Risk Behaviors Of Hiv-Infected Young Adults

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RISK BEHAVIORS OF HIV-INFECTED YOUNG ADULTS

by

JENNIFER DOSS DEWEY

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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Risk Behaviors of HIV-Infected Young Adults

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Abstract

Despite research, education, and preventive programs, HIV continues to thrive. It is estimated that half the HIV infections worldwide have occurred in individuals between the ages of 15 and 24 years. HIV-infected individuals who persist in the same behaviors that put them at risk are potentially infecting others as well as further endangering their own health. An awareness of the risk behaviors in which the fast growing HIV-infected young adult population is engaging might be useful in future education and prevention efforts. The purpose of this study was to explore the risk behaviors of HIV-infected young adults. The theoretical framework for the study was Albert Bandura’s Self-Efficacy Theory. Research questions included the following: What are the risk behaviors of HIV-infected young adults? And what is the self-efficacy of HIV-infected young adults? The target population was HIV-infected young adults 18 to 25 years of age) attending HIV support groups in Memphis, Tennessee. A convenience sample of 11 completed the Risk Behavior Questionnaire, a researcher-designed questionnaire addressing risk
behaviors. Descriptive statistics, including frequencies and percentages, were used to analyze the data. The findings of the study indicated that HIV-infected young adults are participating in risk behavior despite a high self-efficacy. Nurse practitioners should be aware of risk behavior in HIV-infected young adults and adapt their care and teaching to address the educative needs of this population. Recommendations for further research include larger scale studies investigating the risk behavior as well as the knowledge of HIV-infected young adults and studies focused on strategies to decrease risk behavior in HIV-infected young adults.
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Chapter I
The Research Problem

Despite research, education, and preventive programs, human immunodeficiency virus (HIV) infection continues to occur. Young adults are becoming one of the fastest growing populations of newly infected HIV cases. Until recently, most research and intervention efforts have been targeted at behavior changes among the uninfected. However, interventions for those already infected with HIV might be more effective. HIV-infected individuals who persist in the same behaviors that put them at risk are potentially infecting others as well as further endangering their own health. An awareness of what risk behaviors exist in the fast growing young adult HIV population might lead to increased efforts at prevention of HIV transmission to others and subsequent secondary infection in the HIV population. This study sought to identify the risk behaviors of HIV-infected young adults.

Establishment of the Problem

Over 688,200 cases of acquired immunodeficiency syndrome (AIDS) have been reported to the Centers for
Disease Control and Prevention (CDC) since 1981 (CDC, 2000). Current estimates reveal that 650,000 to 900,000 Americans are now living with HIV and that 40,000 new infections occur every year (CDC, 2000). It is estimated that over 25% of these new reported cases occur in persons between the ages of 12 and 21 years (McDermott, 1998).

Sexually transmitted diseases including HIV are most common among individuals between the ages of 15 and 24 years (Rivers & Aggleton, 2000). Over 50% of all HIV infections in the world are in persons 15 to 24 years of age (Szekeres, 2000). In some developing countries, this figure rises to 60% (Rivers & Aggleton, 2000). As of December 1998, there were 3,373 AIDS cases reported in the United States in persons between the ages of 13 and 19 years. In addition, 24,437 AIDS cases were reported in individuals aged 20 to 24 years. One must recognize that the majority of these cases were actually infected with HIV at younger ages (Szekeres, 2000). Furthermore, because it takes an average of 10 years for AIDS symptoms to develop when HIV is left untreated, it can be hypothesized that many people who were diagnosed with AIDS in their 30s were actually infected with HIV as teenagers or young adults (Szekeres, 2000). Clearly HIV poses a significant threat to the adolescent and young adult population.
Although routes of transmission are known and prevention programs exist, HIV continues to thrive. Until recently, most HIV research and prevention programs were targeted at the uninfected in order to help them protect themselves against HIV infection through avoidance of the behaviors that put them at risk. The prevention message was centered around the premise that each individual was responsible for his or her own health and had to do whatever possible to avoid becoming infected. As Schlitz and Sandfort (2000) explain,

The protagonist in avoiding the spread of the disease was the negative person. If contamination did occur, the major part of the blame fell on the uncontaminated person, who, despite being aware of his responsibility, failed to protect his own health. (p. 1523)

Such an approach was deemed necessary because not all HIV infected people knew they were infected. Thus, the responsibility to prevent infection fell on the uninfected, who were encouraged to assume all partners were potentially infected and to protect themselves accordingly. However, this approach excluded the infected individuals from the communication and education process (Schlitz & Sandfort, 2000).

Any interventions or education programs targeted at HIV-infected individuals, who were considered terminal, focused on physical issues and comfort measures, such as
proper diet and rest to improve quality of life. The sexuality of these individuals was seldom addressed, the assumption being that HIV diagnosis precluded any interest in a sexual life (Schlitz & Sandfort, 2000).

It has only been within the last 5 years that the sexual behavior of HIV-infected individuals has been addressed. With the advent of antiretroviral therapy, HIV-infected individuals are living much longer and much healthier lives. The diagnosis of HIV is considered less of a death sentence. After the 1995 Cape Town Convention in which HIV-infected individuals publicly addressed issues and concerns related to their sexuality, society began to acknowledge the fact that HIV-infected individuals do in fact have sex lives. HIV-infected individuals are now seen as individuals with varying sexual and emotional lives, whose behavior is not automatically dependent on their infection status (Schlitz & Sandfort, 2000).

With the acceptance of HIV-infected individuals as healthy and sexual people comes the recognition of increased need for intervention programs targeted at preventing the spread of HIV by this population. However, minimal research has been conducted to address the risk behaviors of this population. As Kalichman (1999) acknowledges, “Nearly two decades into the AIDS epidemic,
it is surprising how little is known about the sexual behavior of people living with AIDS" (p. 426). Lansky, Nakashima, and Jones (2000) concur that little information is available regarding the risk behaviors of HIV-infected individuals, especially heterosexuals, after infection. In their research of sexual risk behavior, DeHovitz, Feldman, Brown, and Minkoff (1997) add that the sexual behavior of HIV-infected women has not been extensively investigated. Still, more mysterious are the substance use and body art risk behaviors of HIV-infected individuals.

In order to bring HIV-infected people into the communication and education process, and thus decrease transmission from this group, one must have a clear picture of what risk behaviors they are actually demonstrating. With minimal research being conducted concerning risk behaviors in the HIV-infected population, it is not surprising that little is known regarding the risk behaviors of HIV-infected young adults. Because young adults represent one of the fastest growing HIV populations, an understanding of the behaviors in which they are participating is imperative to future prevention and control of the HIV virus. Therefore, the purpose of this study was to discover and explore the risk behaviors of HIV-infected young adults after diagnosis.
Significance to Nursing

Nurse practitioners providing primary care to HIV-infected individuals are in an ideal position to assess persistent risk behavior and intervene with education in order to prevent transmission of the virus to others, as well as prevent secondary infection in their patients. Nursing research and education regarding the risk behaviors related to HIV are crucial to prevention of HIV transmission. Nurses, especially advanced practice nurses, are in an excellent position to educate and provide ongoing support to individuals infected with HIV.

Theoretical Framework

Bandura (1997) suggests in the Self-Efficacy Theory that people are directed by perceptions of their competence. Thus, the more confident a person feels about his or her ability to complete a task successfully, the more likely the person is to attempt the task (McDermott, 1998).

The level of confidence a person feels about his or her abilities is considered a self-efficacy expectation. Self-efficacy expectations refer to a person's beliefs about his or her ability to successfully perform a certain behavior or task. These self-efficacy expectations are considered the "major mediators" of behavior as well as
behavior change (Betz & Hackett, 2000). If self-efficacy expectations are low regarding a certain behavior, then avoidance of the behavior ensues. If self-efficacy expectations regarding a behavior are high, the individual is more likely to attempt or approach the behavior (Betz & Hackett, 2000).

Self-efficacy expectations are learned through four specific sources: enactment attainment, vicarious learning, verbal persuasion, and physiologic arousal (Betz & Hackett, 2000). Enactment attainment refers to the concept that success in achieving a certain behavior can raise self-efficacy expectation and that failure can lower it. If a person has had success performing a behavior in the past, expectation is high that he or she can successfully perform the behavior in the future. Likewise, if a person has experienced failure performing a task in the past, self-efficacy expectation regarding the behavior will be low (Bandura, 1997).

Vicarious learning or modeling refers to the concept that observing the success and failures of others can influence a person's own self-efficacy expectations. For example, if a person witnesses another performing a task successfully, self-efficacy expectation will be high. This premise suggests that social environment is a strong influence in self-efficacy expectation. Bandura (1997)
asserts that only people glean their self-efficacy expectations from others, and they actually seek out models to observe.

Verbal permission refers to the concept that encouragement and support from others can increase self-efficacy expectations. Receiving feedback from others can influence one’s perception of his or her ability to complete a task. Bandura (1997) suggests it is easier to undermine self-efficacy of others in this area through negative feedback than enhance it through positive reinforcement.

Physiologic arousal is the “somatic indicator” of the anxiety connected with the behavior (Bandura, 1997). Physiologic arousal refers to the feelings associated with a certain behavior. Anxiety is considered the “coeffect” of and shares a reciprocal relationship with self-efficacy expectation. For example, if anxiety regarding a behavior is high, expectations of performing the behavior successfully are low. If anxiety is low, self-efficacy is high (Betz & Hackett, 2000).

Bandura (1997) suggests that knowledge and skill are poor predictors of subsequent performance; rather the beliefs one has about the ability to perform the task, as well as the outcomes of his or her efforts, are better indicators. Bandura (1997) proposes that for this reason
people with the same knowledge and skills often behave quite differently.

Bandura’s Self-Efficacy Theory is an appropriate theoretical model for this study. Using the Self-Efficacy Theory, one might suggest that the reason HIV infection continues to boom, despite education, is because knowledge alone cannot change behavior. Behavior change must result from knowledge and the individual’s belief that he or she does in fact possess the power to change.

In his application of the Self-Efficacy Theory to risk behavior, Bandura (1997) asserts that one must teach and encourage safe sex guidelines but also must enhance the self-efficacy of individuals regarding that behavior. He claims that knowledge and the best of intentions are often at war with “interpersonal pressures and sentiments” (p. 180). “In interpersonal predicaments, the sway of allurement, heightened sexual arousal, desire for social acceptance, coercive pressures, situational constraints, and fear of rejection and personal embarrassment can override the influence of the best informed judgment” (Bandura, 1997, p. 180).

As McDermott (1998) suggests in his application of the self-efficacy model to persons with HIV, the provision of information alone is not enough to bring about behavior change in individuals. Instead, they must have the
resources and support available to make the changes necessary to protect themselves and others from HIV and other infections.

Assumptions

The following assumptions were made:

1. The risk behaviors of HIV-infected young adults are variables that can be identified through self-report.
2. Individuals attending HIV support groups self report that they are infected with the HIV virus.
3. HIV-infected young adults attending HIV support groups will be able to read and understand the survey tool and honestly report their risk behaviors.

Statement of the Problem

HIV infection continues to occur despite education and prevention efforts, especially in the young adult population. Researchers have suggested that prevention and education efforts might be more effectively targeted at the HIV-infected population. An awareness of the risk behaviors in which HIV-infected young adults are participating might be useful in preventing transmission in this fast growing HIV population. However, minimal information is known about the risk behaviors of young adults infected with HIV.
Research Questions

This study was guided by the following research questions:

1. What are the risk behaviors of HIV-infected young adults after diagnosis?

2. What is the self-efficacy of HIV-infected young adults?

Definition of Terms

For clarification in the study, the following terms were defined:

Risk behaviors: Theoretical: actions that place individuals at risk for HIV infection. Operational: actions that place individuals at risk for HIV infection as measured by survey tool to include sexual, substance use, and body art behaviors.

HIV-infected young adults: Theoretical: those individuals age 18 to 25 years and self-reported as having tested positive for the virus that causes AIDS. Operational: those individuals age 18 to 25 years and self-reported as having tested positive for the virus that causes AIDS and members of a support group for HIV-infected people.

Self-efficacy: Theoretical: the belief of an individual in his or her ability to perform a certain task
or behavior (Bandura, 1997). **Operational:** the belief of an individual in his or her ability to perform a certain task or behavior as measured by the Risk Behavior Questionnaire.

**Summary**

HIV infection continues to occur despite education and prevention efforts. An estimated half of the HIV infections worldwide have occurred in individuals 15 to 24 years of age. HIV-infected individuals who maintain the same behaviors that put them at risk are potentially infecting others as well as endangering their own health. An awareness of the persistent risk behaviors in the fast growing HIV-infected young adult population is crucial to future HIV education and prevention efforts.

In this chapter, the research problem and its significance to nursing have been established and discussed. The problem statement and purpose of the study have been presented. In addition, the theoretical framework which guides this study, Bandura’s Self-Efficacy Theory, has been explained and applied. Finally, major assumptions, research questions, and definition of terms have been presented. The following chapter will review the literature concerning the continued risk behavior of HIV-infected individuals.
Despite research, education, and prevention programs, HIV continues to flourish. Although the routes of transmission are known and prevention measures exist, HIV infection still occurs. Adolescents and young adults are becoming one of the fastest growing populations of newly infected HIV cases. An awareness of the risk behaviors in which this population is engaging might lead to increased effort at prevention of HIV transmission in this group. However, little research has been conducted to ascertain the persistent risk behaviors of HIV-infected individuals that might endanger others and put themselves at risk for other infections.

Diamond and Buskin (2000) sought to describe the continued risky behaviors of HIV-infected behaviors of youths and adults. The authors defined youths as less than 22 years of age at HIV diagnoses and less than 25 years of age at entry to the study. They considered adults to be more than 22 years of age at HIV diagnosis and more than 25 years of age at study entry. Continued risky behavior
was defined as unsafe sexual intercourse (genital, anal, or oral), exchanging sex for money or drugs, and needle sharing that occurred longer than 6 months after first knowledge of HIV infection. Other risky behavior addressed in the study included fecal-oral contact, becoming pregnant, and being infected with a sexually transmitted disease.

The authors utilized a retrospective descriptive study design. At nine different Seattle-King County sites, trained researchers reviewed the 1990-1998 medical records of HIV-infected youths \( n = 139 \) and adults \( n = 2,880 \), beginning with each patient's initial visit and then every 6 months after until death occurred or the patient was lost to follow-up. Data were collected using standardized instruments and included unsafe sexual and risky behavior, demographics, psychosocial issues, and issues regarding HIV disease progression to include CD4 counts and disease classification.

Data were analyzed with SPSS 7.5 statistical software using adjusted odds ratios and multivariate analyses with descriptive statistics of frequency and percentage. The researchers identified that the median ages at both HIV diagnoses and study entry were lower in women than in men \( p < .001 \) and \( p = .03 \), respectively). Males accounted for 68% of the youths and 90% of the adults. In general,
youths were found to be more asymptomatic ($p < .001$) and have higher CD4 counts ($p < .01$) than adults. Youths were also less likely to have a psychiatric disorder than adults. However, they were more likely to participate in illicit drug use ($p = .05$). In addition, youths (males 28%, females 66%) were more likely to engage in risky behavior than adults (males 16%, females 46%) ($p = .02$). Youths also were more likely to become pregnant ($p = .01$) or be diagnosed with a sexually transmitted disease ($p < .001$). The researchers were able to associate continued risky behavior in adults with psychiatric disorders, suicidal ideation, and drug and alcohol use but could make no significant association in youths. The odds of participating in risky behavior were shown to increase in patients with higher CD4 counts, asymptomatic disease, and illicit drug use.

Diamond and Buskin (2000) concluded that youths were at least twice as likely to participate in risky behavior after HIV infection as adults. Although data suggest that women, both youth and adult, were more likely to participate in risky behavior than men, the authors attribute some of this result to the inclusion of pregnancy as a risk behavior and more frequent screening of sexually transmitted disease in women than men.
The authors acknowledged a limitation of their study was that they only collected information from HIV-infected youths actually engaged in medical care. The researchers could not account for those individuals who were not in medical care, signifying that the figures for HIV-infected youths who continue to engage in risky behavior might actually be higher than their study suggests. However, the authors considered the strength of their study was the consideration of youth risk behaviors over time, rather than what might be collected in a single survey. Diamond and Buskin (2000) advocated further research regarding the impact that highly active antiretroviral therapy might make on continued risky behavior. In addition, they proposed that future education and prevention programs should be targeted at HIV-infected youths as well as those who are not infected.

Diamond and Buskin (2000) compared the persistent risky behaviors of HIV-infected youths and adults. The current author investigated the continued risky behaviors of HIV-infected individuals. Targeting the young adult population, aged 18 to 25 years, might convey a unique and interesting mixture of the two groups studied by Diamond and Buskin. The current author included tattooing and body piercing in the exploration of continued risky behaviors of HIV-infected individuals.
Lansky, Nakashima, and Jones (2000) sought to describe the sexual risk behaviors of HIV-infected individuals associated with heterosexual transmission of HIV. Information for their analysis was collected through the Supplement to HIV/AIDS Surveillance (SHAS) project, which was instituted in 1990 with participation of 12 states across the country. The sample was derived from HIV and AIDS cases reported to local and state health departments in these 12 states from January of 1995 to December of 1998. Subjects were individuals who met the CDC guidelines as an infected case, were over 18 years of age, had HIV for at least one year, and reported vaginal or anal sex with a person of the opposite sex in the past 12 months. The final sample included 2,099 HIV-infected, heterosexual, sexually active individuals with 1,250 men and 849 women.

For the purposes of the study, sexual risk behavior was considered as inconsistent condom use during vaginal sex, inconsistent condom use during anal sex, or having multiple sexual partners. Condom use during vaginal sex and during anal sex was measured by how often condoms were used during these behaviors. The authors considered having multiple sexual partners as having more than one sexual partner in the past year. Drug use was defined as
intravenous drug or crack use in the past year. HIV status of latest partner also was addressed in the study.

Data were garnered using a standardized interview research instrument administered by trained personnel. This standardized questionnaire included questions regarding substance use and sexual risk behaviors as well as demographic information. The interview lasted about 45 minutes and was conducted in a manner that protected subject identity.

Lansky et al. (2000) wanted to separate drug-related risks from sexual risk behavior. Controlling for drug use, the researchers studied associations between condom use during vaginal sex, condom use during anal sex, having multiple sex partners, demographics, and partner’s HIV status using the Cochran-Mantel-Haenszel chi-square test. They analyzed the data using multiple logistic regression models and descriptive statistics.

Lansky et al. (2000) determined the majority of the participants were Black (66%), above 30 years of age (85%), and of lower socioeconomic status (69%). Of the total sample, 81% had AIDS. Thirty-four percent of the 849 women and 38% of the 1,250 men had used drugs in the past year.

Lansky et al. (2000) identified that 60% of men and women in the study reported a heterosexual risk behavior
(inconsistent condom use during vaginal or anal sex or multiple sexual partners). This percentage increased with drug use (78% among drug using women; 79% among drug-using men) \((p < .05)\). Male and female drug users were found more likely to be Black (71%), older, less educated, and of lower socioeconomic status than nonusers. In addition, drug users knew of their HIV status longer and were more likely to report a steady partner with HIV. Drug users were more likely to use condoms inconsistently during vaginal sex and have multiple partners. Although drug users were more likely to engage in anal sex, no difference was noted in condom use in anal sex between drugs users and non-drug users.

Interestingly, HIV status of the recent steady partner appeared to be the strongest risk predictor in drug-using and non-drug using women. Those women who reported a recent steady partner as HIV positive were more likely to engage in risk behavior.

In men, drug users having an uninfected steady partner reported less risky sexual behavior. In non-drug users, HIV status of steady partner only correlated with condom use during anal sex. Non-drug users who were unaware of their partner's status were more likely to use condoms inconsistently during anal sex. In general, Black
men were more likely to have multiple partners, and men aged 30 to 39 were less likely to report risk behavior.

Lansky et al. (2000) concluded that male and female drug users were at greater risk for heterosexual HIV transmission as they were less likely to use condoms consistently and more likely to have multiple partners. Drug-using subjects also were more likely to engage in anal sex, although the numbers for both drug users and non-drug users engaging in unprotected anal sex were alarmingly high considering the widely accepted concept of anal sex as an effective route of transmission.

The researchers determined the strongest predictor of risk behavior was the HIV status of a recent steady partner. In general, those individuals with an HIV-infected steady partner were more likely to engage in sexual risk behavior, which the authors attributed to less perceived risk to the infected steady partner on behalf of the participant.

Lansky et al. (2000) acknowledged that data from 12 states might not be generalized to the entire country. However, the researchers felt that the information collected highlighted important issues for the future of HIV management. They recommended continued education of HIV-infected individuals regarding the risks of anal sex. They recommended long-term education and longitudinal
exploration of risk behavior in HIV-infected individuals, suggesting that initial adoption of protective behaviors sometimes seen after diagnosis of HIV may not be sustained.

Lansky et al. (2000) explored heterosexual risk behaviors in HIV transmission. The current author also researched the risk behaviors of HIV-infected individuals. The focus was the continued risk behaviors of HIV-infected young adults. The current author included tattooing and body piercing as risk behaviors for HIV transmission as well as unprotected sexual activity and drug- and alcohol-using behaviors.

Erbelding, Stanton, Quinn, and Rompalo (2000) sought to explore the continued risk behaviors of HIV-infected individuals by defining the prevalence of sexually transmitted disease and self-reported sexual risk behavior among HIV-infected individuals. The researchers used a cross-sectional, descriptive design and survey.

HIV-infected individuals presented to an HIV primary care clinic were approached from June of 1997 to April of 1998 for participation in the study. A brief interviewer-administered questionnaire was completed to assess sexual risk behavior. This questionnaire addressed sexually transmitted disease treatment in the last year, date of last sexual encounter, condom use at last intercourse,
number of partners in the last month, partner change in the last month, and presence of STD symptoms to include dysuria, discharge, or abdominal/pelvic discomfort. A urine sample was then obtained from consenting participants and tested for gonorrhea and chlamydia (presence of N. gonorrhea or C. trachomatis nucleic acid by ligase chain reaction). In addition, baseline demographics, HIV transmission category, date of first positive HIV test, STD history reported at first clinic visit, CD4 counts, and HIV-RNA levels were abstracted from participants' medical records.

The researchers noted that males in general were less likely to give consent ($p = .03$). They also noted that individuals who reported heterosexual contact as route of HIV transmission were more likely to consent to the study. Ultimately, 745 patients were approached regarding participation in the study. Six hundred seventy-three patients completed the interview process, and 637 participants gave urine samples. The patients were then divided into categories based on route of HIV transmission.

The researchers utilized Epi Info 6.03 for analysis of data. A chi-square analysis was used to compare differences in each category between the groups. The
researchers used a t test to compare mean values of the data.

In univariate analysis, the researchers discovered that males were more likely than females to report multiple sexual partners \((p = .001)\) in the past month or a new partner in the last 3 months \((p = .002)\). Among the risk transmission route categories, gay/bisexual men were more likely to have multiple sexual partners \((p = .001)\) or a new sexual partner \((p = .001)\). A stratified analysis demonstrated that men who reported only heterosexual contact reported multiple sexual partners more often than women \((p = .014)\).

Of all participants, 34.2% did not use condoms at their last sexual encounter. No differences were identified in reported condom use between men and women, transmission category, or viral load. In addition, no differences were found in sexual activity or risk behavior among route of transmission groups (no data were presented for these values).

Chlamydia was prevalent in 2.4% of the study population (men, 2.8%; women, 2.1%). Gonorrhea was prevalent in 1.6% of study population (men, 1.5%; women, 1.7%). No relationship was noted between present gonorrhea or chlamydia infection and multiple sexual partners,
condom use at last encounter, STD symptoms, condom use, and history of STD.

Erbelding et al. (2000) discovered a high rate of gonorrhea and chlamydia infection among the study population. This finding substantiates the data that suggest one third of the population did not use a condom.

The authors suggest a limitation of their study was the fact that females and those with heterosexual contact as a transmission risk were more likely to consent to the study. However, they assert this was offset by the fact that all male participants in the study (both gay or bisexual and heterosexual) reported higher rates of sex partner change. Another limitation of the study was that the geographic area under study had the second highest rate of gonorrhea and the third highest rate of chlamydia in the nation, making the results less generalizable to the rest of the country. The authors recommended that regular STD screening become part of routine HIV care.

This study was relevant to the current author's research because it addresses continued risk behavior of HIV-infected individuals. Interestingly, the authors backed up self-reports with biological markers as evidence of continued sexual risk behavior. This author also addressed risk behaviors of the HIV-infected population, but concentrated on HIV-infected young adults. In
addition, this author explored more than sexual risk behavior. This author included drug and alcohol use as well as tattooing, body art behaviors, and sexual risk behavior.

Wenger, Kusseling, Beck, and Shapiro (1994) sought to assess the sexual risk behavior of HIV-infected individuals in their cross-sectional survey of patients engaged in care at an urban HIV continuity-of-care clinic. The researchers approached 371 patients at a primary care outpatient HIV clinic at an urban hospital between January and May of 1991. Patients were eligible for the study if they were HIV-infected, 18 years of age or older, and gave informed consent. Spanish-speaking persons were included and were interviewed by research personnel who spoke Spanish. Ultimately, 227 patients were eligible and willing to participate.

The patients were anonymously interviewed by trained research personnel using a structured instrument which asked questions about demographic information, when the subject became aware of his or her HIV infection, and sexual behavior history to include number of male/female partners in lifetime and in the last 3 months and number of sexually transmitted diseases. The questionnaire also addressed intravenous (IV) drug use, the HIV infection status of last partner, and knowledge about HIV infection
and attitudes toward prevention of the disease. Logistical regression and t test were used to analyze the data.

Wenger et al. (1994) considered unsafe sexual behavior to be the exchange of body fluids without use of a condom. They considered vaginal, anal, or oral intercourse with a condom to be safer sexual behavior. In addition, sexual activity with an at-risk partner (HIV status positive or unknown) was considered to be unsafe sexual behavior, and sexual activity with an HIV negative partner was considered safer sexual behavior.

Of the 227 participants, 93% (n = 210) were male. The age range of the participants was 22 to 62 years, with the mean age being 36 years. Forty-four percent of the participants were White, 33% were Hispanic, 16% were African American, 3% were Asian, and 3% were of other origins. Seventy-five percent of the respondents were never married, 5% were married, 13% were divorced, 5% separated, and 2% were widowed. Thirty-eight percent of the participants were employed, and the average level of education was 12th grade.

Of the male participants, 81% had at least one male sexual partner, and the median number of lifetime partners was 40 males and 3 females. Of the female participants, the median number of lifetime partners was 5. In both genders the number of partners in the last 3 months ranged
from 0 to 25 with the median number being 1. Sixty-eight percent of all the participants reported history of a sexually transmitted disease with a median of four episodes in lifetime. Twenty-three percent of all the participants reported using IV drugs, with 75% of these reporting sharing needles.

Nineteen percent of the subjects reported that they had no sexual partners after becoming aware of their HIV status while 41% reported having 1 partner, 13% having 2, 7% having 3, and 20% having had 4 or more. The median number of sexual partners since becoming aware of HIV status was 1.

The men reported of their most recent sexual partner that 86% were male, 36% were HIV positive, 37% were HIV negative, and 27% were of unknown HIV status. The women reported that their most recent partner was male and that 27% were HIV infected, 40% were negative, and 24% were of unknown HIV status.

Of sexual activity with last sexual partner, condoms were used for vaginal and anal intercourse with 84% of HIV-negative partners, 59% of partners with unknown HIV status, and with 51% of HIV-positive partners ($p = .02$). Likewise, for penile oral sex, condoms were used with 48% of HIV negative partners, 27% of partners with unknown HIV status, and 24% of HIV positive partners ($p = .04$).
In only 71% of the cases were the partners actually aware of the subjects’ HIV status. In addition, the HIV positive or unknown HIV status partners with whom the subjects engaged in unprotected sex were less likely to be aware of the subjects’ HIV infection.

Nine percent of all the subjects reported unsafe sexual behavior with an HIV-negative last sexual partner, and 13% reported unsafe sexual behavior with a partner of unknown HIV status. Wenger et al. (1994) discovered that subjects having unsafe sex with a recent HIV-infected partner were more likely to be employed (p = .05) and have a greater number of lifetime partners (p = .03). In addition, the subjects whose last partners were not known to be HIV positive were less likely to agree they were “good at talking about things like HIV” (p = .02) and were likely to disagree that they might “lie about my HIV test result to get someone to have sex with me” (p = .04).

Wenger et al. (1994) identified that most of the HIV-infected subjects did not participate in sexual behaviors that put others at risk. However, 22% of the subjects reported they had unsafe sex with their last partner and that this last partner was at risk for HIV infection. Moreover, safer sexual behavior was more likely if the subjects knew the partner was HIV negative and if the
subject felt more comfortable discussing HIV with the partner.

Wenger et al. (1994) acknowledged a limitation of their study was the fact that it is based on self-reported data and 39% of the patients did not participate in the study. Therefore, the results cannot be generalized to the remainder of the population. However, the results of this study are nonetheless disturbing and support the current authors' argument that further assessment of risk behaviors of HIV-infected individuals was necessary in order to develop education interventions to help reduce the transmission of the virus from those who are infected.

Like Wenger et al. (1994), DeHovitz, Feldman, Brown, and Minkoff (1997) also sought to describe the sexual behavior of HIV-infected adults in an urban setting in their retrospective comparison study of sexual risk transmission behavior. DeHovitz et al. recruited HIV-infected patients in Brooklyn, New York, into two separate cohorts. The first cohort consisted of 158 HIV-infected women at an urban medical center. The second cohort consisted of 218 HIV-infected men and 131 HIV-infected women at a drug treatment center.

Trained research personnel interviewed the subjects using standardized questionnaires. Separate questionnaires were used at each site, but both questionnaires contained
similar questions regarding demographic information, sexual history, and drug use for the preceding year before enrollment. The women at the medical center were also tested for sexually transmitted diseases as part of the study; however, STD testing was not feasible at the drug treatment center and was not performed on that cohort. Women from the medical center were enrolled from September 1991 to May of 1993. Patients at the drug treatment center were enrolled from June of 1989 to December of 1991. Data from the groups were compared using contingency table analysis, Fisher’s exact test, exact trend tests, and multiple regression analysis. Heterosexual Risk Behavior (HRB) was the main outcome variable for the study and was defined as having vaginal sex at least once in the last year and not always using condom.

The males and females from the drug clinic were of similar age (median age = 37 years), marital status, income, CD4 levels, and frequency of weekly vaginal sex in the last year. Males were more likely to have three or more partners in the last year (30% versus 12%, \( p < .001 \)).

The women from the medical center were different from those in the drug clinic in that they were younger (median age = 33 years) and were of higher income and educational level. They were also less sexually active (7% had three partners or more, \( p < .06 \)). The majority of the women
(75%) of the medical center reported HIV infection from heterosexual contact, 18% from IV drug use, 3% from blood transfusions, and 4% from unknown risk. Women of the medical center whose partners were HIV positive were more likely to have engaged in high-risk behavior (p < .047).

In all, 73% of the drug clinic females, 72% of the drug clinic males, and 42% of the medical center females reported high-risk behavior. Eight-eight percent of the drug center males, 82% of the drug center females, and 85% of the medical center females had one or more sexual partners in the last year. DeHovitz et al. (1997) identified that approximately half of each cohort reported weekly vaginal intercourse. Females from the drug clinic were 2½ to 5½ times more likely to engage in high-risk behavior than the medical center females. Current drug users were more likely to engage in high-risk behavior than nonusers (p < .42); however, only 9.5% of the participants were current drug users.

The researchers noted that high-risk behavior decreased among the females with increasing age and decreasing CD4 counts; however, there were no such trends among males. In both cohorts, high-risk behavior increased with increased frequency of sexual activity. At the drug clinic high-risk behavior was present in all patients reporting weekly sex while high-risk behavior was present
in only 56% to 69% of those patients reporting sex less than monthly \((p < .001)\). At the medical center high-risk behavior was present in over 50% of the patients reporting sex weekly or more often while high-risk behavior was present in only 20% of those reporting sex less than monthly \((p < .001)\).

DeHovitz et al. (1997) surmised that high-risk behavior is common in all the subgroups of the HIV patients they studied. While their definition of high-risk behavior might not be appropriate for all HIV-positive individuals, the researchers felt that the advantage of defining high-risk behavior so simply provided an index that can be used across different studies. A limitation of their study was the use of different questionnaires at different sites, as well as the "cohort effect" that might have occurred since the cohorts were actually enrolled at different times. However, the researchers maintained that a time difference of only 2 years was not likely to be significant. DeHovitz et al. (1997) urged that further study should be conducted to determine the high-risk behavior of HIV-positive individuals in order to develop interventions to decrease the heterosexual spread of HIV.

Declaring that minimal data were available on the prevalence of HIV-risk behaviors of those known to be infected, Simon et al. (1999) sought to discover the
prevalence of unprotected sex among men with AIDS in Los Angeles. They utilized data from an ongoing population-based HIV-risk behavior surveillance project, which was linked to the AIDS surveillance registry in Los Angeles, California.

In their study Simon et al. (1999) included men at least 18 years of age who resided in Los Angeles County, were newly reporting to the health department with AIDS, and completed a standardized interview. The interviews were part of the supplement to the HIV/AIDS Surveillance (SHAS) Project, which was directed by the CDC in cooperation with 12 participating state and local health departments. The SHAS was administered in English and Spanish by trained health department personnel and required about 45 minutes to complete. This survey included questions regarding demographic and socioeconomic status, sexual behavior, drug use, utilization of medical and social services, as well as the use of protease inhibitors.

Simon et al. (1999) analyzed responses to questions on numbers and types of sexual partners, types of sexual activity, and condom use in the year prior to the interview. Unprotected sex was described as having one or more sexual partners during the last year with whom the subjects had vaginal or anal intercourse and did not
always use a condom. Percentages of men who had unprotected sex were explored by sociodemographic characteristics, sexual orientation, drug use, protease inhibitor use, and time elapsed since learning of HIV infection status. The authors used the chi-square test to evaluate for statistical significance among percentages.

A total of 1,751 men were eligible for participation in the study. Ultimately 617 men of varied race or ethnicity completed the interview. Latinos represented 46%, and Whites represented 33% of the sample.

Of the men interviewed, 179 (29%) reported unsafe sex during the past year. Forty-three percent of these were less than 30 years of age, 31% were 30 to 39 years of age, and 22% were 40 years or older. The percentages of men having unsafe sexual behavior were higher among those with less than 12 years of education (35%) than those with greater than 12 years of education (25%, $p = .03$). Men who identified themselves as heterosexual (35%) were more likely to have unsafe sex than those who identified themselves as homosexual or bisexual (26%, $p = .03$). In addition, men who traded sex for money or drugs (37%) and those who learned of their HIV infection less than a year before the interview (44%) were more likely to engage in unsafe sexual activity. The percentage of men having
unsafe sexual activity was greater in nonwhites (31%) than Whites (23%, \( p = .05 \)).

Fifty-two percent of the men (\( n = 323 \)) reported having one or more male sexual partners in the last year. Of these, 230 reported insertive anal sex, and 22% admitted to not always using a condom during this activity. Of the men, 228 reported receptive anal sex, and 27% of these reported not always using a condom.

Twenty-one percent of the men (\( n = 131 \)) reported having one or more female partners in the last year. Fifty-three percent of these reported not always using a condom with vaginal sex. Of the 34 men (26%) reporting anal sex with a female partner, 18% reported not always using a condom.

Simon et al. (1999) stated that their study was the first study to provide population-based data on the prevalence of unprotected sex in HIV-infected individuals. The researchers maintained that their results reflect national projects suggesting that the age of HIV infection is declining.

The researchers conceded the limitation of their study was a low participation rate and under-representation of all ethnic groups, making it difficult to generalize their results to the rest of the population. They also acknowledged that the results were based on
self-reports and most likely under-represents the true prevalence of unprotected sex. In addition, the study only included men with AIDS and did not represent the behaviors of men with less advanced HIV disease. Simon et al. (1999) added that information regarding the HIV status of the subject’s partners could be pertinent subject matter for further research.

In spite of the limitations, Simon et al. (1999) maintained that their results suggest a need for interventions designed to reduce sexual risk behavior among HIV-infected persons, especially those of younger age groups. They urge that clinicians should routinely assess their HIV-infected patients for persistent unsafe sexual behavior and provide education and intervention when indicated.

Sherman and Kirton (1999) examined the relapse to unsafe sexual behavior in HIV-infected heterosexual minority men. The purpose of the study was to examine factors that influenced beliefs and practices of HIV-infected men who relapse to unsafe behavior after attempts at practicing safer sexual behavior. The primary goals of the study were to identify the individuals’ perceptions regarding HIV, to describe the relapse event and factors that contributed to the event, and to identify perceived benefits, barriers, and sense of control related to safer
sexual behavior. The researchers utilized Rosenstock's Health Belief Model and Ajzen's Theory of Planned Behavior as their conceptual framework for this study.

In this qualitative study, Sherman and Kirton (1999) utilized a descriptive, exploratory method. They conducted interviews with 18 HIV-infected heterosexual minority men who were either engaged in care at an outpatient HIV clinic in upstate New York or who were involved in HIV community organizations in New York City. The 18 men were self-described as having relapsed to unsafe sexual behavior after a period of practicing safer sex. After offering informed consent, each subject was given a one-time, face-to-face interview, which took approximately 1 to 2 hours.

Sherman and Kirton (1999) included the following steps in their data analysis. They developed detailed knowledge of the interviews and logs. They noted their impressions of the subjects' statements, listed tentative headings for recurrent themes, analyzed the statements, and then placed them under the identified headings. The researchers summarized new impressions and compared these data for commonalities and differences. Finally, the researchers established themes that described patterns and observations across the descriptions of the events.
Sherman and Kirton (1999) ensured scientific strictness of the study by establishing trust in order to represent the informers' world in an accurate and credible manner. They used peer defining to acknowledge emotions and feelings that might influence their own perceptions. Reliability was established on 50% of the transcripts, and congruency was established on 94% of the coding for the transcripts. Although the primary investigator was a White female and the co-investigator was an African American male, it was noted that the participants expressed comfort discussing their sexual behavior despite the gender or race of the interviewers and researchers.

The sample consisted of 16 African American men and 2 Hispanic men. Their ages were 38 to 56 years, and all had been known to be HIV positive for more than 3 years. All but one informant reported IV drug use in the past, and most believed they acquired HIV through drug use. Although the majority were high school graduates, all participants were of low socioeconomic status. The participants believed they had a high knowledge of HIV and behaviors needed to protect and maintain their health.

The informants described safer sex as using condoms for vaginal and anal sex. Two of the informants described safe sex as abstinence. Although more than half knew that oral sex was unsafe and some reported the use of dental
dams when performing oral sex on their partners, none of the participants knew that condoms should be worn when women perform oral sex on the male partner.

The participants described an initial period of abstinence after HIV diagnosis that ranged from 1 week to 2 years. The majority said they initially had sex with only primary partners or were more selective about their partners and used condoms for vaginal and anal sex. However, all participants eventually relapsed to unsafe sexual behavior.

The participants described barriers to safer sex being issues, such as unavailability of condoms, factors related to physical discomfort of condoms, and inhibition of romance. They described the benefits of safer sexual practices as being protection of self and others against HIV and STDs, protection from pregnancy, and satisfying their partners’ concerns about HIV transmission. However, the participants reported that not using condoms allowed them a better sense of acceptance and intimacy and that condom use served as a reminder of their HIV infection.

Several themes were related to the relapse to unsafe sexual behavior. The majority of the informants reported that drug and alcohol use contributed to sexual relapse by decreasing inhibitions. The participants also added that their state of mind affected their behavior because when
the participants "felt good," they felt more powerful over HIV and were more likely to have unsafe sex. When they "felt bad," they felt powerless over HIV and they gave up control over their sexual behavior (using condoms). Another common theme was the positive or negative influence of friends or peers who either encouraged the participants to have unsafe behavior or to practice safer sex. Physical and emotional preparation was another theme related to unsafe sexual behavior; when a sexual behavior was planned, the participants were more likely to practice safer sex and have condoms available. Impulsive sexual activity in the heat of the moment was associated with unsafe sexual behavior. One of the most prevalent themes was related to male and female relationship issues and the importance of partner acceptance and rejection. The majority reported unsafe sexual behavior resulting from the need to be accepted.

Sherman and Kirton (1999) maintained that their study provided greater insight into the phenomenon of relapse to unsafe sexual practices. They stated that, despite knowledge of the disease, transmission routes, and perceived susceptibility, all the participants did in fact relapse to unsafe sexual behavior. Knowledge alone was not enough to prevent a relapse. Although the researchers believed generalization of their results must be made with
caution, they claimed that the results suggest the need to focus not only on increased education of HIV-infected persons, but on assessment of their feelings and emotions regarding unsafe sexual practices and HIV as well.

Realizing the scarcity of research regarding the risk behavior of HIV-infected females, Wilson et al. (1999) sought to document the sexual, drug use, and contraceptive behaviors of HIV-infected women and women who are at risk for HIV infection.

Wilson et al. (1999) utilized data from the Women's Interagency HIV Study (WIHS), a multicenter longitudinal study established to explore the natural history of HIV infection in women. The WIHS collected data from 2,587 women (2,040 HIV-positive; 547 HIV-negative) and represents one of the largest prospective cohort studies of HIV-infected and uninfected women. WIHS sites are located in Washington, DC, Los Angeles, San Francisco, Brooklyn, Manhattan, and Chicago.

Potential subjects were eligible for the study if they offered written consent to participate, were 15 to 44 years of age, and had known their HIV infection status for longer than 6 months. A structured face-to-face interview was conducted with each study subject which addressed sociodemographic issues, medical and health history, Ob/Gyn history, sexual and drug use behaviors,
contraceptive and condom use, health care utilization, and psychosocial issues. Participants were asked to report illicit drug use in the last 6 months to include crack, cocaine, and IV drug use. The women were asked about their sexual behavior in the last 6 months including frequency of vaginal sex, anal sex, fellatio, and cunnilingus and the frequency of condom use during each act.

Prevalence of condom use was analyzed by Fisher’s exact test for dichotomous variables and the Mantel extension test for ordered variables and was compared between the HIV-positive and HIV-negative women. Differences in contraceptive behaviors were also analyzed using Fisher’s exact test. Odds ratios for condom use were estimated for each of the four sexual behaviors (vaginal sex, anal sex, fellatio, and cunnilingus). HIV infection, drug use, frequency of sexual activity, and number of male partners in the last 6 months were factored in and studied as covariates.

Ultimately, data were collected and analyzed on 2,288 women. Roughly 67% (n = 1,544) reported that they had engaged in at least one episode of heterosexual activity in the last 6 months (65% HIV-positive vs. 76% HIV-negative; \( p < .01 \)). Both HIV-infected and uninfected women were similar regarding demographic issues such as marital status, education level, and income. The HIV-positive
women tended to be older than the HIV-negative women ($p < .01$). The HIV-infected women had known about their serostatus for an average of 3.9 years. The uninfected women received their last negative HIV test result an average of 1.3 years prior.

Drug use was reported by both HIV-infected and uninfected women for the period of 6 months prior to the interview. Crack was used in 19.7% of the HIV-infected women and 25% of the HIV-negative women ($p = .03$). Cocaine was reported in 15% of the HIV-infected women and 19.7% of the HIV-negative women ($p = .05$). IV drug use was reported in 8.8% of the HIV-infected women and in 10.3% of the HIV-negative women ($p = .37$). HIV-infected women were less likely to report recent drug use (26.7%) than HIV-negative women (35.1%, $p < .001$).

There were no differences in the proportion of HIV-positive and HIV-negative women who engaged in vaginal sex (96.8% vs. 97.8%, $p = .39$) or anal sex (11.8% vs. 9.5%, $p = .23$). However, HIV-infected women were less likely to engage in cunnilingus (40.9%) than HIV-negative (70%, $p < .001$), and HIV-positive women were less likely to engage in fellatio (48.4%) than HIV-negative women (56.9%, $p < .001$).

Wilson et al. (1999) noted that the HIV-infected women were more likely to report condom use consistently.
In fact, the lower the CD4 count in these women was, the more likely they were to report consistent condom use during vaginal sex. However, no significant relationship was demonstrated between CD4 levels and consistent condom use during anal sex, fellatio, and cunnilingus. HIV-infected women who reported increased frequency of vaginal sex were more likely to report inconsistent condom use.

Even when controlling for such factors as frequency of sexual activity, number of partners, and HIV infection, drug use was associated with a lack of consistent condom use. Women who reported no drug use were more likely to report consistent condom use.

Women with HIV infection were less likely to use other forms of contraception. They were less likely to use oral contraceptives, IUDs, or the rhythm method ($p < .05$) but were more likely to report use of condoms, Norplant, Depo Provera, or a diaphragm.

Wilson et al. (1999) claimed that their study suggested that HIV-infected women demonstrated lower levels of risk behavior than those who are uninfected. However, the researchers recognized that a substantial proportion of women in each group still engaged in unsafe sexual behavior.

Wilson et al. (1999) conceded limitations of their study. They acknowledged that the cross-sectional design
of the study makes it difficult to generalize the results. Also, the reliability and validity of self-reports of drug users are often called into question. However, the authors maintained the results of their study raise concern over the number of HIV-infected women participating in high-risk activities. Wilson et al. argue that further research is necessary in order to develop interventions to decrease the spread of HIV from those who know they are infected.

Focusing their research efforts on one of the fastest growing HIV populations, Murphy et al. (2000) explored the high-risk behaviors of HIV-infected adolescents and the role psychological distress plays in high-risk behavior. In their research study, researchers utilized subjects enrolled in the REACH Study, an observational, longitudinal study of HIV-positive adolescents infected through high-risk behavior and HIV-negative control patients. Murphy et al. (2000) enrolled HIV-positive patients aged 12 to 18 years in the study between 1995 and 1999 at 15 clinical sites across the United States. Data were collected at study visits every 6 months for up to six study visits.

Murphy et al. (2000) extracted their data from two sources: face-to-face interviews conducted by trained research personnel and an Audio Computer Assisted Self-Administered Interview (ACASI). The face-to-face
interviews addressed demographics, such as age, race or ethnicity, and educational level. The ACASI contained questions visible on the computer screen and also read to the subject through earphones. These questions addressed sensitive and personal behaviors to include sexual behavior and substance abuse, depression, and anxiety. Data from the ACASI were automatically encrypted and transferred to the REACH Study Data Center.

Recent sexual activity was considered as having at least one sexual partner in the last 3 months. The subjects were asked the number of times they engaged in anal, oral, or vaginal sex with each partner and the number of times the subjects used condoms during these acts.

For the purposes of the study, substance abuse was defined as alcohol or marijuana use in the last 3 months as measured on a 5-point Likert scale (from 0 time to every day). Alcohol dependence was measured by the CAGE screening questions.

Psychological distress was considered depression or anxiety. Depression was measured by the CES-D Self-Report Symptom Rating Scale developed by the Center for Epidemiologic Studies at the NIH, originally developed for adults but adapted for adolescents. The scale has good internal consistency, with a Cronbach’s alpha for this
particular sample being $r = 0.88$. Anxiety was measured by Reynolds and Richmond's Manifest Anxiety Scale (Cronbach's alpha for this sample was $r = 0.85$). Widely used for adolescents, this scale addresses psychological anxiety and worry or oversensitivity with specific anxiety domains of sleep, social contact, appetite, and concentration at school or work.

Murphy et al. (2000) addressed four risk behaviors: frequent alcohol use, frequent marijuana use, recent sexual activity, and any unprotected sex in the last 3 months. Controlling for race, age, and gender, the researchers used multivariate logistical regression to examine associations between the risky behaviors and the four psychological measures. They also controlled for number of study visits and length of time on the study.

Ultimately data from 323 HIV-infected subjects and 1,212 study visits were examined. In general, reported risk behavior was higher at the first visit and seemed to decline over time. Because dropout rate was not identified to be the cause of the decline, a trend analysis was performed for each risky behavior over time. A declining trend was significant for only frequent alcohol use ($p = .03$) and frequent marijuana use ($p < .0001$).

Murphy et al. (2000) then examined relationships between the four risk behaviors and the four measures of
psychological distress. Significant correlations were noted between frequent alcohol use and frequent marijuana use ($\phi = 0.27; p < .0001$), frequent alcohol use and recent sexual activity ($\phi = 0.11, p = .0001$), and frequent marijuana use and unprotected sex ($\phi = -0.10, p = .01$).

Health anxiety was associated with frequent marijuana use, while depression was associated with frequent alcohol use. The researchers also noted a significant association between psychological anxiety and recent sexual activity. Subjects who reported high levels of anxiety were more likely to have had recent sexual activity. For those who reported low levels of anxiety, sexual activity was constant over time. A significant correlation was noted between depression and unprotected sexual activity in the last 3 months. Subjects who were depressed were 50% more likely to have had unprotected sex.

Murphy et al. (2000) noted a high rate of risk behaviors in HIV-infected adolescents, 33 subjects reported marijuana use at the first visit, 25% reported frequent marijuana use across the visits, and one in six subjects reported frequent alcohol use. Sixty-five percent of the sample were sexually active across the visits with 43% of the sample consistently reporting unprotected sex. The authors noted that although these youths were engaged
in care, they maintained their high-risk behavior over time.

Murphy et al. (2000) recognized a limitation of their study was that only HIV-infected adolescents engaged in care were examined which represents only a small portion of the adolescent HIV-infected population. Therefore, the results are difficult to generalize to the entire population.

Murphy et al. (2000) suggested that future research in this area is necessary to help control the transmission of HIV by reducing high-risk behaviors in adolescents. The authors stated their findings suggest that depression leads to unprotected sex and that anxiety is associated with recent sexual activity. They urge that psychological distress be assessed by clinicians as well as risk behavior in this high-risk group.

In another recent study, Campsmith, Nakashima, and Jones (2000) explored drug use after HIV diagnosis and its relationship to high-risk sexual behaviors in HIV-infected individuals. They noted that crack use has been associated with high-risk sexual behaviors and that crack users with HIV have the potential to transmit HIV to their sexual partners. The purpose of their study was to explore crack use among HIV-infected individuals and its association with high-risk sexual behaviors in three groups:
heterosexual men, heterosexual women, and men who have sex with men (MSM).

The researchers utilized data from the Supplement to the HIV/AIDS Surveillance (SHAS) Project. HIV-infected persons of at least 18 years of age were eligible for participation in the SHAS. Standardized interviews were administered by trained personnel in 12 states. The authors analyzed data from SHAS questionnaires administered from January of 1995 through December of 1999. Ultimately, 10,415 people completed interviews.

Campsmith et al. (2000) coded sexual behaviors as (a) always uses condoms since diagnosis of HIV versus any unprotected sex (examined separately for main and casual partners), (b) one sexual partner in the past year versus more than or equal to two, and (c) exchanged sex for money or drugs versus did not exchange sex for money or drugs. The researchers asked participants a screening question about whether they had ever used drugs or alcohol to get high. Those participants who reported having using drugs were then asked specifically if they had ever used crack and, if so, when the last time they had used it. Self-reported HIV diagnosis data were then used to calculate which respondents had used crack since learning they were HIV-infected.
The researchers compared groups by crack use (never used, used before HIV diagnosis but not after, used after HIV diagnosis) using $\chi^2$ tests, odds ratios, and 95% confidence intervals. Differences in sexual risk behavior among crack users were examined by $\chi^2$ tests. Analysis of crack use and sexual risk behavior were stratified by sexual orientation. Multivariate logistical regression analysis was used to examine the relationships between crack use and four groups of sexual behavior: (a) unprotected sexual behavior with main partner since HIV diagnosis, (b) unprotected sexual behavior with casual partners since HIV diagnosis, (c) having multiple partners in the last year, and (d) exchanging sex for money or drugs in the last 5 years. Analyses were conducted using Statistical Analysis Software, Version 6.

Of the 10,415 people completing the interview, 75.5% were men, 48.3% were Black, 32.2% were White, and 78.6% had a diagnosis of AIDS. Men reported their HIV exposure categories as MSM (53.4%), injection drug use (20.8%), MSM who inject drugs (10.5%), heterosexual contact with partner at risk for HIV (8.8%), and other (6.5%). Women reported their exposure categories as heterosexual contact with a partner at risk for HIV (48.9%), injection drug use (35.7%), and other (15.4%). All subjects were classified into three groups: male heterosexuals ($n = 2,660$), MSM ($n$
= 5,207), and female heterosexuals (n = 2,499). Forty-nine women who identified themselves as lesbians were excluded from the sexual behavior analysis.

Thirty-three and a half percent of the respondents (n = 3,483) reported ever using crack. Approximately 27% of MSM, 42.1% of heterosexual men, and 37.4% of heterosexual women had ever used crack. Crack users were younger, more likely to be Black, and have less education than those who had never used crack. They were also more likely to have injected drugs, had an STD, and been diagnosed with HIV more than 2 years. The majority of crack users (69.4%) reported using crack since their HIV diagnosis.

Seventy percent of all subjects were sexually active, and sexual activity was more prevalent in those subjects who had used crack since their HIV diagnosis. In addition, a greater proportion of the subjects who used crack since HIV diagnosis reported sexual risk behavior. Considering those who had ever used crack, heterosexual women were less likely to have multiple sexual partners, but were more likely to report unprotected sex with main partners and exchanging sex for money or drugs (when compared to heterosexual men or MSM).

For all three sexual orientation groups, having a main partner who was HIV positive was a strong predictor for having unprotected sex with a main partner. Crack use
after diagnosis was a predictor of unprotected sex with main partner for MSM and heterosexual women, but not for heterosexual men. Crack use after diagnosis was also a strong predictor of having multiple sexual partners for all three sexual orientation groups. Crack use after diagnosis was a predictor of exchanging sex for money or drugs only in Black heterosexual men, MSM, and heterosexual women.

Campsmith et al. (2000) discovered that both drug and high-risk sexual behavior were common in their study population. One third of the respondents reported using crack cocaine with 70% of these using crack since their HIV diagnosis. Crack was more prevalent in women, Blacks, and injection drug users. Crack use after HIV diagnosis was a significant predictor of high-risk sexual behavior in all sexual orientation groups.

Campsmith et al. (2000) identified a limitation of their study was the fact that the SHAS is only administered in 12 states and relies on self-reported information. Therefore, these results might not be generalizable to the entire population. However, the authors maintained that the results of the study indicated that the behaviors associated with obtaining and using crack increased the risk of HIV-infected crack users to transmit the virus to their sexual partners. They urged
that HIV-infected crack users be targeted for further education and prevention measures in order to reduce the transmission of HIV.

Summary

A review of literature revealed certain sexual and drug- and alcohol-using risk behaviors of the HIV-infected individuals studied. Because most of the research focused on either adolescents or older adults, information regarding HIV-infected young adults aged 18 to 25 years is scarce. Moreover, behaviors specific to the HIV-infected young adult population, such as tattooing and body piercing, were not addressed. The literature review led this researcher to conclude that further research was necessary regarding the risk behaviors of HIV-infected young adults, including sexual, drug and alcohol using, and body art behaviors. By determining the exact continued risk behaviors of HIV-infected young adults, education and intervention measures can be developed to help decrease the transmission of HIV from this rapidly growing group.
Chapter III
The Method

The purpose of this study was to explore the continued risk behaviors of HIV-infected young adults. In this chapter the research design and methods used to study the variable of interest will be discussed. The limitations of the study will be acknowledged. The setting, population, and sample will be identified. In addition, the instrument and procedures used to collect the data will be identified. Lastly, the methods of data analysis will be identified.

Design of the Study

A nonexperimental, descriptive research study design was used to explore the risk behaviors of HIV-infected young adults. This study was descriptive and noninterventional. A questionnaire was employed to establish the sexual behavior, drug and alcohol use, body art behaviors to include tattooing and body piercing, of HIV-infected young adults. In addition, the questionnaire addressed self-efficacy issues in order to explore the correlation between HIV-risk behavior and self-efficacy.
Variables

The variables of this study were the sexual behavior, drug and alcohol use, and body art behaviors of HIV-infected young adults. Controlled variables in the study included the geographical setting and age group of the participants and HIV infection status of the participants. Intervening variables may have included honesty of the participants and understanding of the participants in answering the questionnaire, as well as the milieu in which the questionnaire was administered.

Limitations

Several limitations were identified in the study. The sample consisted of HIV-infected adolescents attending HIV support groups in inner city Memphis, Tennessee, which have limited generalization of the study results to other geographical areas. In addition, the study population was predominantly African-American, limiting the ability to generalize the study results to all races. Finally, the study questionnaire was researcher-developed with unestablished reliability and validity, although reliability and validity were assumed within the confines of this study. Therefore, a generalization of the results of this study may not be made to other populations of HIV-infected young adults.
Setting, Population, and Sample

The setting for this study was HIV support groups conducted at a Ryan White Grant-supported agency in inner city Memphis, Tennessee. The groups are facilitated by licensed social workers and meet on a weekly basis. The current population of Memphis is approximately 640,000. Current statistics indicate the population of this city as 47.8% African American, 44.0% Caucasian, and 1.2% other, with Caucasians representing the minority.

The study population was HIV-infected young adults, aged 18 to 25 years, attending the HIV support groups. The HIV support groups serve both men and women, adults, and adolescents. The target sample was 30 participants. The final sample was one of convenience and consisted of 11 subjects who met the criteria, offered written consent to participate, and were present on the days of data collection.

Instrumentation

The instrument used in this study was a researcher-designed questionnaire (see Appendix A). The questionnaire contained four demographic questions, 13 risk behavior questions, and a 9-item self-efficacy scale developed by other researchers specifically for HIV risk behaviors. The self-efficacy scale was incorporated into the study
questionnaire with permission from the developing research
group. The questionnaire was predominantly multiple-choice
and could be completed in approximately 15 to 25 minutes.

The demographic questions addressed age, race, gender, and level of education. The risk behavior portion of the questionnaire addressed sexual risk behavior, drug and alcohol use, and tattooing and body piercing behaviors. The self-efficacy portion included questions regarding the participants’ belief that they could perform safer behaviors.

The questionnaire was developed after a review of the literature and was used for the first time in this study. Therefore, no reliability or validity has been established for the instrument, with the exception of the self-efficacy scale portion of the questionnaire which has a Cronbach’s alpha score of 0.75. However, face validity of the questionnaire within the confines of this study was assumed.

Protection of Human Subjects

Permission to implement the study was obtained from the Mississippi University for Women Committee on the Use of Human Subjects in Experimentation (see Appendix B). In addition, written permission was obtained from the support
group agency to approach its support group participants after being in the study (see Appendix C).

Data Collection Procedure

During a time approved by the support group agency, the researcher gave a detailed explanation of the study to each group as a whole and answered any questions that arose from the participants. Written consent (see Appendix D) was obtained from those participants willing to participate in the study. The questionnaire and writing instruments were then passed out to the participants who were asked not to sign their names on the questionnaire. The participants were instructed on how to complete the questionnaire and were allowed enough time to mark their answers. The researcher then collected the consent forms and questionnaires after completion and placed them in separate envelopes. The consent forms and questionnaires were stored in a locked file cabinet. Data collection took place over a period of 3 weeks.

Data Analysis

Data collected were analyzed using descriptive statistics and to include percentage, mean, median, and mode.
Chapter IV
The Findings

The purpose of this descriptive study was to explore the continued risk behaviors of HIV-infected young adults. Sexual behaviors, drug and alcohol use, and body art behaviors were investigated. A nonexperimental descriptive study was conducted among young adults using a self-report questionnaire. Data were analyzed using percentages and frequency distributions. The findings from the study are presented in this chapter.

Description of the Sample

The sample for this study was comprised of 11 subjects who were HIV-infected by self-report. The study was conducted on HIV support groups in an agency in a metropolitan city in southwest Tennessee. The ages of the participants ranged from 18 to 24 years, with a mean age of 19.36. Age distribution of the sample is described in Table 1.
Table 1
Age Distribution of Sample by Frequency and Percentage

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>f(^a)</th>
<th>(%)^b</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>19</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>20</td>
<td>4</td>
<td>36.36</td>
</tr>
<tr>
<td>21</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td>22</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>23</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>24</td>
<td>1</td>
<td>9.09</td>
</tr>
</tbody>
</table>

\(^a\)N = 11. \(^b\)Percentages rounded to the nearest tenth place.

Additional demographic characteristics were determined from the data. All 11 subjects were African American. Two of the subjects were male, the remaining 9 subjects were female. The subjects represented a broad range of education level ranging from 8\(^{th}\) to 12\(^{th}\) grade. Each of these demographic characteristics is depicted in Table 2.
Table 2

Demographics of Sex, Race, and Education Level by Frequency and Percentage

<table>
<thead>
<tr>
<th>Variable</th>
<th>f^a</th>
<th>g^b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian (White)</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>African American (Black)</td>
<td>11</td>
<td>100.00</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>Female</td>
<td>9</td>
<td>81.81</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8th grade</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>9th grade</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>10th grade</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>11th grade</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>12th grade</td>
<td>4</td>
<td>36.36</td>
</tr>
</tbody>
</table>

^aN = 11. ^bPercentages rounded to the nearest tenth place.

Findings Related to Risk Behavior

Sexual risk behavior. Of the men, one described himself as heterosexual, and the other described himself as bisexual. One woman described herself as homosexual, while the rest described themselves as heterosexual.

All of the women reported from 0 to 4 sexual partners since finding out they had HIV. One man reported 1 to 4
sexual partners since HIV diagnosis, and the other reported 11 to 20. Only one of the subjects reported having casual or anonymous sex since HIV diagnosis.

Eight subjects (1 male and 7 females) reported diagnosis of a sexually transmitted disease since finding out they have HIV. Two of these subjects reported more than one sexually transmitted disease since HIV diagnosis. Three subjects reported having sex with another person who has HIV or another sexually transmitted disease. Two of these subjects reported practicing protected sex with that person some of the time but not always.

Six subjects reported having either anal, vaginal, or oral sex without protection. Two of these reported having anal sex without protection, 2 reported oral sex without protection, and 3 reported vaginal sex without protection. Two subjects declined to answer this question. Six subjects reported using protection with every partner, while 3 reported only occasional use of condoms. Sexual risk behavior is depicted in Table 3.
Table 3

Sexual Risk Behavior by Frequency and Percentage

<table>
<thead>
<tr>
<th>Variable</th>
<th>f^a</th>
<th>%^b</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexual preference</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male heterosexual</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>Male homosexual</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Male bisexual</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>Female heterosexual</td>
<td>8</td>
<td>72.72</td>
</tr>
<tr>
<td>Female homosexual</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>Female bisexual</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>No. of sexual partners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male 0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>1-4</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>5-10</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>11-20</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>21-50</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>51 or more</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Female 0</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>1-4</td>
<td>8</td>
<td>72.72</td>
</tr>
<tr>
<td>5-10</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>11-20</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>21-50</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>51 or more</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Casual sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>90.90</td>
</tr>
<tr>
<td><strong>Unprotected sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anal</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>Oral</td>
<td>2</td>
<td>18.18</td>
</tr>
<tr>
<td>Vaginal</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td><strong>Sexually transmitted disease</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8</td>
<td>72.72</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>27.27</td>
</tr>
</tbody>
</table>

N = 11. Percentages rounded to the nearest tenth place.
Alcohol and drug use. Six subjects (all women) reported not drinking alcohol since HIV diagnosis. Five participants (2 men and 3 women) reported sometimes drinking alcohol. Only one subject (male) reported using recreational drugs, such as cocaine, crack, or speed, and none of the subjects admitted to injection drug use. Alcohol and drug use are depicted in Table 4.

Table 4
Drug and Alcohol Use by Frequency and Percentage

<table>
<thead>
<tr>
<th>Variable</th>
<th>f&lt;sup&gt;a&lt;/sup&gt;</th>
<th>%&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alcohol</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>6</td>
<td>54.54</td>
</tr>
<tr>
<td>Sometimes</td>
<td>5</td>
<td>45.45</td>
</tr>
<tr>
<td>Frequently</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Recreational drugs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>10</td>
<td>90.90</td>
</tr>
<tr>
<td>Sometimes</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Frequently</td>
<td>1</td>
<td>9.09</td>
</tr>
<tr>
<td><strong>Injection drugs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>11</td>
<td>100.00</td>
</tr>
<tr>
<td>Sometimes</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Frequently</td>
<td>0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

<sup>a</sup>N = 11. <sup>b</sup>Percentages rounded to the nearest tenth place.
Tattoo and body piercing. Two of the subjects reported having no tattoos or body piercings since HIV diagnosis. Seven subjects reported having one or more tattoos and that ink and needles were never shared. Five subjects reported having one or more body piercings and that piercing equipment was never shared. Body art is depicted in Table 5.

Table 5
Body Art by Frequency and Percentage

<table>
<thead>
<tr>
<th>Variable</th>
<th>( f^a )</th>
<th>( %^b )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tattoo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7</td>
<td>63.63</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>36.37</td>
</tr>
<tr>
<td>Piercings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>5</td>
<td>45.45</td>
</tr>
<tr>
<td>No</td>
<td>6</td>
<td>54.55</td>
</tr>
<tr>
<td>Both tattoo and piercings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>3</td>
<td>27.27</td>
</tr>
<tr>
<td>No</td>
<td>8</td>
<td>72.72</td>
</tr>
</tbody>
</table>

\( ^aN = 11. ^bPercentages \) rounded to the nearest tenth place.

Findings Related to Self-Efficacy

Self-efficacy was also addressed. The self-efficacy score ranged from 1 (not sure at all) to 5 (very sure).
The self-efficacy scores for the population ranged from 3 to 5, with an average score of 4.6. Eight of the subjects reported being very sure they could talk about safe sex with a partner. Ten subjects were very sure they could buy condoms in a drug store. Nine subjects were very sure they could refuse to have sex with a person they did not know very well. Ten subjects were very sure they could use a condom correctly. Ten were very sure they could refuse to shoot up drugs if someone asked them to do so. Every subject was sure they could convince a partner to use a condom. Eight were very sure they could prevent a partner from having anal sex with them. Ten were very sure they could ask a partner about their sexual partners. Ten were very sure they could refuse to use a needle that had been used by a friend.

Additional Findings

Eight subjects reported suffering from depression since HIV diagnosis. Two subjects reported experiencing severe guilt. Three subjects reported severe anxiety.

There was no opportunity to observe a relationship between risk behavior and self-efficacy due to the small sample size and lack of deviation in response. Therefore, it is unrealistic to make a correlation or inference
between risk behavior and self-efficacy. For that reason, only observations were reported.

Regarding alcohol and drug use, those subjects who reported never drinking alcohol ($n = 6$) demonstrated an average self-efficacy score of 4.8. Those who reported sometimes using alcohol ($n = 5$) had an average self-efficacy score of 4.4. Those subjects who reported never using recreational drugs demonstrated an average self-efficacy score of 4.6. The one subject who reported frequent recreational drug use had a self-efficacy score of 4.7.

Concerning body art, those subjects who reported having no piercings or tattoos since HIV diagnosis ($n = 2$) exhibited an average self-efficacy score of 4.9. Those who reported tattoos ($n = 7$) had an average self-efficacy score of 4.5. Those who reported piercings ($n = 5$) had an average self-efficacy score of 4.8. Those with both tattoos and piercings ($n = 3$) demonstrated a self-efficacy score of 4.8.

The subjects who reported depression since HIV diagnosis ($n = 8$) exhibited an average self-efficacy score of 4.8. Those who suffered guilt ($n = 2$) demonstrated a score of 4.8. Those with anxiety ($n = 3$) had a score of 4.7. Those who suffered none of these ($n = 2$) had an average self-efficacy score of 3.8. The subjects who told
all of their partners about their HIV status had an average self-efficacy score of 4.4 while those who only told some of their partners had an average score of 4.7.

Regarding sexual risk behavior, those subjects reporting a sexually transmitted disease (STD) since HIV diagnosis (n = 8) demonstrated an average self-efficacy score of 4.8, while those who did not (n = 3) had an STD average score of 4.3. Subjects reporting any sexual intercourse (anal, oral, or vaginal) (n = 6) exhibited an average score of 4.4 while those who did not had an average score of 5.

The subjects who reported no sex with another person with HIV since HIV diagnosis (n = 8) demonstrated an average self-efficacy score of 4.8. Those who did have sex with another HIV-infected person had an average score of 4.1. Of the three patients who reported sex with another HIV-infected person, the two who only practiced safe sex with that partner some of the time had a self-efficacy score of 4.7 while the one patient who reported safe sex every time with an HIV-infected partner had an average score of 4.4.

Summary

The results of this research indicated that HIV-infected young adults participate in risk behavior. Sexual
risk behavior was the most often reported risk behavior. The subjects less frequently reported drug and alcohol use. While the majority of the sample reported body art behavior, no body art equipment was shared with others.

The research also revealed that the majority of the HIV-infected young adults in the sample have high self-efficacy levels regarding risk behavior. In addition, the majority of the sample suffered from depression.

This chapter described the findings of the research. The following chapter will address conclusions derived from the findings of this research.
Chapter V
The Outcomes

The HIV-infected population is increasing despite education and prevention efforts. One of the fastest growing HIV populations is under the age of 25 years. The purpose of this study was to explore and describe the continued sexual, drug and alcohol, and body art behavior of HIV-infected young adults age 18 to 25 years.

Bandura’s (1997) Self-Efficacy Theory served as the theoretical framework for this study. The sample consisted of 11 HIV-infected individuals aged 18 to 25 years in southwestern Tennessee. A questionnaire was used to collect the data from the participants. The purpose of this chapter is to discuss the findings of the study, implications for nursing, and recommendations for further study.

Discussion of the Findings

This study posed the following questions:

1. What are the risk behaviors of HIV-infected young adults after diagnosis?
2. What is the self-efficacy of HIV-infected young adults?

Findings related to the first research question, What are the risk behaviors of HIV-infected young adults?” demonstrated that this population is participating in risk behavior. The majority of the sample had been diagnosed with a sexually transmitted disease (STD) since diagnosis. This finding parallels the findings of Erbelding et al. (2000), who reported a high rate of gonorrhea and chlamydia in their study sample of HIV-infected individuals. Similarly, Diamond and Buskin (2000) discovered that their sample of youths (less than 22 years of age) infected with HIV were more likely to be diagnosed with an STD than adults.

The majority of the sample reported having some type of unprotected sex (oral, anal, or vaginal) since diagnosis. This confirms the findings of DeHovitz et al. (1997), Diamond and Buskin (2000), Erbelding et al. (2000), Lansky et al. (2000), and Murphy et al. (2000). These researchers demonstrated that HIV-infected adults are participating in sexual risk behavior. The findings of this study suggest that HIV-infected young adults aged 18 to 21 years are also participating in sexual risk behavior.
While only 3 participants in this study reported having sex with another person who had HIV, 2 of these reported using condoms only some of the time, not always. This mirrors the findings of Lansky et al. (2000), who identified that HIV-infected individuals with infected partners were more likely to engage in sexual risk behavior.

The findings of the current study demonstrated that the majority of the sample did not drink alcohol. Five subjects reported occasional use of alcohol. Only 1 subject reported recreational drug use, and none of the subjects admitted to injection drug use. These results were quite surprising and did not reflect a review of the literature. The research of Murphy et al. (2000) indicated that the majority of HIV-infected adolescents participate in alcohol and drug use behaviors. Campsmith et al. (2000) found that drug use was common in their sample of HIV-infected individuals. The outcomes may have been influenced by the setting and by underreporting of the participants.

The majority of the sample (n = 9, 81.1%) had some type of body art since HIV diagnosis. However, all of the subjects reported that needles and ink were never shared with anyone else. Little information on body art was found in the review of the literature. However, the findings of
this study suggest that this population of HIV-infected young adults participated in body art behaviors, a potential source of risk behavior related to HIV.

The majority of the subjects suffered from depression since diagnosis of HIV. Two of these subjects reported guilt in addition to depression. Three patients reported severe anxiety along with their depression. This mirrors the findings of Murphy et al. (2000) suggesting that psychological distress is prevalent among HIV-infected adolescents and contributes to risk behavior.

Findings for the second research question, What is the self-efficacy of HIV-infected young adults?, suggested that the subjects had an average self-efficacy of 4.6 on a scale of 1 to 5, which is relatively high. The majority of the subjects were very sure they could refrain from all areas of HIV risk behavior. Assuming that the self-efficacy scores for this population are correct and valid, these findings do not support the presumption that high self-efficacy correlates with low risk behavior.

The self-efficacy theory suggests that the higher an individual’s belief that he or she can complete a task, the more likely that individual is to attempt the task. One would assume that the higher the self-efficacy regarding abstaining from risk behavior, the lower the risk behavior would be. However, the relationship between
self-efficacy and action is not always clear. While self-efficacy can be helpful in some situations, it can also be a hindrance in others. For example, a high self-efficacy can instill a false sense of security and mislead an individual into believing that less preparation and effort are necessary. In addition, those with a high self-efficacy can be more likely to blame failure in an action on situational factors or poor effort than on knowledge or skill ("Overview of Self-Efficacy," 2001). A high self-efficacy, therefore, does not always infer success in action.

Conclusions

The findings of this study suggest that HIV-infected young adults do participate in risk behavior, especially sexual risk behavior, despite a relatively high self-efficacy score. Although the subjects were very sure they could refrain from risk behavior, they did in fact participate in risk behavior. This finding could be attributed to overconfidence or it might even suggest that risk behavior is not affected by individual self-efficacy and, perhaps, is the result of deeper psychological issues or developmental level.
Limitations

This study was subject to limitations. The small sample size limits generalization of the results. No generalization can be made to other populations. The participants were volunteers, and perhaps do not represent the entire HIV-infected young adult population. In addition, the participants completed the questionnaire in a unique setting, an HIV support group, which casts some degree of doubt on the honesty of their answers. Perhaps the participants felt pressure to portray their behavior in a safer light in the setting of an HIV support group. Despite a reassurance of confidentiality and anonymity, the participants might still have been acting in a desire to please, or a desire to relate things as they should be, not how they really are. Furthermore, the nature of a self-report study calls into question the validity of the results as these data are subject to such variables as poor recall, misunderstanding of the questions, and honesty of answers.

Implications for Nursing

Despite its limitations, this study still holds implications for the field of nursing in practice, education, research, and theory. In the area of nursing practice, the findings of the study suggest that HIV-
infected young adults are still in need of education regarding risk behavior. The growing HIV population as well as the emerging trend of tattooing and body piercing among young adults makes it imperative that nursing care providers be aware of and sensitive to their needs. Those caring for the HIV-infected must provide this population with the necessary tools to prevent the spread of HIV, such as education, emotional support, and respect.

In the area of nursing education, this study is particularly pertinent. The findings of this study suggest that education must be provided to HIV-infected young adults regarding prevention of the transmission of HIV to others and prevention of secondary infection through risk behavior in those infected with HIV. Furthermore, this education must be presented in a nonjudgmental manner that suggests respect and consideration for the characteristics of this population. Nurses and advanced practice nurses are in an ideal position to provide this respectful and culturally sensitive education.

This study also has implications for nursing research. Additional research is necessary in this population in order to further define the risk behavior of HIV-infected individuals, especially young adults. Larger scale and longitudinal studies are needed to delve deeper into the behavior and education needs of this population.
Perhaps a better method for data collection would be the Internet, which might ensure a more diverse population, a higher degree of confidentiality, and thus a higher degree of honesty. In addition, education and preventive interventions should be tested and implemented. Nursing professionals are in an ideal position to implement further research in this population.

This study utilized Bandura’s Self-Efficacy Theory as its nursing theoretical framework. The study population demonstrated that despite high self-efficacy scores, the subjects still participated in risk behavior. Further research is indicated in this area in order to generalize these results to the entire HIV-infected young adult population.

Recommendations for Further Study

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

1. A study utilizing a larger sample exploring the risk behavior and self-efficacy of HIV-infected young adults.

2. A study focusing on the knowledge of risk behavior in HIV-infected young adults.

3. A study exploring ways to decrease risk behavior in HIV-infected young adults.
4. A study comparing the behavior of HIV-infected young adults to young adults not infected with HIV.

Summary

This study sought to describe the sexual risk behavior, drug and alcohol use, body art behaviors, and self-efficacy of young adults infected with HIV. The findings of this study echo those of previous studies and suggest that HIV-infected young adults continue to engage in risk behavior. Furthermore, this study suggests that risk behavior may not be a result of low self-efficacy. Regardless, more research is necessary to identify barriers to safer behavior in order to stop the spread of HIV.
REFERENCES
References


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APPENDIX A

RISK BEHAVIOR QUESTIONNAIRE
Risk Behavior Questionnaire

1. I am a
   □ a. man who has sex only with women (heterosexual male).
   □ b. man who has sex only with other men (homosexual male).
   □ c. man who has sex with both men and women (bisexual male).
   □ d. woman who has sex only with men (heterosexual female).
   □ e. woman who has sex only with other women (homosexual female).
   □ f. woman who has sex with both men and women (bisexual female).

2. My age is ____________.

3. The highest grade I completed in school was ____________.

4. I classify myself as
   □ a. Caucasian (White)
   □ b. African American (Black)
   □ c. Hispanic (Latino/Latina)
   □ d. Other. Please specify:__________________________

5. How many sexual partners have you had since finding out you have HIV?
   □ a. 1-4
   □ b. 5-10
   □ c. 11-20
   □ d. 21-50
   □ e. 51 or more

6. Since finding out you have HIV, have you had sex with anyone that you did not know ahead of time (casual/anonymous sex)?
   □ a. Yes
   □ b. No

7. Since finding out you have HIV, how often do you drink alcohol?
   □ a. I never drink alcohol.
   □ b. I sometimes drink alcohol.
   □ c. I frequently drink alcohol.
8. Since finding out you have HIV, how often do you use recreational drugs (cocaine, speed, crack, pot, poppers, etc.)?
   - a. I have never used recreational drugs.
   - b. I sometimes use one or more of these drugs.
   - c. I frequently use one or more of these drugs.

9. Since finding out you have HIV, have you injected nonprescription drugs (recreational drugs like heroin, cocaine, speed, etc.) or used injectable steroids?
   - a. I have never injected recreational drugs or steroids.
   - b. I have used these drugs and or steroids, but I never shared needles with others.
   - c. I shared needles, and I rinsed my needles with bleach every time.
   - d. I shared needles, and I did NOT rinse my needles with bleach every time.

10. Since finding out you have HIV, have you had any tattoos or body piercings? Answer all that apply:
    - a. No, I do not have any tattoos or body piercings.
    - b. I have one or more tattoos, and needles and ink were never shared.
    - c. I have one or more body piercings, and nothing was shared with others.
    - d. I have one or more tattoos, and needles and ink were shared at least once.
    - e. I have one or more body piercings, and piercing equipment was shared at least once.

11. Since finding out you have HIV, have you had any of the following sexually transmitted diseases (STDs)? Answer as many as apply.
    - a. Herpes
    - b. Genital warts/anal warts/human papilloma virus (HPV)
    - c. Hepatitis (A, B, or C)
    - d. Chlamydia
    - e. Gonorrhea
    - f. Syphilis
    - g. Trichomonas (Trich)

12. Since finding out you have HIV, have you had (answer as many as apply):
    - a. anal intercourse without protection.
    - b. oral sex without protection.
    - c. vaginal sex without protection.
    - d. I have not been sexually active since I found out I have HIV.
13. Since finding out you have HIV, how often have you practiced safer/protected sex (used a condom or dental dam)?
   a. Every time I have sex with every partner.
   b. With every partner, but not always.
   c. With some partners I do, and with other partners I do not.
   d. I am sexually active, but I never practice safer sex.
   e. I do not have to practice safer sex since I already have HIV.
   f. I am not sexually active.

14. Since finding out you have HIV, have you suffered from (answer all that apply):
   a. Depression
   b. Severe guilt
   c. Severe anxiety
   d. None of these

15. Since finding out you have HIV, have you had sex with another person who has HIV or another STD?
   a. No, not that I know of.
   b. Yes, I had sex with a person diagnosed with HIV.
   c. Yes, I had sex with a person diagnosed with an STD other than HIV.

16. Since finding out you have HIV, if you’ve had sex with another person who had HIV or another STD, did you
   a. Practice safer sex every time
   b. Practice safer sex some of the time but not always.
   c. Never practice safer sex.
   d. I never had sex with a person I knew had HIV or another STD.

17. Since finding out that you had HIV, have you told all of your partners so that they can get tested and treated as well? Answer all that apply.
   a. I told every partner.
   b. I told some partners, but not all of them.
   c. I did not tell any of them.
18. How sure are you that you could

a. Talk about safe sex with a sexual partner?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure

b. Buy condoms in a drug store?
    
   1  2  3  4  5
   Not sure  Very
   at all    sure

c. Refuse to have sex with someone you didn’t know very well?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure

d. Use a condom correctly if your partner wanted to?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure

e. Refuse to shoot up drugs if your friends asked you to shoot up with them?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure

f. Convince a partner that he or she should use a condom?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure

g. Prevent a partner from having anal sex with you?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure

h. Ask a partner about his or her sexual partners?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure

i. Refuse to use a needle that had already been used by a friend?
   
   1  2  3  4  5
   Not sure  Very
   at all    sure
APPENDIX B

APPROVAL OF MISSISSIPPI UNIVERSITY FOR WOMEN’S COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION
March 30, 2001

Ms. Jennifer D. Dewey
P. O. Box W-910
Campus

Dear Ms. Dewey:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research as submitted. The Committee requires that the results of any questionnaire or survey be kept under lock and key to ensure confidentiality and that they be kept for a sufficient length of time to protect both participant and researcher.

I wish you much success in your research.

Sincerely,

Vagn K. Hansen, Ph.D.
Vice President
for Academic Affairs

VH:wr

cc: Mr. Jim Davidson
    Dr. Patsy Smyth
    Graduate Nursing Program
APPENDIX C

PERMISSION TO CONDUCT STUDY
Sheila Tankersly, Executive Director
Loving Arms
1233 Peabody Avenue
Memphis, TN 38104

Dear Ms. Tankersly,

As a graduate student of nursing at Mississippi University for Women, I am required to conduct a research study in partial fulfillment of the Master of Science degree in Nursing. I plan to research the risk behaviors of HIV-infected young adults after diagnosis. The purpose of this study is to describe the risk-taking behaviors of young adults infected with HIV. I am requesting your assistance and written permission to utilize members of your support groups in my research study.

Participation in this study will be strictly voluntary, and the subjects will give written informed consent if they wish to participate. The participants are free to withdraw from the study any time before data analysis. The participants will fill out a survey with questions regarding their risk-taking behaviors. All information collected will be kept strictly confidential, and the patients will not be asked to sign their names to the questionnaires.

Please find enclosed a copy of this letter as well as the drafted consent form for your records. Please sign the original letter and return to me in the enclosed envelope.

Sincerely,

Jennifer Dewey

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Permission Granted:_______         Permission Denied:_______
Signature:____________________    Date:__________________
APPENDIX D

INFORMED CONSENT
Informed Consent

Background and Purpose of Study

You are being asked to participate in a research study called Risk Behavior of HIV-Infected Young Adults. This study is being conducted by Jennifer Dewey, RN, BSN, in partial completion of her master’s thesis and nurse practitioner degree.

The purpose of the study is to learn more about the risk behaviors of individuals who are infected with HIV. By learning more, we can discover better ways to educate young people about risk behaviors. Information will be collected at several support groups for individuals with HIV.

Study Procedures

To be in this study, you will fill out a questionnaire only once. The questionnaire will contain questions about your behavior and beliefs. Some questions will be about very personal things, such as sex and drug use, and it is important that you answer the questions as honestly as possible. The questionnaire will take about 30 minutes. You will not be asked to write your name on the questionnaire.

Risks and Benefits

There are no foreseeable risks or discomforts to you for taking part in this research study. There are no direct benefits of being in this study; however, the information collected may help identify ways to understand and educate other individuals of your age with HIV in the future.
Privacy and Confidentiality

All records of you being in this study will be kept confidential. All information will be reported as group data. Your privacy will be protected by using number codes instead of your name on your records. Only Jennifer Dewey will know this code. The code will be stored in a locked file cabinet.

Payment and Participation

There is no cost for participating in the study, and you will not be paid to be a part of this study.

Statement of Understanding

I have read the material above, and I willingly agree to take part in this study. If I decide not to be in the study, I will not be penalized. I have been able to talk as much as I want to Jennifer Dewey, RN, BSN, who is in charge of this study about the reasons for this study and its risks. I know I can withdraw from the study at any time up to data analysis. I know there will be no cost to me to participate in the study and that I will not be paid to be in the study. I know my survey will be kept confidential and will not be given to anyone and that information collected from me will not have my name or any identifying information on it. I know that if I have more questions about this study in the future I can call Jennifer Dewey, RN, BSN, at (901) 683-7045. My signature below indicates that I agree to participate in this study.

______________________________ Date
Patient

______________________________ Date
Primary Investigator

______________________________ Date
Witness