell my sexual partner.
   ___ c. No, I do not tell my sexual partners.
   ___ d. I tell some of my sexual partners.

21. Do you inquire about your partner's HIV status?
   ___ a. Yes
   ___ b. No

22. Describe how the diagnosis of HIV has changed or not changed your sexual practices and other risk behaviors.