HIV RISK REDUCTION AMONG YOUNG ADULT CHRONIC PSYCHIATRIC PATIENTS

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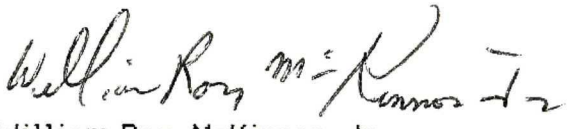

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ABSTRACT

Title of Dissertation: HIV RISK REDUCTION AMONG YOUNG ADULT CHRONIC PSYCHIATRIC PATIENTS

William R. McKinnon, Jr., Doctor of Philosophy, 1990

Dissertation directed by: Andrew S. Baum, Ph.D., Department of Medical Psychology

This study investigated the manipulation of fear as part of a health message developed to reduce the risk of HIV infection among young adult chronic psychiatric patients. Subjects in the present study were provided access to tokens to obtain condoms from condom vending machines that had been installed on the units where they live. A total of 73 subjects participated in this study.

Token use data were collected over a two week baseline period. Following the two week baseline, a pretest was administered which included self-reports of sexual activity over the two week baseline period, pre-test measures of knowledge regarding AIDS, pretest measures of various health belief variables including the perceived risk/ vulnerability of HIV infection, perceived efficacy of using condoms to reduce risk of HIV infection, perceived barriers to adopting HIV risk reducing behavior, perceptions concerning social network characteristics supportive of adoption of HIV risk reduction, and general health motivation. General fear of AIDS and general fear of illness were also assessed.

The interventions were then administered and followed by post-test measures of the same measures taken during the pre-test. Two weeks later,

a follow-up was conducted. Tokens for condoms continued to be distributed during the two weeks after the intervention until the follow-up.

The major hypothesis of this study was that high fear would more be more effective in modifying behavior and health beliefs. Overall, the results of the study failed to demonstrate that high fear arousal was more effective than low fear arousal in producing behavioral changes as measured by token use over the four week period or changes in health beliefs regarding AIDS. Results, however, suggest that among this sample, low fear arousal may be more effective than high fear arousal in increasing knowledge about the threat of HIV infection and subsequently reducing general fear of AIDS. Some possible explanations for these findings are explored.

HIV RISK REDUCTION
AMONG
YOUNG ADULT CHRONIC PSYCHIATRIC PATIENTS

by

William Roy McKinnon, Jr.

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Introduction

Acquired Immunodeficiency Syndrome (AIDS) was first recognized as a new disease in 1981, when Kaposi's Sarcoma, now known as an early secondary manifestation of AIDS, was noted in a cohort of gay men in California. The human immunodeficiency virus (HIV) was discovered as the cause of AIDS and the HIV antibody test was subsequently licensed in 1985. Even though HIV-antibodies were nearly universal in AIDS patients, the antibodies serve no apparent protective function and have lead to the assumption that once infected a person is capable of transmitting the virus for the rest of their lives. Though it may take years, eventually most if not all HIV infected persons will die of AIDS related complications. Currently, about 70,000 people have died from the disease and there are estimates that 1.5 million people in the United States may already be infected (Center for Disease Control,1990; Center for Disease Control,1989; Confronting AIDS Directions for Public Health, Health Care, and Research,1986). Although some temporizing drug therapy is now available, and much research is being done on potential vaccines, it will probably be many years before definitive treatment is available.

Epidemiological evidence pointed to three modes of diseases spread: sexual contact, bloodborne transmission, especially through transfusions and the sharing of needles by intravenous drug users (IVDA), and transplacental spread. The most dangerous types of sexual contact are anal and vaginal intercourse. Aside from monogamy or abstinence, the use of condoms is the best way we have of reducing risk of HIV infection (Koop,1987).

Since specific behaviors are linked with the disease transmission, there have been major efforts to identify and educate specific high risk groups about means of protection. Sexual partners of intravenous drug abusers (IVDA) are now the largest group who have contacted AIDS through heterosexual spread. The general public has thus been more aggressively targeted since it became apparent that HIV infection is not limited to homosexual behaviors. Prisons have identified an increasing number of AIDS cases due to history of IVDA and sexual practices among prisoners. However, other groups, currently undertargetted in AIDS educations programs, may be at increased risk as well. There is growing concern for individuals representing special populations, such as the homeless and mentally handicapped, who because of psychological, economic, and social factors may be at increased risk for HIV infection.

A hard-to-reach group only recently considered at risk for HIV infection are young adult chronic psychiatric patients. The purpose of the current study was to investigate knowledge, attitudes, and behavior about HIV risk reduction among this group. An intervention was designed to provide education about HIV infection and reduce the risk of HIV among this group. Specifically, an HIV health communication was developed manipulating the level of fear assess the usefulness of this approach among the young adult chronic psychiatric patient.

The Young Adult Chronic Psychiatric Patient

Education to reduce risk of HIV infection among the severely mentally ill is often informal, making it difficult to determine exactly what is communicated, known, or understood about AIDS by this group. Institutional issues concerning HIV antibody screening of psychiatric patients and the safety of staff who work with the psychiatrically impaired

have received more attention than the evaluation of the effects of the AIDS epidemic among the severely mentally ill (Morgan, Amarasinghe, Morgan, & Reddy, 1988; Binder, 1987; Polan, Hellerstein, & Amchin, 1985). Baer, Dwyer, & Lewitter-Koehler (1988) suggested that psychiatric patients deserve special attention since they may be more difficult to reach because information-processing deficits may result in their having less available information and because they may be at greater risk due to impaired judgment and behavioral disturbances. Baer and colleagues examined AIDS knowledge in psychiatric inpatients on three locked acute inpatient units, including one that selectively admitted patients with AIDS and ARC. It was hypothesized that inpatients on the AIDS-ARC units would be better informed than their peers on other units, but no differences were found among groups on an AIDS knowledge questionnaire. The results suggested that the acutely emotionally disturbed person may be as concerned as other groups about HIV infection and may desire to know more about AIDS in order to better protect themselves. The authors noted several limitations of their study including the non-standardized manner in which the questionnaires were administered, lack of appropriate control groups, and limited scope of the knowledge questionnaire. Subjects were also predominantly white and a substantial number had college backgrounds, thus making it difficult to generalize to that segment of the psychiatrically impaired which is often less educated and black. Furthermore, the study was conducted in San Francisco, an area of the county which has been responsible for introducing innovative AIDS educational programs. The study also focused on an acutely disturbed group within an inpatient admission setting and ignored the debilitating implications often related to psychotic and other major disorders which may lead to chronic mental disability. Indeed, an

understanding of some of the factors associated with chronic mental illness may make it apparent that the chronically mentally ill and especially the young chronic adult may even be at greater risk of HIV infection than the acutely impaired.

The chronically mentally ill population includes persons whose clinical conditions vary widely throughout the individuals life. Since the deinstitutionalization of patients from state and federal psychiatric institutions, it has been difficult to quantify the numbers and characteristics of the chronically mentally ill. Goldman and Manderscheid (1987) conceptualize this population as consisting of individuals who suffer from emotional disorders that interfere with their functional capacities in relation to such primary aspects of daily life as self-care, interpersonal relationships, and work or schooling, and that may often necessitate prolonged mental health care. More pragmatic definitions used to estimate the size of this population rely on national and state counts of persons receiving public assistance because of mental illness. Based on 1977 data of individuals who have received treatment within the United States, Goldman et al. (1987) suggested that the number of chronic mental patients as of 1987 was approximately 1.7 million. Of these people, about 700,000 were thought to be living within the community and to comprise a large majority of readmissions to State and county mental hospitals for brief hospitalizations. In general, the increase in numbers of chronic mental patients, the instability of their social networks, the complexities associated to chronic mental illness as well the extreme diversity in vocational skills are among a few of the things which makes it difficult to determine a basic demographic profile of the chronic emotionally disabled patient.

The complexity of describing the chronically mentally ill has resulted in the identification of subgroups of patients based on age. One such group consists of young chronic adult patients (Bachrach,1982). The young adult chronic is often described as being between the age of 18 and 40 and having a wide variety of psychiatric diagnoses and multiple disabilities. Individuals in this group have been identified as more likely to be transient and difficult to treat (Bachrach,1982,1988; Pepper, Kirshner, Ryglewicz,1981). Current projections suggest an increase in the numbers of young adult chronic patients (Taube, Thompson, Rosenstein, Rosen, Goldman, 1983). By far the most distinguishing characteristic of this group is the heterogeneity within the population with respect to diagnosis, functional level, treatment histories, and treatment needs.

Caton (1981) followed 119 young adult chronic patients living in the community in Manhattan between 1977 and 1979. Sixty-three percent were black, 20% were Hispanic, while the remainder were described as having migrated to New York from the Carribean. The mean age was 34. Forty-two percent lived with their families, 24% lived in single-room occupancy hotels, and 28% lived alone in their own apartments. Over a half of the participants could not identify the availability of someone to turn to in case of need. Though 89% had at one time been employed only 27% were employed during the study. Pepper et al. (1981) in a similar study also found that only 24% of the sample were self-supporting, 57% were receiving public assistance, and the remainder were supported by their families. Furthermore, approximately 24% of the sample had been involved in some type of criminal activity. Schwartz and Goldfinger (1981) found that 90% of the young chronics sampled were unemployed. In all of these studies schizophrenia and borderline personality disorders were the most common

diagnosis. The rate of criminal activity ranged from 24% to 31% and the rates of poly-drug use and alcoholism were also high. Taken together, the lack of social support, inadequate financial support, and the resulting substance abuse and criminal activity further complicate the stress associated with a chronic disabling mental condition.

In an attempt to delineate the clinical characteristics of this group, Sheets, Prevost, & Reihman (1982) subdivided it into three sub-groups. One is composed of individuals who had been in institutions for most of their lives. They are described as passive and exhibiting behavior consistent with long-term institutionalization. Another group is described as the high energy, high demand group. These patients often remain ambivalent about their need for mental health services and often find themselves dealing inadequately with crisis after crisis. Sheets et al. (1982) suggest that these patients have few sexual inhibitions, and meet other patients on inpatient units, fall in love, and bear children who are usually raised in foster homes. Their physical mobility contributes to unstable financial situations resulting in reliance on public assistance. The third group is referred to as the high functioning, high aspiration group. This group, though seriously disabled, seem to retain some sense of hope. They have not yet given up and tend to actively seek information and help. They are often more educated than the other two groups and physically look more like members of the general society rather than the stereotypes often associated with mental patients.

The young chronic often views his/her difficulty with living as a consequence of social failure rather than a result of mental illness. Though they may often insist on the availability of services, the young adult chronic frequently does not comply with treatment and utilizes mental health

services on an erratic and inconsistent basis (Pepper et al. 1981). What is apparent among this diverse group is that they are faced with meeting many of the same developmental challenges that persons without serious emotional problems must confront (Lamb,1982). The young adult chronic continues to struggle for independence, is attempting to choose and succeed at a vocation, and wants to establish meaningful interpersonal relationships. Because his/her needs are often so great, service planning for this group has been very difficult to plan.

These descriptions of the young chronic adult mental patient indicate a lifestyle characterized by social disruption and suggest that the young chronic is vulnerable to stress as well as illness. Young chronic adults may be less likely to know how to protect themselves from AIDS or where to go to obtain information on HIV risk reduction. Further evidence that the young chronic may be at increased risk of HIV infection comes from research on the health of the chronically mentally ill. Liberman & Coburn (1986) suggest that clinical health and mental health practitioners often ignore the relationships between physical and mental health and that systemic barriers make it difficult for the chronically mentally ill to obtain adequate health care. The chronic patient often has insufficient income to purchase private health insurance and may likewise be overwhelmed by the complex eligibility requirements for public financial assistance. Psychiatrists often do not perform physical examinations of emotionally disturbed patients and physicians often feel they do not have sufficient understanding of psychiatric problems to attend to these patients. All of these obstacles reduce the probability that these patients will receive adequate information regarding their current health as well as measures that would likely improve their health status.

The mentally ill frequently have health problems that either are not diagnosed or are under-diagnosed by psychiatrists (Koranyi, 1979; Hall, Gardner, Popkin, LeCann, & Silickeny, 1981). Part of the difficulty for the psychiatrist is that many physical illnesses have components which mimic functional psychosis (Karasu, Waltzman, Lindenmeyer, & Buckley, 1980). It has become increasingly clear that dementia and severe psychopathology that mimic functional psychosis may often precede the diagnosis of frank AIDS (Navia, Jordan, & Price, 1986). For the young chronic with a history of emotional disturbance, the likelihood of neuropsychiatric symptoms associated with HIV infection being overlooked seems rather great.

Linked to the barriers associated with the delivery of health services is some evidence that the chronically mentally ill may be more willing to accept inadequate health care (Liberman & Coburn, 1986). Research on internal-external (I-E) locus of control expectancies and health behaviors provides some indirect evidence suggesting that chronically mentally ill persons may no longer believe that their actions can substantially affect the status of their health and have resigned themselves to accepting fate. According to Strickland (1978), life contentment is associated with internality while pathological disturbance is more related to externality. Several studies have found that schizophrenia and other chronically disabling psychiatric conditions are associated with an external locus of control (Lottman & DeWolfe, 1972; Cash & Stack. 1973). Consequently, the chronically mentally ill may be more likely to perceive that things happening to them are due to chance, luck or otherwise beyond their personal control and understanding rather than dependent on their own behavior. It may be that the chronically mentally ill patient may be less responsive to health messages, less knowledgeable about health conditions

and less likely to attempt to improve their health status. Externality in the chronically disabled may reflect a more general characteristic of helplessness or hopelessness associated with the debilitating consequences of chronic mental illness. Evidence from research in other patient populations indicates that a sense of hopelessness and pessimism often contributes to whether health recommendations are followed (Janis, 1984). These general factors related to locus of control, helplessness and psychopathology may interact in some manner to establish patterns and preferences for involvement and for information concerning health care among the chronically mentally ill.

Research on sexual knowledge, attitudes, and sexual behaviors among the psychiatrically impaired is largely limited to descriptive studies of sexual functioning (Abernethy, 1974; Grunebach, Abernethy, Rofman & Weiss, 1971). Wasow (1980) suggests that there are few resources available to mental health professionals to deal with sexual concerns and needs of the mentally ill. Some mental health professionals continue to argue that sex education might result in decompensation while others express concerns that such programs might encourage inappropriate behavior. Research on sexual functioning and schizophrenia range from studies on the sexual side-effects of neuroleptics to sexual themes in schizophrenic delusions (Nininger, 1978; Donlon, 1976). Very few studies have addressed issues concerning the frequency of different sexual behaviors among this population and little information is available reflecting prevalence of sexually transmitted diseases that could be used to evaluate the risk of HIV infection among the severely mentally ill.

The clinical as well as demographic characteristics of the young chronic adult patient along with the barriers associated with the delivery of

health services are factors the difficulty the young chronic may have seeking information needed to reduce their risk of HIV infection. Even if the information is provided, there are reasons to suspect that this group of may have tremendous difficulty complying with recommendations concerning HIV risk reduction. Any strategy designed for this group will have to consider these obstacles in order to increase the likelihood of their adopting behaviors that will reduce their chances of HIV infection. Before specifically addressing how to intervene in this population, studies documenting the extent of behavioral changes in response to the AIDS epidemic will be reviewed as will studies of factors associated with the changes in sexual practices. Though these studies may not be directly applicable to HIV risk reduction among the young chronic adult, the results draw attention to complex issues that must be considered in any group when attempting to modify sexual behavior in the interest of promoting health.

Behavioral Risk Reduction

Studies investigating changes in sexual practices among homosexual and bisexual men provide a framework for the development of any prevention program designed to reduce the risk of HIV infection. HIV risk reduction has focused on measuring numbers of sexual partners, frequency of anal intercourse, and the use of condoms. Becker and Joseph (1988) and Stall, Coates, and Hoff (1988) review findings from the AIDS Behavioral Research Project, the San Francisco Men's Health Study, and the Multicenter Aids Cohort Study and note that many gay men have significantly reduced the frequency of unprotected anal intercourse. Winkelstein, et al. (1987) investigated sexual activity among homosexual and bisexual men. Participants were recruited during January 1984 to June 1986 using multistage stratified cluster sampling with a participation rate of 59%.

Receptive anal intercourse among seronegative individuals declined as did insertive anal intercourse among seropositive participants. Upon entry into the study, 14% of the seronegative individuals reported participating in receptive anal intercourse. As of June 1986 only 5.8% reported engaging in receptive anal intercourse. Condom use was not reported and only group measures of HIV seroprevalence data were available. McKusick, Horstman, & Coates (1985) observed similar changes in patterns of sexual activity among men living in San Francisco. The average number of sexual partners decreased by 13.5%, there was a 28.6% decline in anonymous sexual contacts, 50% decrease in oral-anal contact, and a 60% reduction in the number of visits to sex clubs and bathhouses. Though McKusick, et al. (1985) found that men in non-monogamous relationships substantially reduced high risk sexual activity, there were no corresponding increases in safer sex practices.

Studies in New York City also documented changes in sexual patterns among self-identified gay men. Martin (1987) reported a 75% decrease in receptive anal intercourse as well as a 17% increase in the use of condoms by the respondent's partner during receptive anal intercourse. Emmons, Joseph, Kessler, Wortman, Montgomery, & Ostrow (1986) in a cross-sectional analysis of behavioral information from 909 homosexual and bisexual men living in Chicago, found that 76.5% of the participants attempted to reduce the number of sexual partners and 20.2% of the 486 men who continued to engage in receptive anal intercourse asked their partners to use a condom or withdraw before ejaculation. In an earlier study, Martin (1986) identifies problems associated with studies investigating changes in sexual patterns among homosexual men. Most studies are concerned with individual sexual acts generally measuring numbers of sexual partners,

frequency of anal intercourse, the use of condoms, celibacy, or eliminating extra-domestic activity. Martin (1986) suggested focusing on individual sex acts leads to inadequate descriptions of individual patterns of change. He categorized participants on the basis of becoming monogamous, eliminating extra-domestic activity, and restricting sexual acts to those of lower risk. Of the 745 men interviewed, only 4% had changed all three aspects of their sexual behavior, while 40% eliminated at least one of these three aspects of sexual behavior. Forty-nine percent of the participants did not change and 8.3% actually increased their risk. Though behavioral changes have occurred, many in the gay community who have received HIV risk reduction information continue to place themselves at risk. Coates et al. (1988) note that rather than continuing to describe changes in patterns of sexual activity among homosexual/bisexual men, efforts should be directed at understanding differences between gay men who adopt risk reducing behavior and those who continue unsafe sexual practices.

Other groups which have been investigated with regard to reduction of risk for HIV infection include intravenous drug users (IVDA), sexual partners of IVDA, hemophiliacs, and adolescents and young adults. Friedman, DesJarlais, & Sotheran, (1986) interviewed 59 patients in a methadone clinic in Manahattan. Overall 54% of the IVDA reported some change in sharing drug equipment either by increased use of clean needles and/or cleaning needles and reducing needle sharing. IVDA who were not in any type of drug abuse program were interviewed on the streets by ex-addicts (Kleinman, Friedman, Mauge, Goldsmith, DesJarlais, Hopkins 1987). Sixty-one percent of the participants reported an increased demand for clean needles and changes in sexual practices to reduce the risk of HIV infection. DesJarlais & Friedman (1988) suggested that the validity of the reports of

changes in behavior in New York addicts were supported by studies documenting an increase in demand for sterile drug equipment. Despite their level of knowledge concerning HIV transmission, IVDA continue to engage in needle sharing (Flynn, Jain, Harper, Bailey, Anderson, & Acuna, 1987). The focus of intervention for IVDA has been geared to sharing needles and only recently on changing sexual practices. DesJarlais & Friedman (1988) indicate that in New York City, almost 90% of the heterosexual transmission of AIDS involve transmission from an IVDA to heterosexual partners who do not inject drugs. Though these studies reported changes in behavior related to the injection of drugs, the same studies report far fewer changes in sexual behavior among IVDA.

The heterosexual transmission of HIV infection is as efficient as homosexual transmission particularly for those women who engage in unsafe sexual practices with IVDA, bisexual men, hemophiliac men already infected, or any other HIV infected individual (Padian, Marquis, Francis, Anderson, Rutherford, O'Malley, & Winkelstein, 1987). However, few studies have examined the extent to which HIV risk reduction has occurred among these groups. Frequent condom use has been linked to decreased incidence of HIV infection in prostitutes in Zaire, but there was no attempt to establish whether increased condom use was related to attempts to reduce HIV infection (Mann et al.1986). A few studies addressed changes in sexual behavior among hemophiliacs and suggest that AIDS prevention programs for hemophiliacs may be most effective if integrated within existing comprehensive care programs for the hemophiliac (Mason, Olson, & Parish, 1988).

There also has been some attempt to focus on behavioral changes in response to the AIDS epidemic in adolescent populations. The rates of

sexually transmitted diseases in this group are often higher than that seen in other age groups (Bell & Holmes, 1984). Information concerning high risk behaviors in this group may limit the spread of HIV infection among adolescents. A recent report by the CDC assessed behaviors of students in grades 9-12 in six major metropolitan areas. Twenty-nine percent to seventy-six percent reported having sexual intercourse at least once, while 15.1% to 42.6% reported having had three or more sex partners. Three percent to six percent reported ever injecting drugs (CDC,1988). Simkins & Eberhage (1984) surveyed university students who indicated little concern about AIDS and reported no changes in behavior as a result of AIDS. Kegeles, Adler, & Irwin (1988) examined changes in condom use over a one-year period among 234 females and 91 males living in San Francisco who were self-identified as sexually active. The authors noted that while information concerning condoms as a means of reducing risk of HIV infection had substantially increased in San Francisco and that much of the information has been specifically directed to adolescents, adolescents continued to report increases in multiple sexual partners and no increases in condom use.

The results of educational campaigns have had some influence on reducing risk of HIV infection. Changes in high risk behavior provide important information concerning the continuing spread of AIDS. As with smoking campaigns, some people respond to repeated long-term health educational efforts while others may require something more to effectively modify their behavior. Within the groups identified to be at risk for HIV infection, it will useful to identify factors associated with behavioral change as well as those factors related to the lack of change. The question of generalizing remains problematic. With respect to reducing the risk of HIV infection, the underlying correlates and predictors of behavioral change

may vary from group to group. It is already apparent that social norms as well as demographic correlates within the white gay community differ dramatically from those in the IVDA subculture and from those in minority communities. Furthermore, there may be factors related to why individuals choose to cooperate in AIDS research that may be significantly related to any observed behavioral changes. Any effort to change behavior and reduce the risk of HIV infection will necessarily have to consider the unique characteristics of the targeted population.

Predictors and Correlates of HIV Risk Reduction

A limitation of studies examining HIV risk reduction has been the difficulty establishing a theoretical model to predict and explain factors influencing the adoption of health promoting behaviors (Nelkin, 1987). The goal of HIV risk reduction is to persuade people to adopt safer sexual practices and not share IV drug equipment. Compliance which generally refers to the adoption of recommended health behaviors by health professionals is one of the most investigated area of health behavior (in Gatchel & Baum, 1983). Leventhal & Cameron (1987) reviewed the contributions and deficiencies of five major theoretical approaches to compliance with health recommendations. The models examined included the biomedical model, operant behavior and social learning theories, health belief model, a communications approach, and a self-regulative systems approach. Though each of these approaches contribute to the adoption of health promoting behaviors, none alone has been demonstrated to be responsible for changing behavior. Research on AIDS risk reduction has implicitly relied upon theories of compliance; however, few studies have explicitly examined HIV risk reduction within a defined model of compliance.

The biomedical approach, the communications approach and the health belief model, are widely used theoretical approaches investigating predictors and behavioral correlates of HIV risk reduction. There has also been increasing interest in operant/social learning models of compliance. The lack of association between various factors thought to be related to changes in sexual behavior may be due to the inherent limitations of the models in which these factors have been examined. There is also confusion regarding the evaluation of the goals of HIV risk reduction programs. HIV risk reduction has largely been confined to mass media educational programs. These efforts have contributed to changes in the level of knowledge, particularly among white homosexual men and the general public. Evaluation of attitudes concerning HIV risk reduction indicate that individuals are adopting different attitudes about AIDS and HIV risk reduction. Although behavioral research indicates that knowledge, attitudes, and beliefs are often related in some manner to behavioral changes, few studies have been able to reliably demonstrate the predictive utility of these factors as associated with behavioral change.

The biomedical model of diseases has focused on demographic and personality characteristics of non-compliers through identification of groups at risk and attempts to correct the dispositional flaws. When these factors are used in combination, rather than as isolated variables, some success in predicting noncompliance has been achieved (Korsch, Fine, and Negrete,1978). Overall, however, few studies have found evidence supporting the basic premises underlying the biomedical model (Haynes, Sackett, Taylor, 1976). Despite the limitations of this approach, Leventhal et al. (1987) indicate research in this area has resulted in the identification of non-dispositional factors relevant to compliance. Characteristics of the

disease, including the complexity of treatment, medical costs, and time spent away from work all exert an influence on compliance. The model ignores the differences in psychological processes associated with appraisal and coping with acute and chronic disease and prevention and adherence to treatment are not independently examined nor are institutional influences on compliance, or skills needed to effectively comply considered.

The initial phase of research on AIDS risk reduction has been focused within a biomedical model of disease. There has been much success in identifying groups of individuals who are at risk for HIV infection. Unprotected sexual practices and/or sharing drug equipment have been established as the most efficient modes of HIV transmission. This information has been useful in surveying the spread of AIDS and establishing the methods of transmission of the disease as well as providing behavioral alternatives that are helpful in protecting against HIV infection. Focusing on demographics such as ethnicity, socio-economic status, educational level may assist in determining groups of individuals who are at higher risk for HIV infection that may require specialized interventions (Stall et al. 1988).

Though a biomedical approach to HIV risk reduction has proven to be of immense value, the reliance on this model during the initial stages of the AIDS epidemic illustrates the difficulty translating biomedical information into language that can be easily assimilated by the general public. The early terminology used to identify risk of HIV infection may have led to misconceptions concerning HIV transmission and interfered with an accurate understanding of HIV risk reduction (Siegel & Gibson,1988). The intense focus on risk groups as well as anal intercourse as a principle mode of transmission may have inadvertently contributed to a low sense of vulnerability among heterosexual populations. Preliminary evidence from

CDC on knowledge about AIDS in the general public indicates that 91% of the population surveyed believed that they were at little or no risk for HIV infection (Dawson, Cynamon, & Fitti,1988). The emphasis on multiple sexual partners as a risk factor may have lead some people to reduce their number of partners while continuing to engage in unprotected sexual behavior. Bauman & Siegel (1987) examined subjective risk assessment of 160 gay asymptomatic men and compared their subjective assessments with objective measures of degree of risk. The results indicated that many individuals underestimated their risk and that some of the subjects may have adopted the belief that engaging in high risk sexual practices with fewer partners could be viewed as a safe compromise.

Obviously without prescriptive information, individuals could not adopt behaviors to reduce risk of HIV exposure. Mass media AIDS educational campaigns and grass-root educational efforts attempted to increase knowledge about AIDS, change attitudes concerning high risk behavior and promote adoption of HIV risk reducing behaviors. An implicit assumption behind much of the AIDS educational efforts has been the expectation that changing attitudes and beliefs will alter behavior, an expectation that amounts to a conceptual leap that may not be warranted.

The educational efforts within the public sector as well as in the gay community could be broadly characterized as emerging from a communications perspective. Leventhal, Zimmerman, & Gutmann (1984) identified six components of the communication perspective which maximize the likelihood of compliance. These include: generation of the message which involves information on the specific goals and ways of achieving these goals; reception of the message by the targeted group; message comprehension; message retention; acceptance of the message; and

compliant action. A drawback of the communication model is the assumption that changes in knowledge and attitudes result in changes in behavior. As Leventhal et al. (1988) indicate, people must be motivated to act. When attempting to change behavioral patterns, the communication approach neglects the influence of an individual's existing beliefs, attitudes and behaviors on adopting the message. How an individual copes in general may greatly affect the assimilation of the message. The communication model concentrates on the immediate consequences of adopting changes in behavior without considering the effects on pre-existing perceptions. Information on how to maintain a desired change in behavior over long periods of time is not provided, nor is the influence of social support or social norms factored into the model.

Though the model is limited in producing behavioral change, the communications model has helped to influence knowledge, attitudes, and beliefs about AIDS. While communication approaches provide little insight concerning how information affects attitudes and leads to compliance, the receipt, comprehension, retention and acceptance of the message are essential ingredients associated with compliance (Leventhal et al.1988). Findings from the AIDS supplemental questionnaire included in the National Health Interview Survey continue to reflect an increase in the public's knowledge about AIDS as well as shifts in attitudes about the disease and perceived vulnerability (Dawson, Cynamon, & Fitti,1988). Furthermore, the measurement of knowledge about AIDS has alerted the scientific community to the lack of information among special groups such as minorities, IVDA, and adolescents.

The lack of knowledge concerning HIV risk reduction among minority groups, IVDA, and adolescents suggests that these groups need more

information and that information may have to be specially tailored to the characteristics of these populations. In a preliminary survey among black homosexual men in Detroit, Williams (1988) found that of the 62 individuals surveyed, 58% correctly identified IVDA as a mode of HIV transmission while only 13% correctly identified that HIV was transmitted through semen and blood. Data from the supplemental questionnaire on AIDS in the National Health Interview Survey indicate that blacks were more than twice as likely to indicate that they knew nothing about AIDS than whites (Dawson, Cynamon, & Fitti, 1988). Misinformation has also been reported in a number of studies investigating knowledge about HIV infection among IVDA. Ginzberg, French, Jackson, Hartsock, MacDonald, & Weiss (1986) found that over one-third of the 1000 IVDA participating in the survey did not recognize the risk of HIV transmission from the IVDA to their heterosexual partner and 43% did not know that infants born to women who are IVDA are at risk for AIDS. Similarly, surveys of adolescent's knowledge about AIDS suggest considerable confusion among adolescents concerning HIV transmission and no concern about becoming HIV infected (Strunin & Hingson,1987; Simkins & Eberhage,1984).

In sharp contrast to the lower levels of knowledge among specific groups such as minority groups, IVDA, and adolescents, white homosexual and bisexual men have considerable knowledge about the risk of HIV infection. Furthermore, the research on changes in sexual practices among this group indicate that many have adopted some form of risk reduction. Given the magnitude of the observed changes, it appears as if the temptation to explore the associations between knowledge/attitudes and changes in behavior has been too tempting to resist. Behavioral scientists have long been aware of the lack of associations between knowledge/attitudes and

changes in behavior. Yet despite this, researchers have persisted in assuming that information concerning HIV risk reduction was changing attitudes about risk reduction and that changes in attitudes motivated individuals to incorporate safer sexual practices into existing behavior patterns. The lack of empirical evidence regarding the extent knowledge and attitudes actually influence HIV risk reduction should not be surprising.

Kelly, Lawrence, Brasfield, & Hood (1987) were unable to establish any relationship between knowledge about risk reduction and risk behavior. In this study one hundred homosexual and bisexual men completed questionnaires assessing sexual behavior and a thirty-three item knowledge test about AIDS and HIV transmission. The results of the study indicated that level of knowledge had little influence on the frequency subjects engaged in in either high or low risk sexual practices. This study replicates other research that had demonstrated a lack of association between knowledge and changes in behavior (Haynes et al.1976)

McKusick, Horstman, & Coates (1985) found that despite accurate knowledge of HIV risk reduction, subjects evidenced marked discrepancies between knowledge and their sexual behavior. Several relationships between knowledge and attitudinal items and numbers of sexual partners over the past month were found. Thirty-five percent of the men who agreed that decreasing the number of sexual partners would reduce risk had sex with more than five different partners in the last month. Eighty-one percent of the participants who agreed with a statement that they used anonymous sex to relieve tension had three or more sexual partners in the previous month. While over 80% of the participants correctly identified risk associated with HIV infection, not only did level of knowledge not influence

behavioral changes, but attitudes toward adopting risk reduction were similarly uninfluenced by knowledge.

Calabrese, Harris, & Easly (1987) found that neither attendance at a safe sex lecture, receiving advice from a physician about AIDS, nor testing for HIV antibody status were related to HIV risk reducing behaviors, but Emmons, Joseph, Kessler, Wortman, Montgomery, & Ostrow (1986) analyzed cross-sectional data from the Multicenter AIDS Cohort Study and found that knowledge of HIV risk reductions was strongly associated with reduction in risk behaviors. In a subsequent study, the same data were examined from a longitudinal basis and the relationship between knowledge and behavioral change was no longer significant (Joseph, Montgomery, Emmons,Kessler, Ostrow, Wortman, O'Brien, Eller, & Eshleman,1987). It was noted that the discrepancies in the relative contribution of knowledge to risk reduction in the cross-sectional design may reflect associations with initial changes in behavior. On the other hand, the longitudinal design may have reflected maintenance of behavioral risk reduction in which knowledge may not be as important.

Valdiserri, Lyter, Kingsley, Leviton,Schofield, Huggins, & Rinaldo (1987) conducted a study examining knowledge and attitudes supportive of HIV risk reduction. Of 1,700 homosexual and bisexual men participating in a natural history study of HIV infection, 464 agreed to participate in an educational program designed to increase understanding of HIV infection and risk reduction. This study differs from others reviewed thus far since the investigators evaluated a specific program rather than assessing the influence of mass media education. Since knowledge was already high among participants, little change in knowledge was observed following the intervention. However, more supportive attitudes regarding HIV risk

reduction, attitudes favoring decreasing the number of sexual partners and discussion of AIDS prevention with sexual partners were reported by participants following the intervention. Nearly two-thirds of the participants had reported unprotected anal intercourse at least once during the past six months. The relationship between attitudes and sexual practices were not examined, nor was there an attempt to determine how the intervention actually affected attitude change. Furthermore, the majority (1050) of the individuals asked to participate in the study declined and enrollment was a prerequisite for obtaining HIV antibody status. The sample selected all wanted to know their antibody status which may itself be associated with more motivation to change. This raises issues concerning the effectiveness of the intervention. Other studies have suggested a number of psychological factors distinguishing between individuals who want HIV antibody results and those that do not (Coates, Stall, Kegeles, Lo, Morin, & McKusick, 1988).

Emmons, Joseph, Kessler, Wortman, Montgomery, & Ostrow (1986) are among the first investigators to examine the relationships between psychosocial factors and HIV risk reduction using the health belief model (Rosenstock, 1966). As with the communications approach, knowledge, attitudes, and beliefs play a role in determining compliance as do the mediating influences of demographics and the actual disease. The health belief model assumes that sufficient information concerning health risk and the advantages and consequences of following prescribed changes will motivate individuals to adopt health promoting behavior. However, unlike the communications approach, the health belief model is concerned with how the person evaluates the information rather than how the information influences the person. The theory depends on perceived probability of threat

and perceived severity of threat which determine risk perception that serves to motivate the person to act. Perceived benefits, including the feasibility and efficacy of the particular health behavior, and perceived barriers which impede the adoption of health promoting behaviors, determine the relative advantages of adopting particular behaviors as well as the particular action taken. According to Leventhal et al. (1988) the dimension of perceived barriers is the best predictor of health behavior, followed by vulnerability, benefits, and severity. The model neglects the influence of coping strategies and social norms, relies heavily on the assumption that people behave in rational ways, and as with other models like the communication approach, focuses on attitudes and behavior at fixed points in time without considering what affects the maintenance of behaviors over longer periods of time.

Emmons et al. (1986) identified six psychosocial factors common to several theoretical models that have been useful in predicting health behavior. These factors reflect dimensions of the health belief model and included perceptions of vulnerability to the disease, beliefs about the efficacy and accessibility of health care, and knowledge about the disease and demographic characteristics. Social network characteristics, which are often not examined within this model, were also included. These factors were examined in relation to several dichotomous measures which included changes in sexual practices since the AIDS outbreak, celibacy, monogamy, avoidance of anonymous partners, avoidance of receptive anal intercourse, and modification of practices associated with anal intercourse (using condoms or withdrawing before ejaculation). Standard multiple logistic regression was used to examine the relationships between each of the psychosocial variables and the behavioral outcome measures. Both samples

consisted of 1000 predominantly white (91.1%), well-educated (16.2 years of education) homosexual men not diagnosed with AIDS who were already participating in the Multicenter AIDS Cohort Study in Chicago. The magnitude and usefulness of the psychosocial factors were initially examined in a cross-sectional design. Subsequently the same variables were analyzed for the same population from a longitudinal perspective (Joseph, Montgomery, Emmons, Kessler, Wortman, O'Brien, Eller, & Eshleman, 1987).

In the cross-sectional study, knowledge emerged as the most important predictor variable, while no relationship between knowledge and outcome variables was found in the longitudinal study. As previously indicated, the the discrepancies in the relative contribution of knowledge to risk reduction in the cross-sectional design may reflect accumulated or initial changes in behavior while the longitudinal design may have reflected maintenance of behavioral risk reduction in which knowledge may not be as important. Perceived risk measures included self-reports of how likely respondents thought they would get AIDS and ratings of how their chances of getting AIDS compared with those of the average gay man. For the cross-sectional study, perceived risk was related to the outcome measures assessing general changes in sexual practices and attempts to reduce the numbers of partners, while in the subsequent longitudinal analysis no such relationships were evident. In both studies a strong negative effect was found between perceived risk and avoidance of anonymous sexual partners. Perceived efficacy was based on a the question asking respondents to indicate that if they were to do everything they could to reduce their chances of getting AIDS, how much more would this reduce their risk. If there was an indication that there had been change, respondents were then

asked to indicate how much they thought this had reduced their risk. In the initial study, perceived efficacy was related to all outcome measures except avoidance of anonymous sexual partners. When further classifying perceived risk into levels of risk, a significant positive effect for perceived risk was found for all respondents except for those at the highest level of perceived risk. The negative effect for those at the highest level of perceived risk was interpreted as an example of an increased sense of risk having deleterious effects on behavior. For example, there may be individuals who because they feel they are at higher risk, are less likely to change. In the longitudinal study, perceived efficacy was only related to statements endorsing a general change in sexual behavior since the epidemic. The investigators stress that most of the positive effects concerning perceived risk or efficacy were modest.

Both studies found evidence for a relationship between perceived barriers and avoiding anonymous sexual partners, but for no other outcome measures. Perceived barriers were assessed by having respondents rate their perceived difficulty controlling sexual responses and their belief in a biomedical cure for AIDS. Results revealed that men with difficulties controlling sexual impulses were more likely to engage in anonymous sex. Finally social network characteristics, specifically perceived social norms supportive of behavioral change were positively related to all the outcome measures. Affiliation with the gay community as reflected in assessment of participation in activities within the community were not related in either the cross-sectional or longitudinal studies.

Joseph et al. (1987) suggested several explanations for the discrepancies that emerged in the cross-sectional and longitudinal studies. Since the samples were not identical, re-analyses of the cross-sectional

data were performed using only the data from subjects whose data had been evaluated in the longitudinal study. Re-analysis eliminating extreme scores and examining respondent's difficulty recalling information over a six month period did not change the relationships between predictor and outcome variables. Another issue concerns the inadequacy of the health belief model (HBM) which does not indicate how the individual appraises success of their coping action or what leads to the modification of coping strategies as the person experiences failure or receives other information influencing existing coping strategies. The model also focuses on perception of risk as motivation and often does not fully consider the extent to which social norms influence behavior. These two studies however did attempt to evaluate the influence of social norms and the investigators plan to expand the set of predictor variables to include such factors as life events, social support, and satisfaction with one's sexual preferences. Predictor variables were examined with respect to stability at the two points of assessment in the longitudinal study. High correlations between variables at the two time points lead to the conclusion that it was unlikely that the magnitude of the variability in the predictor indices were not contributing to the differences seen in the the two studies. Issues concerning the meaning rather than the magnitude of the predictor variables were discussed. It was suggested that the belief that one is at increased risk might be stable over time, but that the consequences of that belief might not be as stable. For example, the salience of the belief may be different when someone has a friend actually dying of AIDS than when the person does not directly know of anyone dying of AIDS. Overall, these two studies dramatically illustrate problems associated with attempts to establish predictors of behavioral change and highlight the differences associated with determining the influence of

factors during initial stages of change and subsequent stages. In general however, these two studies provide good examples concerning the application of a particular theoretical model of compliance to HIV risk reduction.

Behavioral and social learning models have not been consistently applied to reducing risk of HIV infection. Behavioral approaches are often unable to demonstrate long-term maintenance of behavioral changes and do not identify the specific aspects of the programs responsible for change (Leventhal et al. 1988). There is, however, interest in applying social learning models to HIV risk reduction among IVDA and to adolescent populations (Des Jarlais et al. 1988; Flora & Thoresen, 1988). Social learning models, unlike other compliance models, emphasize the development of social skills to help a person either resist peer pressure or learn new behaviors which could reduce risk of HIV infection. Though Des Jarlais et al. (1988) suggest that IVDA are motivated to reduce their risk of HIV infection and studies show a decrease in sharing drug equipment, there is little evidence of corresponding increases in safer sexual practices. They suggest that three components are required for a successful AIDS prevention program for IVDA. These components include giving new meaning to sharing drug equipment, making the means for behavioral change more available, and reinforcement of behavioral changes. Rather than ignoring the situational and motivational factors often associated with relapse among IVDA, Des Jarlais et al. (1988) also suggests attention has to be given to the development of new norms fostering safer injection practices and the adoption of safer sexual practices. Similar approaches to reduce risk of HIV infection among adolescents have also been proposed (Flora & Thoresen; 1988).

A model of compliance that has not been tested with respect to HIV reduction is the self-regulatory model (Leventhal et al. 1988). This model focuses on the stages that regulate the adoption and maintenance of health promoting behavior which include the cognitive representation of the health threat, coping with the health threat, and appraisal of the success of the adopted coping strategies. Emotional responses may occur at any of these stages. The interesting feature of this model is that it suggests a role for including an individual's prior history and experience as an important factor in determining an individual's response to a current health threat. Individual differences or episodic memories are incorporated into the model. Episodic memories may conflict with the more conceptual, general knowledge about risk reduction or the disease itself and contribute to noncompliance. To some extent, this was alluded to in the discussion by Joseph et al. (1987) regarding the influence of having a friend actually dying of AIDS on the salience of the belief that one is at high risk for HIV infection. The self-regulatory model emphasizes the need to provide information on appraisal, increases attention to internal stimuli influencing perceived threat, and considers the individual's perception of symptoms at both an episodic and semantic levels.

In summary, each compliance perspective examined within the context of AIDS risk reduction has provided information that can be used to increase compliance. The biomedical model continues to be useful in determining patterns of HIV risk reduction among individuals currently not identified at risk of HIV infection. Knowledge is a prerequisite to behavioral change. As already mentioned, lower socio-economic minority groups, IVDA, and adolescents may not be sufficiently informed about HIV risk reduction. The communication approach draws attention to communication variables that

increase the salience of the message concerning HIV risk reduction. Comprehensibility, organization, and delivery of the message as well as the perceived credibility of the sources of information and specific health recommendations must all be considered when attempting to increase a person's knowledge about HIV risk reduction. HIV risk reduction campaigns have also served as cues to action. While attention to communications variables may increase the level of understanding regarding HIV risk reduction, this approach does not guarantee changes in attitudes and is unable to account for changes in behavior. Behavioral models have often focused exclusively on targeting the behaviors that need to be changed and are beginning to attend to the context in which the behaviors occur and the necessary components of behavioral approaches that will influence the maintenance of behavioral changes. The HBM suggests that the perceptions individuals maintain regarding risk of HIV infection influence behavior and has been useful in directing attention to the importance of exploring HIV behavioral changes within a theoretical context.

Specific Aims

Chronic mental illness explicitly implies a disturbance in functioning that is not as amenable to treatment as other disorders. Given such disturbances in psychological functioning some might argue that the chronic mental patient does not have capacity to be responsive to threats about AIDS. This group continues to be viewed as have difficulty utilizing psychiatric treatment, therapy, or social rehabilitation. Complicating the situation are social stresses that often accompany chronic mental illness; stresses which may serve as predisposing factors to chronic mental illness as well as consequences of a life-long incapacitating condition. The problem of providing treatment and services to the young chronic adult psychiatric patient point to inevitable difficulties designing interventions to reduce the risk of HIV infection among this group. Furthermore, institutional barriers make it hard to include HIV education and risk reduction into often already strained mental health systems. There is little information available to begin suggesting what might be helpful in developing interventions.

Findings concerning changes in sexual behavior as well as psychosocial factors associated with observed behavioral changes have been obtained from convenience samples, making it difficult to generalize to other segments of the population. The vast majority of studies investigating HIV risk reduction have concentrated on the changes in high risk behaviors that have occurred since the epidemic and not on understanding the dynamics associated with these observed changes. The research generated thus far only hints at factors that would be helpful in developing strategies to

reduce the risk of HIV infection among young chronic adult psychiatric patients. A number of general factors, however, have been identified.

Studies examining relationships between the influence of knowledge about AIDS and HIV risk reduction and subsequent behavioral changes suggest that information is necessary though not sufficient in promoting behavioral change (Emmons et al.,1986; Kelly et al., 1987). Regardless of the lack of associations between knowledge about AIDS and changes in behavior, the provision of information remains a necessary component of a health message designed to reduce the risk of HIV infection. Education about AIDS helps promote behavioral change and may reduce fear though often does not alter difficult-to-change behaviors or sustain behavioral change. The National Research Council (1989) has identified both risk perception and self-efficacy as factors to be taken into consideration when designing interventions to promote HIV risk reduction. The work of Joseph et al. (1987) suggests risk perception, self-efficacy, and other dimensions of the HBM are variables that share an association to behavioral change. Fear of AIDS, threat associated with a health message about HIV risk reduction, knowledge about AIDS and the relationships among these factors and changes in these factors can be examined as part of an intervention to facilitate change.

Data currently available concerning HIV risk reduction along with data from the fear communications research (Leventhal,1970) seem to provide the basis of developing an intervention to reduce the risk of HIV infection for any population. The manner in which the health message is presented must take into consideration the audience to which the message is directed. This includes tailoring the message to the educational level of the targeted group and attending to the credibility and similarity of the sources of the

communication. Mays & Cochran (1988) and Peterson et al.(1988) indicate that characteristics of targeted groups are overlooked or not considered when designing health messages to reduce the risk of HIV infection among inner-city ethnic minority populations. Not attending to such simple factors as matching the race of the sources of the health message with the race of the audience could make a difference regarding the adoption of health promoting behaviors, particularly when there is some evidence suggesting that AIDS is often perceived by minority groups as only affecting white homosexual men (Mays et al.,1988). These communicator and communication factors were included in the intervention for the present study.

In addition to presenting basic information about AIDS and how to reduce the risk of HIV infection, the present study manipulated the level of threat associated with the health recommendations. The presentation of AIDS information inevitably contains some threat. For purposes of the present study, threat or fear was conceptualized as increasing the salience of the threat of AIDS through varying the emphasis on the consequences of AIDS rather than through the presentation of frightening and uninforming information. Attention to the level of threat in a health message directed to the young chronic psychiatric patient is important. Chronic emotional illness includes severe psychological difficulties such as low tolerance of frustration, reduced repression, extreme vulnerability to outside forces and little control of the contents of awareness (Naidu, Channon, & Woolcott,1988). Too much threat could conceivably be overwhelming and result in little learning. On the other hand, chronic mental illness is often characterized by withdrawal and extreme passivity. The chronically mentally ill person is often forced to to deal with other more immediate

concerns such as housing, food, and survival in an often hostile environment and as a result neglect or underestimate the significance of attending to health matters. A reasonable level of threat associated with the health message could possibly make the heath issue more relevant and serve to promote risk reduction.

Fear Communications and HIV Risk Reduction

Fear communications research has largely been confined to studies on adults, college students, and children. Much of the early work on the effects of fear-arousing communications initiated by Janis et al. (1953) was inspired from clinical studies of patient's reactions to psychiatric treatment. However there seem to be no studies investigating the utility of fear-arousing communications in psychiatric populations. The present study evaluated the effects of varying the level of fear associated with a health message presented to a chronic psychiatrically impaired population. Furthermore, AIDS and HIV risk reduction, yet to be investigated within a fear communication perspective, served as the topic of the health message.

Though messages designed to evoke fear of HIV infection have been developed and used in mass media campaigns, there have been no controlled studies of the effectiveness of such messages (National Research Council, 1989). Attempts to influence health entail an accurate description of the threat and the consequences of noncompliance. Beck & Frankel (1981) indicate that health messages involve the presentation of unpleasant health outcomes that can be avoided if certain behaviors are adopted. Any educational effort to curb the spread of HIV infection inevitably entails the presentation of disturbing and frightening information.

Fear communications have been one of the principal modes directed at improving compliance. In most studies, the fear provoking information is

varied across experimental conditions while the recommendations are kept constant. Substantial research has focused on understanding the relationship between health threat communications and the adoption of health promoting behavior for a variety of topics such as dental hygiene, smoking, tetanus, cancer, tuberculous, venereal diseases (Higbee,1969). Higbee's (1969) review of fear communication research indicates that most fear-arousing studies suggest that high threat is more effective than low threat in persuasion. Janis & Feshbach (1953) suggested that low to moderate fear facilitated persuasion and that further increases in fear would produce defensive avoidance and inhibit persuasion. The results of their study indicated that high fear-arousing communications failed to increase the effectiveness of the health recommendations, suggesting that high fear often has adverse effects associated with defensive denial. This study is often used to support the idea of a negative association between persuasion and high fear communications when in fact the bulk of the evidence suggests a positive association (Leventhal,1970).

Janis & Feshbach's (1953) conclusion that high fear distorted perceived threat through denial of vulnerability was extensively questioned by Leventhal (1970) who suggests that factors other than denial could account for the results. Leventhal, Safer, & Panagis (1983) suggest that interpretation of negative associations have largely focused on emotional responses to threatening information and ignored cognitive aspects of threat. Leventhal (1970) proposed a parallel response or dual process model which draws attention to both emotional and cognitive components. For example, Leventhal & Watts (1966) found that the arousal of fear increases desire to take preventive measures primarily for those persons who viewed themselves as invulnerable to disease. On the other hand, subjects who

perceived themselves to be highly vulnerable to disease and who were exposed to a moderate fear-arousing messages reported more desire to adopt preventive and protective behaviors than those exposed to a high or mild fear-arousing message. Low self-esteem has also been negatively related to acceptance of high threat appeals (Leventhal & Perloe, 1962). Goldstein (1959) distinguished between copers and avoiders to fear-arousing messages and found that high fear appeals were more effective with copers and less threatening communications were more effective among avoiders. When past behavior has made a person more vulnerable to danger, the person is less likely to adopt health promoting behaviors as the message becomes increasingly fearful (Leventhal,1970). Beck et al. (1981) also suggest that the effectiveness of threatening health messages depends on the extent the person perceives control over the threat. The belief that recommendations will be beneficial and perceived ability to perform the recommended behaviors are fundamental processes associated with threat control.

Fear communication research has implications regarding the design of an effective health message and directs attention to conceptual and methodological issues which should be useful in designing and evaluating AIDS prevention messages. The National Research Council (1989) recommends that AIDS prevention messages should contain threat that is sufficiently high to motivate individuals to adopt risk reducing behavior, but not immobilize the individual and specific information concerning protective behavior. Leventhal et al. (1983) recommend that health messages contain the following: fear information that elicits fear and draws attention to the threat and its consequences rather than diagnosis and treatment, information about the causes and consequences of the threat

and the benefits of adopting health promoting behavior, action plans on how to deal with the threat and reassurance that the person can successfully manage the threat.

Health messages concerning HIV infection and AIDS have not yet been used as topics in fear communications research. Systematic investigations varying the amount of fear should clarify the function of fear in health messages designed to reduce HIV infection. In the face of such an overwhelming and urgent crisis, it might be easy to overlook assessment of the components of a health message promoting HIV risk reduction. To ignore the role of fear would only obscure whether information concerning HIV risk reduction reduces fear of HIV infection or fear affects how information is processed and indeed whether decreases in fear have any influence on behavior (Baum & Nesselhof,1988).

Health Belief Model and HIV Risk Reduction

The health belief model (HBM) has been used in numerous studies to examine why individuals did or did not engage in a variety of health-related behaviors (Rosenstock,1974). Several recent studies provide support for the usefulness of the HBM in predicting the adoption of HIV risk reducing behavior among white homosexual males (Emmons, et al. 1986; Joseph, et al.1987). For example, perceived barriers has been consistently negatively related to HIV risk reduction.

One of the major problems with the HBM has been the inability to predict compliance from knowledge of perceived severity, susceptibility or risk alone. Increases in these indices are thought to be related to preventive health behavior. Yet Leventhal et al. (1983) note that increases in these dimensions are often accompanied with increased arousal of fear. Several studies have suggested either no relation or a negative relationship

between these factors and compliance (Kirscht, 1983; Janz et al., 1984). The research on HIV risk reduction among white gay men also suggests inconsistent findings associated with increased perceptions of risk and behavioral change. Some studies suggest that among white homosexual men an increased sense of risk or vulnerability may only lead to distress rather than an increase in HIV risk reduction and could conceivably reduce adherence to risk reduction guidelines (Joseph, Montgomery, Emmons, Kirscht, Kessler, Ostrow, Wortman, & O'Brien, 1987; Joseph et al., 1987). Bauman & Siegel (1987) on the other hand measured both objective risk as reflected in reports of actual behavior and subjective risk among white gay males and found that subjects tended to underestimate their level of actual risk. Also as anxiety decreased, the tendency to underestimate the actual riskiness of behavior increased. This was interpreted as supporting the notion that an increased sense of risk may be necessary for behavioral change to occur.

The results of the studies by Joseph et al. (1987) and Bauman et al. (1987) point to influences in addition to HBM indices that might affect health-related behaviors. Fear communications research also suggests a role for additional variables mediating the response to health threatening communication. Leventhal (1970) suggests there are individuals who engage in behaviors which place them at risk and yet do not regard themselves as vulnerable to the negative consequences of not adopting health promoting behavior. This group was more responsive to high threat appeals than low threat appeals. It also is possible that persons who engage in risky behaviors also perceive themselves to be very vulnerable to the negative consequences of their actions. It is likely that a low threat appeal would be more effective for promoting healthy behavior in this group. What is

apparent is that an elevated sense of risk or an underestimation of risk may be negatively associated with adopting health preventive behaviors. Only when perceived risk is accurately assessed does the relationship between perceived risk and health promoting behavior actually emerge in the direction predicted by the Health Belief Model. Clearly, other factors may influence not only the accuracy of perceived risk but other HBM dimensions as well. In the present study, initial general levels of fear of AIDS were examined as an intervening factor influencing responses to the interventions.

In sum, dimensions associated with the HBM were measured in the present study. Though the HBM is problematic, it offers a means of evaluating the often ignored cognitive aspects associated to a person's response to threat appeals (Leventhal et al. 1983). The present study utilized the HBM model to conceptualize processes influencing the adoption of HIV risk reducing behaviors among young chronic adult psychiatric population. The current study also evaluated the efficacy of using a fear-communication intervention in modifying HBM dimensions to achieve HIV risk reduction. Other factors including initial general level of fear of AIDS that might influence health-related behavior as well as knowledge about AIDS and social network characteristics were examined (Janz et al.1984).

Hypotheses

The purpose of this research was to examine the short-term effects of interventions designed to reduce risk of HIV infection among young adult chronic psychiatric patients. This group of patients represents an age range which is more likely to be sexually active and consequently at greater risk of HIV infection than older chronically mentally ill patients. Furthermore as psychiatric services shift to community-based programs, the psychiatric patient has increased opportunities for interpersonal experiences, including sexual activity. The study was conducted at St. Elizabeths Hospital which provides psychiatric services predominantly to poor inner-city blacks.

The number of HIV seropositive individuals identified through the Blackburn Laboratory at St. Elizabeths Hospital has increased from six in 1985 to a total of one-hundred and thirty-five in 1988 (Gorelick & McNeill, 1989). Little however is known regarding the types of behavior that may be placing this group at risk for HIV infection. No investigations concerning the information this group already has about HIV infection have been conducted. The degree to which this population perceives itself to be at risk for HIV infection has not been determined. Furthermore, no attempts have been made to examine factors that could influence behavioral change and the adoption of HIV risk reducing behavior or of education and the context surrounding the presentation of health messages designed to reduce the risk of HIV infection.

Complicating the situation is a lack of sex education resources and educational materials designed to reduce the risk of HIV infection for this population. The Sex Information and Education Council of the U.S. (cited in

Lukoff, Gioia-Hasick, Sullivan, Golden, & Nuechterlein,1986) indicated that as of 1986 no sex education resources were available to the mentally ill or to individuals working with the mentally ill. Furthermore, Berman & Rozensky (1984) indicate that few if any controlled investigations regarding behavioral outcomes of sex education programs among chronic psychiatric populations have been conducted. There is however some evidence that the chronically mentally ill person is receptive to sex education and anecdotal evidence that education and counseling about sexuality improved patient's behaviors related to sexuality (Wascow,1980; Demetral, 1981). There is also some evidence suggesting that sexually related issues for the chronic psychiatrically impaired may be more related to problems in social skills rather than to processes associated with psychiatric disturbances (Verhulst & Schneidman, 1981).

Much of the data collected in this study depended on self-reports. Relying on self-reports when studying sexual behavior is problematic in any population (Kirscht,1983; Reinisch, Sanders, & Ziemba-Davis,1988). However, several studies of sexual behavior in chronically mentally ill populations suggest that such measures in this group are no less reliable than those obtained from patients attending sexual dysfunction clinics (Verhulst & Schneidman, 1981). Additional behavioral measures indexing condom use were incorporated into the study as more direct measure of behaviors. Condom vending machines were placed on the units where subjects live, and baseline measures of condom use two weeks prior to the intervention were compared with condom use two weeks following the intervention.

The study included pre-test measures, an intervention with immediate post-test measures, and follow-up measures two weeks after the

intervention. The study assessed existing knowledge, attitudes, and behaviors related to AIDS and HIV risk reduction. The level of fear associated with the health message was varied from high to low in two separate conditions. Immediate effects of manipulating the level of fear as well as effects over a two week period were evaluated with respect to changes in acquisition and retention of knowledge, attitudes and behavior associated with AIDS and HIV risk reduction. Pre-existing level of fear of AIDS as well as general fear of illness were examined as mediating factors associated with the interventions and its subsequent effects on retention of knowledge, attitudes, and behavior.

The following hypotheses were tested from data obtained at the pre-test which was just prior to the intervention, the post-test which was immediately after the intervention, and the follow-up which took place two weeks after the intervention.

I. Pre-test Hypotheses

1. There will be no significant differences among the three randomly formed groups with respect to self-reports assessing the following mediating variables and dependent measures:

a. Fear of AIDS

b. Knowledge about AIDS

c. Perceived vulnerability/risk of HIV infection,

d. Perceived Efficacy of using condoms

e. Perceived barriers

f. Social network characteristics

g. General health motivation

h. Type and frequency of sexual activity

i. Use of tokens

Rationale: Prior to the intervention, the three conditions to which subjects were randomly assigned ideally would not differ with respect to the dimensions expected to change as a consequence of the intervention used in the present study.

2. Subjects using more condoms (as measured by tokens) prior to the intervention (base rate) will report:

a. Less general fear

b. More knowledge about AIDS and HIV risk

c. Increased perceived vulnerability/risk of AIDS

d. Increased perceived efficacy of using condoms

e. A decrease in perceived barriers to behavioral change

f. Positive perceptions of social network characteristics

g. Increased general health motivation

Rationale: The health belief model and health threat research have linked these health-related influences to the adoption of health promoting behaviors (Leventhal,1970; Janz et al, 1984). Retrospective studies of the health belief dimensions indicates a trend for these factors to be associated with behavioral factors. Though not specifically linking these belief dimensions to condom use, Joseph et al. (1987) has demonstrated that HIV risk reduction seems to be related to changes in these health belief dimensions.

II. Post-test Hypotheses

1. The high fear-arousing condition will be more effective than the low-fear-arousing condition in decreasing general fear of AIDS, increasing perceived vulnerability/risk of HIV infection, increasing perceived efficacy

of using condoms, decreasing perceived barriers to behavioral change and positively influencing perceptions of social network characteristics. Thus subjects in the high fear-arousing condition will on self-report measures report greater increases in perceived vulnerability/risk of HIV infection than subjects in the low-fear-arousing condition, greater increases in perceived efficacy of using condoms than subjects in the low-fear-arousing condition, significant decreases in general fear of AIDS and in perceived barriers to behavioral change than subjects in the low-fear-arousing condition, and more increases in self-reports of positive perceptions of social network characteristics than subjects in the low-fear-arousing condition.

Rationale: High fear-arousing conditions have been more effective in influencing changes in health-related perceptions in the hypothesized direction than low-fear-arousing conditions (Higbee, 1969).

2. The intervention will result in greater short-term retention of information presented about AIDS and HIV infection among subjects in the high and the low fear-arousing conditions than subjects in the control condition. However, the level of fear arousal will not result in a significant difference in short-term retention of information presented about AIDS and HIV infection between subjects in the high and the low fear-arousing conditions immediately following the intervention.

Rationale: The experimental conditions will receive information about about AIDS and HIV infection while the control group will receive only neutral and irrelevant information. The level of fear arousal is not related to the learning of factual content (Higbee, 1969). The amount of learning that results following a health threat communications intervention has not been shown to interact with the fear level.

3. Subjects in either experimental condition who receive higher doses of neuroleptics will exhibit less change on self-report measures of the dependent variables than subjects on lower doses of neuroleptics immediately following the intervention.

Rationale: Neuroleptics are thought to be effective by reducing arousal. This could interfere with a subject's ability to attend or concentrate while exposed to the experimental conditions and ultimately influence the effectiveness of the intervention.

III. Follow-up Hypotheses

1. The high fear-arousing communication will be more effective than the low fear-arousing communication in increasing condom use. Thus subjects in the high fear-arousing condition in the two weeks following the intervention will exhibit a greater increase in condom use as measured by tokens than subjects in the low-fear-arousing condition.

Rationale: High threat rather than low threat is more effective. Studies find a positive relationship between high fear-arousal and behavioral compliance (Higbee, 1969).

2. The high fear-arousing communication will be more effective than the low fear-arousing communication in reducing self-reports of behavior that increase risk of HIV infection and increasing self-reports of behavior that reduce risk of HIV infection. Individual items on the self-report inventory will be examined separately. For example, pre-test self -reports of the number of anonymous sexual contacts will be compared with self-reports at the follow-up.

Rationale: High threat rather than low threat is more effective. Most studies find a positive relationship between high fear-arousal and behavioral compliance (Higbee,1969).

3. Condom use as measured by tokens will be positively associated with changes in the following:

a. Less general fear of AIDS

b. More knowledge about AIDS and HIV risk

c. Increased perceived vulnerability/risk of AIDS

d. Increased perceived efficacy of using condoms

e. A decrease in perceived barriers to behavioral change

f. Positive perceptions of social network characteristics

g. Increased general health motivation

Rationale: The health belief model and health threat research have linked these health-related influences to the adoption of health promoting behaviors (Leventhal,1970; Janz et al, 1984). Prospective studies of the health belief dimensions indicates a trend for these factors to be associated with behavioral factors. Though not specifically linking these belief dimensions to condom use, Joseph et al. (1987) has demonstrated that HIV risk reduction seems to be related to changes in these health belief dimensions.

4. There will be a significant interaction between initial general level of fear of AIDS measured during the pre-test and level of fear associated with each treatment condition. Higher initial levels of general fear of AIDS will render the high fear-arousal condition less effective than initial lower initial levels of general fear of AIDS.

Rationale: Considerable attention has been given to determining variables which interact with the fear level associated with the health threat

(Higbee,1969). There is evidence indicating that self-esteem, perceived vulnerability, prior beliefs interact with the level of fear arousal, especially with higher levels of fear arousal (Leventhal,1970). If indeed there is an interaction between initial general fear of AIDS and the level of fear to which the subject is exposed, this finding would suggest that an intervention might be more effective if initial general fear of AIDS were considered prior to assigning a subject to a specific experimental condition.

Subjects

Subjects were recruited from the Residential Program located at St.Elizabeths Campus in Washington, D.C. During a four week period one hundred and forty-nine patients received tokens to use to obtain condoms from condom vending machines that had been installed on each of the seven units where patients reside. Of these patients, seventy-three had been randomly assigned to the high fear, low fear, and control condition. There were twenty-eight subjects in the high fear condition, twenty-four in the low fear condition , and twenty-one in the control condition. Twenty additional patients who also arrived on the day of the intervention, decided not to participate. These twenty patients in addition to the fifty-six patients who did not chose to come to the study were subsequently compared with the seventy-three subjects who participated in the study to determine if the participants were comparable with nonparticipants.

The Residential Program was developed for those patients who already have many of the social skills needed to eventually move into the community. Their need for psychiatric services is lower than those of inpatients, however their need for functional or skill development services is as high as many inpatients. This group of patients is comparable to young adult chronic psychiatric patient. The age of this group suggests that they are more likely to be sexually active than older patients. Furthermore, this group is more likely to eventually reside in the community and thus have increasing opportunities for sexual expression.

The Residential Program emphasizes social/recreational services, vocational services, services designed to link patients with supportive residential opportunities, and educational services. Treatment is provided at different levels of intensity depending on the functional level of the person. The program, located on the grounds at St. Elizabeths, is a short-term residential facility with the goal to eventually find longer-term residential treatment within the community. Patients in the program have already developed many of the skills needed to make a successful transition to the community. The program is less structured than a hospital inpatient setting and patients do not require as much supervision as inpatients. Rather than focusing on basic skills, activities are offered to patients to help them strengthen and further develop existing skills in order to maximize the likelihood of successful placement within the community. Some of the patients in this program may already have a job or are preparing to assume employment. Currently it is projected that patients will remain in this program for a period of six months depending on the severity and chronicity of the problems being addressed.

Admission criteria for the Residential Program include: (1) The resident requires a supportive environment (as opposed to a protective one) to meet basic needs, (2) the resident is past the acute psychiatric phase of the illness, (3) resident is free of any acute medical phase of an illness, (4) resident is not assaultive or dangerous to self, others, or property, (5)resident is able to live in an open setting with full privileges, (6) resident does not abuse alcohol or drugs, (7) resident is willing to take medications as prescribed, (8) resident is willing to participate in therapeutic activities, and (9) the resident has adequate average daily living

skills which could improve with verbal supervision as opposed to physical assistance.

This study was offered as a service to patients. Patients were asked to participate in the study and informed consent was obtained (see Appendix A). Subjects were randomly assigned to either the high, low, or control conditions. Thus condition was the between subject factor with three levels. Time was the within subjects factor with two levels for measures of token use and self reports of sexual activity and three levels for other the self- report measures.

Procedures

Two weeks prior to the pre-test session, condom machines were installed on each of the seven units where potential subjects were living. Just prior to the installation of the machines, meetings with staff on all seven units were conducted to inform staff that condom machines would be placed on the units. Staff was only informed about the installation of the machines and no other aspect of the study. It was emphasized that it was important that staff neither encourage or discourage token use.

The machines were installed either in the laundry rooms or in the co-ed showers since these locations were out of the sight of staff and other patients, thus providing some sense of privacy. The condom machines were modified to take tokens that were coded to identify the individual using the token. Potential subjects were informed that the hospital was trying out a new way of dispensing condoms. All potential subjects were informed that they would receive five tokens a week. Potential subjects had also been informed that they could receive more tokens if they need more. Tokens were distributed to one hundred forty-nine potential subjects over the two week baseline period.

Two days prior to the intervention, posters were placed on units inviting potential subjects to participate in "Health Day". Announcements were also made in community meetings inviting patients to participate in a study about health issues. The place and time of day were indicated on the posters and stated in the meetings. Potential subjects were asked to arrive at 8:15 a.m. at a particular location on the St. Elizabeths campus. On the day of the intervention, tokens were collected from the condom machines on each unit as a baseline measure of condom use.

Ninety-three potential subjects responded to the announcement of the study. These persons were randomly assigned to one of the three conditions (high fear-arousing condition, a low fear-arousing condition, and a control condition). During the assignment of subjects to condition some of the potential subjects left. Once the conditions had been formed, each condition was then divided into three smaller groups and instructors escorted subjects to areas that had been selected to conduct the intervention and complete questionnaires. Informed consent was obtained. At this point several subjects decided not to participate because they were not interested. A number of other subjects became fatigued and left. Thus, twenty of the original ninety-three dropped out, leaving a total of seventy-three subjects who completed the pre-test, received the intervention, and the post-test. Of these seventy-three, three did not complete the two week follow-up. Two of these had left the hospital and one refused to participate in the two week follow-up.

Instructors who administered questionnaires and interventions were psychology graduate students in training at St. Elizabeths or psychologists who had just recently completed their training at St. Elizabeths. Though no subject was upset by the content of the materials presented, these

instructors had been selected since they had sufficient clinical experience with this population and would be able to appropriately intervene should a subject become distressed. The instructors did not know which condition they were assigned nor were they informed concerning the hypotheses of the study. Instructors conducted the two week follow-up with the same subjects they had worked with two weeks earlier.

Instructors followed a script for all phases of the study (see Appendix B). In an effort to standardize procedures across all conditions, instructors received prior training concerning the administration of the questionnaires with particular emphasis on reading the consent form aloud, reading all items aloud, and not providing opportunities for discussion among subjects during any phase of the study.

Prior to the pre-test, subjects received information concerning their participation and informed consent was obtained. All groups were told that they were participating in a study to determine what they know about AIDS.

Since attitude and knowledge items could influence behavioral self-reports, self-reports of sexual activity over the past two weeks were administered first followed by questions assessing specific information, attitudes and then knowledge items.

Immediately following the pre-test, the interventions were administered. The participants were shown one of the three videos. No discussion occurred after the videotape was shown. Immediately following the intervention, a questionnaire was administered to subjects to assess the effect of the experimental manipulations. Following the manipulation check, the same questionnaires initially administered were administered to subjects in all conditions with the exception of the self-reports of sexual activity and specific information items.

Tokens were collected from the vending machines on the day of the follow-up. The final follow-up for all participants was conducted two weeks after the intervention at the same location and at the same time of day. The order of administration of the questionnaires was the same as it had been for the pre-test. After all the questionnaires were completed during the follow-up, subjects were debriefed. Subjects were given the opportunity to ask questions, encouraged to discuss their participation or any other concerns they had concerning the study.

Interventions

Audiovisual materials were selected as the medium of the health communication since this form of presenting material is often more likely to attract the attention of the audience when attempting to put forth relatively simple messages (Maier & Thurber, 1968; Chaiken & Eagly, 1976). Furthermore, videotapes permit more experimental control over manipulated variables. Other factors associated with the intervention, such as the length of the videotape, the sources of the communications, and channel variables were also more easily standardized using a videotape.

Manipulations of levels of fear in fear-arousing communications have often been confounded with other variables making it difficult to determine how to manipulate the level of fear in a health message (Leventhal, 1970; Sherer & Rogers, 1984). There does however seem to be some consensus that fear can be manipulated through emphasizing the likelihood that the subject will experience the consequences of the health threat if the preventive behavior is not adopted (Beck et al. 1981). Leventhal (1970) also indicates that most studies of fear communication usually consist of two parts: information which describes the danger and recommendations on how to avoid the danger. Information or the threat appeal describing the danger

associated with AIDS was experimentally manipulated in the present study to create high and low fear-arousing conditions. The likelihood that the subject would experience the consequences of the health threat if the preventive behavior is not adopted received much more emphasis in the high fear-arousing condition and less emphasis in the low fear-arousing condition (see Appendix C). The threat appeal part of the health message was introduced before the recommendations were presented (Job,1988). The recommendations on how to prevent HIV infection were the same for both the high and low fear-arousing condition conditions. The length of the entire videotape for each condition was fifteen minutes.

The threat appeal portion of the intervention was six minutes and developed in two different forms, both containing essentially the same information. The high fear-arousing condition emphasized the painful consequences of the dying from AIDS and other dangers that can result from engaging in high risk behaviors. In the high fear arousing condition, personalized threat-references were directed to the audience,i.e., statements essentially indicating 'this could happen to you'. The low fear-arousing condition only alluded to the dangers and consequences of AIDS. Less personal references were used in the low fear-arousing condition.

In selecting the sources or persons to communicate the threat appeal, the demographics of the subject population were taken into consideration. Mays and Cochran (1988) suggest that many ethnic minority groups may not perceive themselves to be at risk for HIV infection since much of the mass media has portrayed AIDS as a 'White gay disease' and these messages have to a large extent been delivered by White males. This may also be especially critical for ethnic minorities who are also poor and have to be concerned about more immediate survival needs. Since over seventy per cent of the

patients at St. Elizabeths are poor inner-city ethnic minorities, the sources communicating the threat appeal represented the racial characteristics of the subjects to whom the health appeal was directed. These same individuals were used in each of the three conditions. The videotapes began with the Commissioner for the District of Columbia Mental Health Commission followed by a Black male physician, a White male psychologist, a Black female nurse educator, and finally a young adult Black female who in the high fear condition says she has AIDS and in the low fear arousing condition describes what she has heard about a friend who has AIDS.

The videotape selected to present the health recommendations part of the health message is 'AIDSAFE' and was developed by Polaris Research and Development, San Francisco, CA. Written permission to use the video in accordance with the aims of the study was obtained. The 'AIDSAFE' videotape was developed as part of a project designed to provide basic AIDS information to outpatients at St. Elizabeths Hospital. The videotape is nine minutes long and uses simple drawings and a narrative to communicate basic facts associated with HIV transmission (see Appendix C). The videotape presents a rather neutral and unemotional statement concerning the facts associated with AIDS. The videotape states that AIDS has no cure and that eventually a person with AIDS will die, but does not focus on this aspect of the disease process and does not rely on emotional language to convey information on risk reduction. Common myths concerning transmission are presented and the audience is specifically told that the virus is transmitted in semen, blood and vaginal fluids. Sexual transmission and sharing needles are discussed as the major modes of transmission. Using condoms when engaging in sexual activities and not sharing needles are recommended as means to protect oneself from HIV infection. Not

having sex as a means of protecting oneself from HIV infection is equally emphasized. Overall, the videotape and script present prescriptive information concerning AIDS transmission and recommendations concerning HIV risk reduction. As the National Research Council (1989) recommends, this aspect of the intervention provides specific information on steps that the subject can take to reduce risk of HIV infection.

For the control condition a videotape using the same people who introduce the threat appeal about AIDS was made to precede the videotape, 'Common Sense for Allergy Patients'. This film was selected for the control condition since it is health-related, non-threatening, and does not contain any of the information presented in the videos used in the experimental conditions. Video viewing time for control subjects was the same as that for subjects in the high and low fear arousing conditions.

Measures

Behavioral Outcome Measures

Behavioral measures were assessed using self-report measures and change in token use from baseline to the two week follow-up. Several studies of sexual behavior in chronically mentally ill populations suggest that behavioral self-reports in this group are no less reliable than those obtained from patients attending sexual dysfunction clinics (Verhulst & Schneidman, 1981). Self-report measures included questions regarding the number and types of sexual practices subjects report engaging in within the past two weeks (see Appendix D). Additional questions concerning drug use were also included.

The number of tokens used in the two week period prior to the intervention served as a baseline for the main behavioral outcome variable and was later compared with token use during two weeks following the

intervention. Tokens were collected from the vending machines while subjects were completing questionnaires in the initial pre and post test phase of the study and during the follow-up.

Since tokens or condoms could be used for various purposes, subjects were asked if they used tokens to obtain condoms, gave or sold or traded tokens to other people, purchased condoms or used prescriptions to obtain condoms. Questions were asked concerning the frequency of condom use.

Manipulation Check

To assess the fearfulness of the communication, three questions were asked subjects in all conditions to determine if the independent variable was manipulated appropriately (see Appendix D). Subjects were asked the following: 'While watching the videotape I got scared'. 'After seeing the videotape, I am now more afraid of catching AIDS.' 'The videotape made me realize that I could get AIDS'. Scores of 5,4,3,2,1 were assigned to the five response choices for each item (strongly agree, agree, neither agree or disagree, disagree, strongly disagree). Items were scored on a scale ranging from strongly agree (5) to strongly disagree (1). Thus the higher the score, the more effective the manipulation.

One possible confound typically evaluated in fear communications research is the credibility of the source. As Leventhal (1970) indicates when the high fear message is regarded as more credible and more persuasive, alternative hypothesis concerning the influence of credibility should be considered. To assess the influence of the perceived credibility of the communication, subjects in all conditions were asked to rate the credibility of the sources by asking subjects to respond to the following: 'I believe that the people in the beginning of the videotape knew what they were talking about.' I trust what the people in the beginning of the videotape

were saying to me.' Scores of 5,4,3,2,1 were assigned to the five response choices for each item (strongly agree, agree, neither agree or disagree, disagree, strongly disagree). Items were scored on a scale ranging from strongly agree (5) to strongly disagree (1).

Measures of Fear of AIDS

Bouton, Gallaher, Garlinghouse, Leal, Rosenstein, & Young (1987) developed a scale for measuring attitudes toward the fear of AIDS. The scales were developed using undergraduate students at the University of Texas at Austin. Since the reference group used in developing the scales differs from the subject population of the present study, there are serious limitations regarding its use in this population. The following items were used in the current study: 'I wouldn't mind being in the same room with a friend who has AIDS', 'Someone should keep records of all the persons who have the AIDS virus', 'If I found out a friend had AIDS, I would be afraid to hug him or her', 'I would never send my child to a school that has a child who has AIDS', 'I believe the health experts when they say that AIDS can not be transmitted by casual contact', 'I am afraid that I will get AIDS', 'AIDS children should be allowed to attend school', 'I am worried about catching AIDS in a public restroom', 'If I found out a friend or lover had AIDS, I would be afraid to kiss him or her', 'Even if a friend had AIDS, I wouldn't mind touching him or her'. Additional items used to examine general fear of AIDS were selected from a survey conducted by Temoshok, Sweet, & Zich (1987). The questions from that survey used in the present study included the following: 'People with AIDS should not be allowed to handle food in restaurants', 'People in AIDS should be confined in hospitals, against their wills, if necessary', 'Ambulance drivers, police, and fireman should not be expected to assist people whom they believe have AIDS'.

Scores of 1,2,3,4,5 were assigned to the five response choices for each item (strongly agree, agree, neither agree or disagree, disagree, strongly disagree). Positive items were scored on a scale ranging from strongly agree (1) to strongly disagree (5) and negative items were scored in the reverse order. Thus the higher the score, the higher the fear of AIDS. A total score was used in the analysis (see Appendix D).

In order to offset the possibility that a response pattern was not generated by just asking questions concerning fear of AIDS and most importantly to obtain information concerning the relative nature of fear among this sample, a set of parallel questions concerning general fear of illness were included. The following were developed to address these issues: ' I would not mind being in the same room with someone who has a cold', Someone should keep records on people who buy cigarettes', 'If I found out that a friend had a cold, I would be afraid to hug him/her', 'I believe the doctors when they say that someone else's cigarette smoke will hurt me', ' I worry about catching some disease when I use a public toilet', ' People with colds should be confined to a hospital, against their wills, if necessary'. Scores of 1,2,3,4,5 were assigned to the five response choices for each item (strongly agree, agree, neither agree or disagree, disagree, strongly disagree). Positive items were scored on a scale ranging from strongly agree (1) to strongly disagree (5) and negative items were scored in the reverse order. A composite score for these items was used in the analysis.

Psychosocial Assessment

Knowledge about AIDS, perceptions of vulnerability/risk to the disease, beliefs about the efficacy of behavioral change, barriers to behavioral change, and social network characteristics were used in the current study as a means of assessing the effectiveness of the intervention

and to determine the extent these factors are related the the adoption of HIV risk reducing behaviors. Several studies have used these factors, that have largely been derived from the Health Belief Model, as predictor indices thought to be related to observed changes in sexual behavior among white homosexual men in response to AIDS (Emmons, et al. 1986; Joseph, et al.1987).

A questionnaire assessing these psychosocial indices was developed for this study (see Appendix D). Existing questionnaires assessing HBM dimensions related to HIV infection were not used since they were thought to be too difficult to understand and too lengthy. Since the educational level among subjects in the study varied , it was necessary to word questions in a simplistic and clear manner. Each of the HBM dimensions were operationalized by multiple questions either taken directly from existing questionnaires or constructed on the basis of face validity. No measures of these constructs existed for the subject population represented in the current study. Items were selected from existing questionnaires to assess knowledge and perceived vulnerability/risk about AIDS. Knowledge items reflected both the content of the health recommendations presented in the high and low fear arousing conditions as well as other general information concerning AIDS. Perceived efficacy and perceived barriers items were conceptualized with consideration to factors associated with a psychiatric context which could either facilitate or obstruct the adoption of HIV risk reducing behaviors. Assessment of perceptions of social network characteristics were developed using existing questionnaires as a guide to developing items, but again also making reference to subject's living arrangements. Finally, the dimension of general health motivation was included since this dimension seems to increase the predictive validity of

the Health Belief Model and may be a more stable factor influencing the effectiveness of the level of fear-arousal in promoting change (Maiman et al,1977; Jette et al,1981).

Knowledge items were selected from several survey questionnaires currently being used to collect descriptive statistics reflecting changes in knowledge about AIDS over time. The following items were selected for the current study from a questionnaire designed to assess HIV-related beliefs, knowledge, and attitudes among high school students (Center for Disease Control, 1988): 'Can a person get AIDS from holding hands with someone?', 'Can a person get AIDS from from sharing needles used to inject (shoot up) drugs?', 'Can a person get AIDS from using a public toilet?, 'Can you get AIDS from having sex with someone without a condom (rubber)?', "Can you tell if people are infected with the AIDS virus just by looking at them?', 'Can a person who has the AIDS virus infect someone else during sexual intercourse?', ' Can a pregnant woman who has the AIDS virus infect her unborn baby with the virus?', Is there a cure for AIDS infection?', 'Can people **reduce** their chances of becoming infected with the AIDS virus by using condoms during sexual intercourse?, 'Can people **reduce** their chances of becoming infected with the AIDS virus by not having any kind of sexual intercourse with a person who has injected drugs?', 'Is it true that only gay men can get AIDS?', 'Can people **reduce** their chances of becoming infected with the AIDS virus by taking birth control pills?'. With the exception of the last questions referring to AIDS and birth control pills, all of the questions used from the CDC survey also reflect the content of the recommendations provided in the health message intervention for the current study. Additional questions reflecting the content of the recommendations provided in the health message intervention for the

current study include: 'Can contact with semen (cum) from the penis result in AIDS?',' Can a person get AIDS from vaginal fluids in a woman's vagina? Can anyone get AIDS?', and 'Can a person get AIDS from vaginal blood when a woman menstruates?'. Other knowledge items were taken from supplemental questions on the the adult population's knowledge and attitudes about AIDS in the National Health Interview Survey (Dawson & Thornberry, 1988) and do not reflect content contained in the health message recommendations. These items include general information about AIDS: 'Have you ever had your blood tested for infection with the AIDS virus?', 'Have you ever known anyone with AIDS?'. A yes/no/not sure format was used with yes receiving a score of 3, not sure a 2, and no receiving a score of 1. Items were appropriately reversed so that a higher total score used in the analysis reflected more general knowledge of AIDS and HIV risk reduction .

Questions concerning subjective perception of vulnerability/ risk to the disease include two questions : 'What are your chances of getting AIDS?' and 'What are the chances someone you know will get the AIDS virus?'. These questions were used in the study by Emmons et al. 1986 and in the National Health Interview Survey (Dawson & Thornberry, 1988) to assess subjective perception of vulnerability/risk. Scores of 5,4,3,2,1 were assigned to the five response choices for each item (very high, high, medium, low, none). Items were scored on a scale ranging from very high high (5) to none (1). The higher the score would suggest a higher perception of vulnerability/risk.

To determine whether subjects perceive recommended health actions concerning HIV risk reduction as feasible and efficacious, several questions were developed to assess perceived efficacy or benefits of using condoms.

Subjects were asked to rate the degree to which they agree with the following statements: 'Using condoms will reduce my risk of getting AIDS', 'Not having sex with another person will reduce my risk of getting AIDS', 'I intend to use condoms when I have sex with someone'. Scores of 1,2,3,4,5 were assigned to the five response choices for each item (strongly agree, agree, neither agree or disagree, disagree, strongly disagree). Items were scored on a scale ranging from strongly agree (1) to strongly disagree (5). A total score was used in the analysis.

Barriers or perceived obstacles associated with HIV risk reduction may influence whether the particular behavioral recommendations are undertaken. Questions were developed to address potential negative aspects associated with the adoption of HIV risk reducing behaviors. Items reflect perceptions regarding the accessibility of information, access to condoms, skills needed to use condoms, attitudes toward condoms, difficulty controlling sexual impulses, and ability to resist sexual advances. The items developed include: 'Do you know where to get good information about AIDS infection?', 'Do you know how to keep from getting the AIDS virus?', 'When you need a condom, can you get one?', 'Do you have difficulty controlling your sexual impulses?', 'Would you be willing to use a condom if you had a condom when you needed one?', 'Condoms are not worth the bother.', 'A woman who insists that a man wear a condom is being unfair.', 'I just couldn't bring myself to talk to my sex partners about using condoms.', People who use condoms every time are being silly.' 'If a friend tried to talk me into using condoms, I'd probably get angry.' , 'Do you know how to use a condom during sexual intercourse?', 'Do you have the skills to refuse to have sexual intercourse?', 'If you had the blood test for the AIDS virus, would you want to know the results of the test?'. A yes/no format was used. A score

of 1 or 2 were assigned. Items that reflect the presence of a perceived barrier were scored 2, while items suggesting no perceived barrier were scored 1. Total scores for all items were used in the analyses.

Social network characteristics were assessed to determine perceived social norms that might influence behavioral change. The questions developed for the present study took into consideration the setting where subjects live and are aimed at providing some understanding of the extent of communication with others about AIDS and HIV risk reduction. Questions include: 'Have you ever talked about AIDS infection with a friend?', 'Have you ever talked about AIDS infection with your sexual partner?, 'Have you ever talked about AIDS infection with a nurse, doctor, or staff member?', 'Do you think that other people you know are having unprotected sex?', 'Do you think that other people you know are using condoms when they have sex?'., and 'Have you ever known anyone with AIDS?' A yes/no response format was used. A score of 1 or 2 was assigned. Items that reflect a response that suggests social support for HIV risk reduction were scored 2, while items suggesting a lack of support were scored 1. Total scores for all items were used in the analyses.

To assess general health motivation, items were selected from the studies by Jette et al (1981) and Maiman et al (1977) reflecting this dimension of the HBM. Questions included: How concerned are you about your health? (very concerned, somewhat concerned, a little concerned, not concerned at all), How good of a job are you doing in taking care of your health right now? (excellent job, good job, fair job, poor job), How concerned are you about the chance of getting sick? (very concerned, somewhat concerned, a little concerned, not concerned at all). Items were

scored on a scale from 1 (poor job/not concerned at all) to 4 (excellent job/very concerned).

Sociodemographic characteristics including age, sex, race, marital status, educational level, legal status, religion, Axis I to Axis V diagnoses, length of current hospitalization, total time since initial entry into the D.C. Mental Health Commission, level of care, type and dose of medication were obtained from the subject's medical records and used in the subsequent analysis.

Results

The initial analysis was directed at determining whether there were any significant effects associated with the intervention. Multivariate repeated measures analysis of variance (MANOVA) was performed using pre-test, post-test, and two week follow-up measures of knowledge about AIDS, perceived risk/ vulnerability of HIV infection, perceived efficacy of using condoms to reduce risk of HIV infection, perceived barriers to adopting HIV risk reducing behavior, perceptions concerning social network characteristics supportive of adoption of HIV risk reduction, general health motivation, general fear of AIDS, and general fear of illness. Results of the MANOVA revealed a significant treatment condition by time interaction, approximate $F(32,106) = 1.65$, $p = .03$. Repeated measures analyses of variance were subsequently performed separately on each of the psychosocial measures. Results of repeated measures analyses of variance performed separately on each of the psychosocial measures indicated a significant treatment condition by time interaction for knowledge about AIDS and a significant treatment condition by time interaction for general fear of AIDS, approximate $F(4,134) = 2.48$, $p = .047$; approximate $F(4,134) = 4.11$, $p = .004$, respectively. There were no other significant differences over time among groups for any of the other psychosocial measures. Two weeks following the intervention, it appears as if subjects in the low fear condition reported significantly less general fear of AIDS than subjects in the high fear condition and the control. This finding as well as the the role of knowledge about AIDS two weeks after the intervention are examined in

more detail in the section of the results that describes the findings at the follow-up.

Analyses were then directed at establishing whether there were any differences among study participants and non-participants with respect to demographic, clinical characteristics, and dependent measures. The same approach was then used to discern differences among the randomly assigned experimental and control groups and also included baseline psychosocial and behavioral measures. Remaining analyses were then conducted to investigate the proposed hypotheses.

Comparability of Study Participants with Nonparticipants

In order to determine if there was a volunteer bias, analyses were directed toward establishing that the subjects participating in the study were not different from those patients who chose not to participate. Thus the seventy-three subjects who agreed to participate and who had been randomly assigned to one of the three study conditions were compared with the seventy-nine patients who decided not to participate in the study. The seventy-nine nonparticipants included twenty patients who responded to the announcement of the study, but decided to not participate once hearing about it and the fifty-six patients who chose not respond to the announcement.

Comparisons were made on the following demographic variables: age, sex, race, marital status, education, and religion. Oneway analyses of variance for age and years of education revealed no significant differences. Likewise, Kruskal-Wallis oneway analyses revealed no significant differences for sex, race, marital status, or religion (see Table 1).

Insert Table 1

Since subjects in this study were psychiatric patients, additional clinical characteristics were also analyzed. These included DSM-III-R Axis I (clinical syndromes), Axis II (personality disorders), Axis III (physical disorders and conditions), Axis IV (severity of psychosocial stressors), and Axis V (global assessment of functioning, current/past year). Level of care, the unit on which a patient lived, the length of time of the most recent admission, the length of time since the patient first entered the District of Columbia mental health system, legal status, and medication histories were also compared for participants and non-participants. Kruskal-Wallis oneway analyses of variance revealed no significant differences between participants and non-participants for Axis I , Axis II, or Axis III disorders, the unit on which a patient lived, legal status, and type of medication. Likewise, oneway analyses of variance for severity of psychosocial stressors, global assessment of functioning, level of care, the length of time of the most recent admission, the length of time since the patient first entered the District of Columbia mental health system and doses of medication revealed no significant differences. Comparative summaries of these findings are presented in Tables 2 and 3. In light of these analyses, volunteers bias does not appear to have been a problem in this study.

Insert Tables 2 & 3

Comparability of Treatment Groups

Analyses were also directed at determining if there were any significant differences among the high and low fear arousing and control groups for the same demographic and clinical characteristics just described for the participant and nonparticipant groups. Oneway analyses of variance for age and years of education revealed no significant differences. Likewise, Kruskal-Wallis oneway analyses of variance revealed no significant differences for sex, race, marital status, or religion. Kruskal-Wallis oneway analyses of variance also revealed no significant differences among the high, low fear arousing or control groups for Axis I, Axis II, Axis III, the unit on which the subject lived, legal status, and type of medication. Oneway analyses of variance for Axis IV, Axis V, level of care, the length of time of the most recent admission, the length of time since the patient first entered the District of Columbia mental health system and doses of medication also revealed no significant differences (see Tables 4, 5, and 6).

Insert Tables 4, 5, & 6

In addition to examining demographic and clinical characteristics of the sample, additional background information was obtained concerning factors that could indirectly influence the intervention as well as information about behaviors that could place this group at risk for HIV infection. Since twenty-nine percent of the subjects also carried a dual diagnosis of Psychoactive Substance Abuse, it was important to minimize the possibility of drug use on the day of the intervention. Thus prior to the intervention subjects were asked if they had engaged in any drug or alcohol related activities on the morning of the intervention. Seventy-two of the

seventy-three subjects stated that they had not engaged in any drug or alcohol related activities on the morning of the intervention. One subject did not respond to the question. Seventy-one of the subjects stated that they had not engaged in any drug or alcohol related activities the night before and sixty-nine subjects indicated no drug or alcohol related behavior during the day prior to the intervention. Thus, it appears that conducting the study in the early morning may have offset drug and alcohol related activities.

Other information related to HIV risk related behavior indicated that eleven percent of the subjects admitted to injecting illegal drugs and seven percent had shared needles to inject illicit drugs. Only thirty-six percent of the subjects stated that they had changed their sexual practices because of AIDS and thirty-five percent indicated that they had started using condoms because of AIDS. These characteristics were equally distributed across treatment groups. While seventy-two percent of all subjects had been in some type of treatment group that discussed AIDS, only twenty-one percent had ever asked the medical staff for a condom. Thirty-nine percent indicated that they received most of their information about HIV infection from television, twenty-five percent from nursing staff, seventeen percent from newspapers and magazines, ten percent from relatives and friends, and nine percent from physicians. There were no significant differences among the high, low fear arousing or control groups on these items.

Baseline Measures

Analyses of baseline measures were directed at determining if there were any differences among the high fear arousing, low fear arousing, and control groups with respect to token use and self reports of sexual activity during the two week period preceding the interventions. One way analyses

of variance revealed no significant differences among the three groups for the total number of tokens used in the two week baseline as well as the reported number of times a subject engaged in a specific sexual activity during the two weeks prior to the intervention (see Table 7 and 8). There were significant correlations between self reports of the number of times subjects obtained condoms from the condom vending machines and the number of times subjects used condoms during sex over the baseline period, $r(73) = .5$, $p < .001$; $r(73) = .28$, $p < .01$, respectively. Ninety-two percent of the subjects reported that they had not sold or traded condoms to other people .

One way analyses of variance also revealed no significant differences among the three groups on scales assessing knowledge of AIDS, perceived risk/ vulnerability of HIV infection, perceived efficacy of using condoms to reduce risk of HIV infection, perceived barriers to adopting HIV risk reducing behavior, perceptions concerning social network characteristics supportive of adoption of HIV risk reduction, general health motivation, general fear of AIDS, and general fear of illness (see Table 8).

Insert Tables 7 and 8

The results of these analyses indicated that random assignment of subjects had distributed variance in these factors equally across the three experimental conditions and provide support for the pre-test hypothesis which predicted that there would be no differences among the randomly assigned groups on baseline measures. Additional analyses were directed at examining the relationship between baseline token/condom use and baseline self report measures. It was hypothesized that subjects using more

condoms (as measured by tokens) prior to the intervention (base rate) would also indicate more knowledge about AIDS and HIV risk, increased perceived vulnerability/risk of AIDS, increased perceived efficacy of using condoms, decreased perceived barriers to behavioral change, positive perceptions of social network supportive of behavioral change, increased general health motivation and less fear of AIDS. Pearson product-moment correlations were performed on these self report measures and condom/token use. Token use and knowledge about AIDS and HIV risk were modestly correlated, $r(73) = .26$, $p < .01$. Token use was also positively correlated with perceived efficacy of using condoms, $r(73) = .27$, $p < .01$. General health motivation was also positively correlated with token use $r(73) = .20$, $p < .05$. Though there were no other significant correlations among token use and self reports, the direction of the relationships was as hypothesized.

Though not directed at addressing a specific hypotheses, correlations among other dependent measures were performed to examine relationships between knowledge regarding AIDS and perceived risk/ vulnerability of HIV infection, perceived efficacy of using condoms to reduce risk of HIV infection, perceived barriers to adopting HIV risk reducing behavior, perceptions concerning social network characteristics supportive of adoption of HIV risk reduction, general health motivation, general fear of AIDS, and general fear of illness. Negative correlations were found between knowledge about AIDS and perceived barriers to adopting HIV risk reducing behavior, general fear of AIDS, and general fear of illness ; $r(73) = -.42$, $p < .001$, $r(73) = -.26$, $p < .01$, and $r(73) = -.30$, $p < .01$, respectively. Positive associations were found between knowledge about AIDS and perceived risk/ vulnerability of HIV infection , $r(73) = .21$, $p < .05$; perceived efficacy of using condoms to reduce risk of HIV infection, $r(73) = .34$, $p <$

.01; perceptions concerning social network characteristics supportive of adoption of HIV risk reduction, $r(73) = .28$ $p < .01$; and general health motivation, $r(73) = .28$, $p < .01$. Thus, knowledge about AIDS was associated with fewer barriers to reducing risk, less fear of AIDS or illness, and greater personal risk.

Effects of the Film

Following the fifteen-minute intervention, subjects in the high and low fear and control conditions were asked to rate the extent to which they experienced fear while watching the videotapes on five point Likert-type scales. Subjects were asked whether they became scared while watching the videotape (item 1), whether after seeing the videotape they were more afraid of catching AIDS (item 2), and if the videotape made the subject realize that he or she could get AIDS (item 3).

Analyses of variance were performed on each of these three items. Results revealed a significant difference among groups on scales assessing whether after seeing the videotape they were more afraid of catching AIDS, and if the videotape made the subject realize that he or she could get AIDS , $F(2,70) = 4.67$, $p < .01$, $F(2,70) = 11.7$, $p < .001$, respectively. The two AIDS films, then, increased perceived personal risk. There was, however, no significant difference among groups for the item assessing whether they became while scared watching the videotape. To further test whether the high fear condition was more effective than the low fear condition in arousing fear, post-hoc comparisons using Newman-Keuls tests examined differences between the reported means in the high and low fear conditions. Only for item 3, assessing whether the videotape made them realize they could get AIDS, did subjects in the high fear condition report significantly higher scores than did subjects in the low fear arousing condition, $t(70) = -$

2.66, $p < .01$. There were no significant differences between the high and low fear groups on item 2 which assessed whether the videotape made them more afraid of catching AIDS. These results indicated that while both films on AIDS increased perceived risk,the manipulation of fear was unsuccessful in generating fear, but was successful in providing differential information to subjects of the risk of HIV infection (see figure 1).

Subjects in all three conditions were also asked to rate the credibility of the sources presenting the threat appeal since this could confound results. Analyses of variance revealed no significant differences among subjects ratings the credibility of the sources across conditions, suggesting that this did not affect the fear manipulation.

Insert Figure 1

Post-test Measures

It was hypothesized that the high fear-arousing condition would be more effective than the low-fear-arousing condition in decreasing general fear of AIDS, increasing perceived vulnerability/risk of HIV infection, increasing perceived efficacy of using condoms, decreasing perceived barriers to behavioral change and positively influencing perceptions of social network characteristics. Repeated measures analyses of variance performed separately on each of these measures failed to confirm these hypotheses. However, repeated measures analyses of variance performed on general fear of illness revealed a significant difference for reported general fear of illness over time, $F(2,70)=4.82$, $p<.01$ (see figure 2). Subjects in the high fear condition reported more fear on the post-test than

on the pretest assessment, while low fear and control subjects showed the opposite pattern.

Insert Figure 2

It was also anticipated that the intervention would result in greater short-term retention of information presented about AIDS and HIV infection among subjects in the high and the low fear-arousing conditions than among subjects in the control condition and that the level of fear arousal would not result in a significant difference in short-term retention of information presented about AIDS and HIV infection between subjects in the high and low fear-arousing conditions immediately following the intervention. Repeated measures analysis of variance performed on knowledge about AIDS showed a significant difference for reported knowledge about AIDS following the intervention, $F(2,70)=4.16$, $p<.02$ (see figure 3). Both intervention groups reported greater short-term retention than did controls.

Insert Figure 3

In order to more closely examine the relationship between the experimental conditions and changes in general fear of illness and the experimental conditions and changes in knowledge about AIDS over time a series of multiple regression analyses were performed. The pre-test measures of general fear of illness and knowledge about AIDS were each used as predictors for each post-test measure taken immediately following the intervention. Then oneway analyses of variance were performed on the residuals generated by each regression equation. These analyses examined

changes in general fear of illness and changes in knowledge about AIDS at the post-test that resulted from the experimental manipulation of fear and were irrespective of baseline measures of general fear of illness and knowledge about AIDS. Post-hoc comparisons among the three conditions were subsequently performed to explore sources of the effect.

As anticipated the pre-test measure of general fear of illness was a significant predictor of general fear of illness following the intervention, $F(1,71)=21.44$, $p<.001$. Analysis of variance revealed significant differences among groups when the general fear of illness residual was used as the dependent measure, $F(2,70)=3.14$, $p<.05$. Post-hoc comparisons using Newman-Keuls tests to test the means among the three experimental conditions, again using the general fear of illness residual as the dependent measure, indicated that subjects in the high fear condition reported significantly higher levels of general fear of illness following the intervention compared with subjects in the low fear and control condition respectively, $t(70)=.95$, $p<.05$; $t(70)=0.98$, $p<.05$. There were no significant differences between the low fear condition and the control condition. These findings further strengthen the results that were reported earlier using MANOVA.

Similarly, the pre-test measure of knowledge about AIDS was a significant predictor of knowledge about AIDS following the intervention, $F(1,71)=88.02$, $p<.001$. Analysis of variance failed to reveal significant differences among groups when the knowledge about AIDS residual was used as the dependent measure, $F(2,70)=3.14$, $p<.06$. However, post-hoc comparisons using Newman-Keuls tests were performed on the analysis of variance to clarify the hypothesis concerning the relationship between knowledge about AIDS and the experimental manipulation. As expected there

were no significant differences between the high and low fear condition with respect to measures of knowledge about AIDS following the intervention. However, the results indicated that subjects in the low fear condition reported significantly higher increases in knowledge about AIDS following the intervention when compared with subjects in the control condition, $t(70)=2.30$, $p < .05$, and that the difference between the high and control condition only approached significance $t(70)=1.68$, $p < .09$. The results of this analysis give some support for the hypothesis concerning the effects of the experimental manipulation and changes in knowledge.

Pearson product-moment correlations were performed on doses of neuroleptics and knowledge regarding AIDS residuals, perceived risk/ vulnerability of HIV infection residuals, perceived efficacy of using condoms to reduce risk of HIV infection residuals, perceived barriers to adopting HIV risk reducing behavior residuals, perceptions concerning social network characteristics supportive of adoption of HIV risk reduction residuals, general health motivation residuals, general fear of AIDS residuals, and general fear of illness residuals. Results showed a significant negative correlation between knowledge about AIDS and dose of neuroleptic among all groups, $r(60) = -.21$, $p < .05$. Intra-correlations for each condition, however, indicated that only the correlation within the control condition reached significance, $r(17) = -.44$, $p < .04$. These analyses indicated that use of neuroleptics did not affect primary dependent variables in this study.

Follow-up Measures

Repeated measures analysis of variance was performed using baseline token use and token use following the intervention as outcome measures. This analysis was directed at determining if the high fear arousing

condition was more effective than the low fear condition or the control condition in increasing condom use as measured by token use. Though the means reflecting change in token use from baseline to the two week follow-up were in the anticipated direction, the results were not significant. Subjects in the high fear condition showed an increase in condom use while those in the low fear condition and control groups did not, but differences were not large enough to be statistically significant (see figure 4).

Insert Figure 4

Repeated measures analyses of variance were also performed on individual items assessing the types and frequencies of sexual behavior to determine if there were any differences among the three groups at the two week follow-up. Results did not provide any support for the hypotheses which predicted decreases on self reports of sexual activity that would decrease the risk of HIV infection. For example, there were no decreases in the reported number of anonymous sexual contacts among groups. Likewise, there were no reported increases in behaviors such the use of condoms among groups during the two weeks following the intervention which would have decreased risk of HIV infection.

To examine more closely the relationship between experimental condition and changes in the psychosocial measures over time a series of multiple regression analyses were performed. Pre-test and post-test measures were used as predictors for each two week follow-up measure. Oneway analyses of variance were then performed on the residuals generated by each regression equation. These analyses were directed at

examining changes that resulted from the experimental manipulation irrespective of baseline and post-test measures.

Separate multiple regression equations were generated using pre-test and post-test measures for knowledge about AIDS and general fear of AIDS as predictors for each of these measures taken at the two week follow-up. Pre-test and post-test measures of knowledge about AIDS and general fear of AIDS were significant predictors of knowledge about AIDS and general fear of AIDS at the two week follow-up, $F(1,68)=28.6$, $p< .001$; $F(1,68)=69.2$ $p< .001$, respectively (see figures 5 & 6). Analyses of variance, however, revealed no significant differences among groups when knowledge of AIDS residuals were used as dependent measures. When general fear of AIDS residuals were used as the dependent measure, results did reveal a significant difference among groups over time, $F(2,67)=7.99$, $p< .001$. Post-hoc comparisons using Newman-Keuls tests indicated that at the follow-up the subjects in the low fear condition reported significantly less general fear of AIDS than subjects in the high fear condition and the control condition, $t(67)=2.83$, $p< .006$; $t(67)=-3.83$, $p< .001$, respectively.

Insert Figures 5 & 6

To examine the hypothesis concerning associations between condom use as measured by tokens with changes in general fear of illness, general fear of AIDS, knowledge about AIDS and HIV risk, perceived vulnerability/risk of AIDS, perceived efficacy of using condoms, perceived barriers to behavioral change, perceptions of social network characteristics, and general health motivation, pearson product-moment correlations were computed between residuals generated from separate

multiple regression equations on each of these measures using baseline and post-test measures to predict follow-up measures and the residual generated from a multiple regression equation using baseline token use to predict token use after the intervention. Residuals were used since the residuals more accurately reflect changes over time in these measures while at the same time also control for baseline measures. The only association that approached significance was a positive correlation between change in token use and general health motivation, $r(70)=.20$, $p<.05$.

Finally, to assess the remaining hypotheses which proposed an interaction between initial level of fear of AIDS and treatment condition on token use, a series of multiple regression equations were generated. Effect coding for treatment condition and a treatment condition interaction with initial level of fear of AIDS term were created and successively entered into a series of equations. Effect coding rather than dummy coding was used so that vectors representing the main effects and interactions were mutually orthogonal (Kerlinger & Pedhazur, 1973). The F ratio between the two regression equations was calculated to determine if the interaction between treatment condition and initial level of fear was significant. The regression equation containing all the variables was compared with the equation containing only the initial general level of fear and the treatment condition variables. The calculated F was .5458 and consequently not significant. Thus initial level of fear and treatment condition did not interact in such a way to result in differential effects among conditions on token use.

Additional Analyses

The manipulation of fear in this study was not effective. High and low fear condition subjects did not indicate different levels of fear after the film conditions. There are a number of other ways in which fear could have been manipulated. The topic of AIDS as part of a fear communication differs considerably from the topics used in previous research. The consequences of HIV infection are more frightening than the consequences of poor dental hygiene and may even be more frightening than the consequences of smoking. However, the most important difference between the present study and previous research is that the subjects that participated in this study were psychiatric patients. This may be an appropriate start in searching for alternative explanations.

Substance use is being recognized and diagnosed among psychiatric patients more often than in the past. Since this group is often considered more sexually active, additional analyses were directed at determining if these subjects were different from those subjects without a substance abuse disorder diagnosis. Though there were comparable numbers of subjects with both psychiatric and substance abuse diagnoses across all conditions this may have obscured differences within the total sample that could have contributed to the findings regarding the hypotheses that have been investigated. To examine this issue a series of repeated measures analyses of variance were performed using only subjects with both psychiatric and substance abuse diagnoses. The same analyses were then performed using subjects with just a psychiatric diagnosis with respect to high fear, low fear, and control condition. Finally, analyses were directed at determining differences between subjects with both psychiatric and

substance abuse and subjects with just a psychiatric diagnosis irrespective of condition.

The patterns that emerged were interesting in that analyses of subjects with both psychiatric and substance abuse diagnosis paralleled the findings discused in the previous sections. The reduction in general fear of AIDS at the follow-up was significant. There was a significant treatment condition by time interaction for general fear of AIDS, approximate $F(4,32)=8.01$, $p<.001$. Similarly, there was a significant treatment condition by time interaction for knowledge about AIDS immediately following the intervention, approximate $F(2,19)=3.99$, $p<.04$. The means reflecting the scores on which these findings are based are again strikingly similar to the means previously reported in the examination of the major hypotheses (see figures 7 and 8). However, none of the items assessing the manipulation of fear were significant nor were items assessing the credibility of the sources of information significant.

Insert Figures 7 & 8

When only examining subjects with just a psychiatric diagnosis, the opposite pattern emerged. There were no significant increases in knowledge about AIDS for either the high or low fear when compared with the control group. Nor were there subsequent reductions in general fear of AIDS. While there was no significant difference for the item assessing whether the videotape made them scared, the subjects in the high and low fear groups did report significantly higher scores than the control subjects on the item asking whether or not the videotape made them more afraid of catching

AIDS, $F(2,51) = 3.7$, $p<.03$. Likewise, the subjects in the high and low fear groups did report significantly higher scores than the control subjects on the item asking whether or not the videotape made them realize they could catch AIDS, $F(2,51) = 11.2$, $p<.0001$.

Finally, comparisons of subjects with both psychiatric and substance abuse and subjects with just a psychiatric diagnosis irrespective of condition revealed a significant treatment condition by time interaction for token use that approached significance, approximate $F(1,69)=8.01$, $p<.055$. Furthermore, multiple regression analysis and subsequent analysis of variance using the token residuals yielded a significant difference for token use between subjects with both psychiatric and substance abuse and subjects with just a psychiatric diagnosis, $F(1,69)=4.6$, $p<.04$. Subjects with both psychiatric and substance abuse disorder significantly increased their use of tokens over time irrespective of the fear condition. No differences were found on the items assessing whether they became scared while watching the videotape (item 1), whether after seeing the videotape they were more afraid of catching AIDS (item 2), and if the videotape made the subject realize that he or she could get AIDS (item 3). Subjects,however, with both psychiatric and substance abuse reported higher ratings concerning the credibility of the sources presenting the threat appeal, $F(1,71)=5.4$, $p<.05$.

The results of these additional analyses draw attention to the heterogeneity of the sample and begin to raise questions concerning unique characteristics of this population and the methods used to intervene to reduce risk of HIV infection or for that matter any intervention directed at promoting health behavior among the chronically psychiatrically impaired.

Discussion

This study was designed to examine the role of fear as part of a health message developed to reduce the risk of HIV infection among young adult chronic psychiatric patients. A limitation of studies designed to examine HIV risk reduction has been the lack of behavioral outcome measures. Sexual activity is not as easily investigated as other less private behavior. Consequently, research in this area has been forced to rely almost exclusively upon self report measures of sexual activity. To attempt to offset this limitation, subjects in the present study were provided access to tokens to obtain condoms from condom vending machines that had been installed on the units where they live. Token use data were collected over a two week baseline period. Following the two week baseline, a pretest was administered which included self-reports of sexual activity over the two week baseline period, pre-test measures of knowledge regarding AIDS, pretest measures of various health belief variables including the perceived risk/ vulnerability of HIV infection, perceived efficacy of using condoms to reduce risk of HIV infection, perceived barriers to adopting HIV risk reducing behavior, perceptions concerning social network characteristics supportive of adoption of HIV risk reduction, and general health motivation. General fear of AIDS and general fear of illness were also assessed.

The interventions designed to manipulate the level of fear associated with a health message concerning information about HIV risk reduction (high and low fear condition) were then administered and followed by post-test measures of the same measures taken during the pre-test. An appropriate control was included. Two weeks later, a follow-up was conducted. The

same measures used during the pretest were again administered to assess changes over a longer period of time. Tokens for condoms continued to be distributed during the two weeks after the intervention until the follow-up.

This study may be the only study that has directly examined the effect of fear arousal in a health communication among a psychiatric population. The present study was undertaken with the notion that fear arousal among young chronic adult psychiatric patients would operate similarly as it would among normals; namely high fear would more be more effective in modifying behavior and health beliefs. The findings in the present study add to the existing array of conflicting results in the fear communications literature and raises interesting issues in light of the original study on the effects of fear-arousing communications by Janis and Feshbach (1953). Janis and Feshbach speculated that high fear might have adverse consequences resulting from defensive reactions. Their assumptions were derived from clinical observations of patient's reactions to psychiatric treatment. It was thought that high fear arousal would create emotional interference that would prevent a person from being influenced by anxiety-arousing topics. The results of the Janis and Feshbach study suggested that low fear was more effective than high fear in changing attitudes and behavior. Similarly, Leventhal et al. (1966) found that subjects who perceived themselves to be highly vulnerable to disease responded more favorably to less threatening communications.

The increase in knowledge about AIDS immediately following the intervention and subsequent reduction in fear of AIDS measured at the follow-up among subjects in the low fear condition in the present study provide some limited support for the notion that low fear arousing communications may be more effective for psychiatric populations. Future

studies might include both normal and psychiatric populations to further examine these issues. For example, fear of AIDS seems to be decreasing among the general public and the level of knowledge about AIDS among the general public has significantly increased over the past couple of years. Fear of AIDS may not interfere as much with learning among non-psychiatric groups as it seems to among the sample in the present study. Further studies with a non-psychiatric sample would be able to determine the role of these factors in further assessing the effectiveness of a high fear communication.

While the results of the present study suggest that low fear may be more effective among chronic adult psychiatric patients, the findings do not provide conclusive evidence of this. For example, it could be argued that the manipulation of fear arousal was ineffective. Only one of the questions developed to assess the effectiveness of the manipulation reached significance, and it was not directly associated with fear. This question, which asked if the videotape made the subject realize they could get AIDS, was, however, the intended effect associated with the manipulation of fear. The manipulation had been operationalized with respect to the emphasis on the consequences of HIV infection with the idea of making the subject more aware of their vulnerability of HIV infection. Thus, while the manipulation did not increase fear, the manipulation was effective in increasing perceived risk. Replications of the present study would need to include additional items designed specifically at tapping awareness of one's vulnerability to HIV infection. Obviously, it should be noted that there could be more effective ways of manipulating fear arousal.

The intervention was not successful in decreasing general fear of AIDS immediately following the intervention or for that matter altering health

beliefs related to HIV risk reduction for subjects in either the high or low fear arousing condition. It should be noted that while there were no decreases in general fear of AIDS there were also no increases in general fear of AIDS at any stage in the study. Fear of AIDS was, in general, high across all groups from the beginning. The measure of general fear of AIDS was designed to assess the degree to which the subject held irrational information concerning AIDS and HIV infection. Though the intervention may have not immediately reduced fear, the intervention did not contribute to general fear of AIDS. Interestingly, subjects in the high fear condition did report an increase in general fear of illness. While there are similarities between the general fear of illness scale and the general fear of AIDS scales, there were also differences. Items on the general fear of illness scale only paralleled items on the general fear of AIDS scale. For example, instead of asking whether the subject was afraid of hugging someone with AIDS, the general fear of illness item substituted a cold for AIDS. The health recommendations portion of the health message distinguished between catching a cold from someone's sneeze and not catching AIDS from someone's sneeze. It appears as if the high fear condition may have resulted in an increase in fear associated with general illness with subjects in the high fear condition responding with more fear to items such as catching a cold from hugging someone, which is not as irrationally based as fear of AIDS. This finding again may provide some indirect indication that the high fear condition was indeed more intensely focused as originally conceived. On the other hand the manipulation of fear may have been rendered ineffective since the level of general fear was already so high from the beginning.

The low fear condition did result in a significant increase in knowledge about AIDS when compared with the control group. There were no significant differences between the high fear and low fear conditions on measures of knowledge about AIDS. Furthermore, the increase in knowledge for the high fear condition only approached significance when compared with the control group. Most fear communications studies indicate that the learning of factual material is not affected by the level of fear to which the subject is exposed (Higbee, 1969). As in the present study, fear communications studies have found no differences between the level of knowledge of subjects in the high and low fear groups immediately after the fear arousing communication. Many of these studies often relied upon inadequate control groups. Control groups often simply received nothing with no attempt to control for other factors that might influence the outcome. Furthermore, when comparisons between groups were made there was no control for the effects of baseline levels of knowledge upon subsequent changes. These methodological problems may underscore the role of knowledge and retention of information in a health communication.

Though many of the fear communication studies may have been flawed, it is difficult to extrapolate from those studies to findings in the current study. The sample used in the present study is not at all comparable to subjects used in most studies of fear communications. It may be that the significant retention in knowledge among subjects in the low fear condition and lack of gains in knowledge among subjects in the high fear condition is more related to the unique characteristics of the sample. Likewise, the failure of the manipulation to increase fear could be related to characteristics of the sample. There was a significant negative correlation between doses of neuroleptics and changes in knowledge following the

intervention. Even though this association was not the same across all groups, this correlation may not only reflect an association with level of medication such as sedating side-effects, but may as well reflect associations with other variables such as the severity of psychiatric illness, limited cognitive abilities and poor judgement, chronicity of psychiatric illness, impulsivity or some other factor relevant to this population which could be interfering with retention of knowledge about AIDS. It should be noted that although there was a significant increase in knowledge among subjects in the low fear condition this increase was not large and appeared to dissipate over time as reflected in measures of knowledge at the follow-up. The influence of these factors could be examined in future studies by including a group of normals who had similar demographic characteristics as the psychiatric group.

The additional set of analyses that were directed at investigating whether there was something unique about the sample, specifically whether substance abuse played a role in the present study, clearly suggest that there are probably many factors specific to the chronically psychiatrically impaired that need to be considered. Indeed, the heterogeneity of this group remains to be more thoroughly investigated in and of itself. Subjects in the high and low fear conditions with only a psychiatric diagnoses did report being more afraid of catching AIDS after seeing the videotape than subjects in the control condition with only a psychiatric diagnoses. However, there were no significant differences on this measure between subjects in the high and low fear conditions with only a psychiatric diagnoses which suggests that it was not possible to differentiate high fear from low fear. This may reflect the inadequacy of the manipulation measure or again some specific characteristic unique to the sample that only carried a psychiatric

diagnoses. Furthermore, there were no changes on any of the behavioral or psychosocial measures over time among this group. The pattern was the opposite when only examining substance abusers and the changes with respect to the dependent measures were similar to the overall findings of the study. Finally, when simply comparing the substance abusers with a psychiatric diagnosis to subjects with only a psychiatric diagnosis irrespective of condition on the various manipulation checks, the substance abusers with a psychiatric diagnosis reported scores reflecting they felt that the sources of the communications were more credible than subjects with only a psychiatric diagnosis. This again draws attention to the heterogeneity of this sample and suggests that aspects of a communication such as fear arousal and source credibility may operate in different ways with different subgroups among the chronically psychiatrically impaired.

The results of the two week follow-up indicated that subjects in the low fear condition reported significantly less general fear of AIDS when compared to the high fear or control subjects. As previously indicated there were no further gains in knowledge observed among subjects in the low fear condition. There were also no further changes on any of the other measures. This finding suggests that the low fear condition was associated with decreases in general fear of AIDS, and though only speculative, that the increase in knowledge among low fear subjects immediately following the intervention may have indirectly contributed to the decrease in the general fear of AIDS at the follow-up. This finding draws attention to comments by Temoshok & Zich (1987) who indicated that public health education efforts should have the dual purpose of decreasing fear of AIDS, while emphasizing accurate information. The presentation of accurate information may not be

sufficient since extreme or irrational fear may make it difficult to use the information.

The negative associations found between pre-test measures of fear of AIDS and knowledge regarding AIDS indicate that interventions aimed at this population may need to primarily focus on reducing extreme or irrational fear of AIDS. While the high fear condition did not exacerbate general fear of AIDS, it was ineffective in reducing general fear or modifying health beliefs or altering behavior. It may be that the sample in the present study is at a stage that makes it difficult for them to respond to the high fear manipulation. Only until general fear of AIDS is reduced could new information be utilized. Pre-existing levels of general fear of AIDS were high across all groups at the beginning of the study. The subsequent increase in perceived risk/vulnerability among subjects in the high fear condition may have resulted in the their inability to make use of the information presented during the intervention. Joseph et al. (1987) found a negative relationship between very high levels of perceived risk and changes in HIV risk promoting behavior. The high fear manipulation in the present study may have been ineffective due to high pre-existing levels of general fear of AIDS.

A variation on the current study would be to initially intervene using only the low fear and control conditions then after a period of time expose half of the low fear condition subjects to the high fear condition and the other half to a repeated exposure of the low fear condition. If the reduction in fear from the low fear condition was replicated, it would be possible to investigate whether this reduction in general fear of AIDS would have eventually led to changes in health beliefs and behaviors related to HIV reduction. Likewise, it could be determined whether subjects

demonstrating decreases in general fear of AIDS would be more responsive to the the high fear intervention. This would also serve as a more direct test for interactions between general fear of AIDS and treatment condition.

The time frame of the current study makes it difficult to draw definitive conclusions about long-term gains from interventions like this one. Clearly, the relationships among knowledge, fear, health beliefs, and behavior are complex and not as stable as desired. The one-month period during which subjects received tokens could have reflected a number of independently occurring conditions. Further, there were no measures assessing the subjects response to the installation of the condom vending machines. It is possible that many subjects viewed the vending machines as an invasion of privacy or sought information when they were installed (two weeks before the study data were initially collected). It is also likely that the attitudes and behaviors among staff regarding the vending machines could have indirectly influenced token use among subjects. Assessment of these factors, an extended baseline, and implementation of an ongoing HIV risk reduction prevention program could clarify some of these issues as well as relationships among knowledge, fear of AIDS, health beliefs and behavior.

It should also be noted that the tentative conclusions drawn from this study are based on self-reports. This is especially problematic given that questionnaires to determine the types and frequencies of sexual activity were used rather than individual interviews and the questionnaires were administered in a group setting. Questionnaires about sexual behavior may be more biased in favor of more educated subjects than are individual interviews (Jensen, Witcher, & Upton, 1987). Furthermore, the scales designed to assess various health belief dimensions as well as general fear

and knowledge of AIDS, while on the surface providing face validity, need to be administered to larger samples of chronically psychiatrically impaired to define the validity and reliability of the instrument.

In sum, it was hypothesized that the high fear condition would be more effective than the low fear condition in promoting HIV risk reduction. More specifically it was thought that the subjects exposed to the high fear condition would use more tokens to obtain condoms and report decreases in such behaviors as the number of anonymous sexual contacts or increases in condom use, all indicating the adoption of HIV risk reducing behavior. Furthermore, it was expected that the high fear condition would be more effective in modifying various health beliefs linked to the adoption of HIV risk reducing behaviors. Overall, the results of the study failed to demonstrate that high fear arousal was more effective than low fear arousal. In fact, the results tend to suggest that among young chronic adult psychiatric patients, low fear arousal may be more effective than high fear arousal in increasing knowledge about the threat of HIV infection. Changes in knowledge about HIV risk reduction measured immediately after the intervention in turn were followed by subsequent reductions in general fear of AIDS measured at the follow-up among subjects in the low fear condition. There was however no evidence to suggest that either health communication was more effective in producing behavioral changes as measured by token use over the four week period or changes in health beliefs regarding AIDS.

Conclusion

This study investigated the effects of a high and low fear health communication about HIV risk reduction among a group of young adult chronic psychiatric patients. The majority of the subjects had a diagnosis of schizophrenia, thus limiting the ability to generalize the results to other groups of chronic psychiatric patients. Carmen and Brady (1990) note the heterogeneity of the chronically mentally ill and suggest different patterns of sexual behavior among various diagnostic groups. For example, irrespective of high, low fear or control condition, subjects in the present study who carried both a psychiatric diagnoses and a substance abuse diagnoses used more tokens to obtain condoms than subjects with only a psychiatric diagnoses. Substances abusers in the current study may be involved in more behaviorally oriented treatments, whereas the non-substance abusers receive other types of treatment. Thus, substance abusers with a psychiatric diagnoses might be more inclined to respond to a behavioral intervention. Future studies clearly need to address both specific and general issues related to the heterogeneity of this population. Most studies have only provided anecdotal evidence that chronic psychiatric patients can make changes in HIV risk behaviors (Carmen et al 1990; Baer et al,1990). The current study, though providing no direct evidence of specific behavioral changes as a result of the interventions, did provide information that should be useful in planning future strategies to reduce risk of HIV infection among young adult chronic psychiatric patients.

Though this study was not aimed at establishing any risk indices for the sample, the descriptive aspects of the study do provide information

reflecting risk of not only HIV infection, but infection with other sexually transmitted diseases. Severely emotionally disturbed populations are at risk for exposure to the HIV virus not only because poor reality testing but also because of many of the demographic features found in this group have also been associated with the distribution of AIDS cases in the U.S.. Milazzo-Sayre, MacAskill, & Manderscheid, (1987) indicate that blacks are over-represented in their use of psychiatric services and many present with drug-related problems. Seventy-four percent of the sample in the present study were black and twenty-nine percent the subjects also had an additional Axis I diagnosis of psychoactive substance abuse. These characteristics have been strongly associated with increased risk of HIV infection.

According to Selik, Castro,and Pappaioanou (1988), of the 64,464 cases of AIDS reported to the CDC from June 1,1981 to July 4,1988, most (60%) occurred among non-Hispanic white; however, blacks and Hispanics accounted for 70% of the cases in heterosexual men, 70% of those in women, and 75% of those in children. Selik, et al analyzed 65,133 (99.8%) cases in which racial/ethnic group was specified, and found that U.S. AIDS patients were disproportionately black (26%) and Hispanic (13%), compared with the proportions of blacks (12%) and Hispanics (6%) in the U.S. population Bureau of Census,1980. Heterosexual men and women constituted the majority of AIDS cases in U.S. blacks and residents of Puerto Rico. Among men with AIDS, the proportion who were heterosexual intravenous-drug abusers (IVDA) or whose female sex partners were IVDA was 34% for U.S. black men,35% for U.S. Hispanic men, and 52% for men in Puerto Rico compared with 5%,2%, and 10% for U.S. white, Asian/PI and American Indian. Among women with AIDS, the proportion who were IVDA or whose male sex

partners were IVDA was 74% and 80% for U.S. black and Hispanic women respectively, and 83% for women in Puerto Rico, compared with 52%, 31%, and 50% for for U.S. white, Asian/PI and American Indian women ,respectively. Of all U.S. AIDS cases associated with IVDA by heterosexuals, 54% occurred among blacks and 26% among Hispanics. The risk of HIV infection for psychiatric patients in the D. C. Commission of Mental Health who live in a large predominantly black inner city may even be higher than that of the black community in general.

While the level of reported sexual activity in the present study was not high, it is worth considering whether subjects under-reported sexual activities. It is well established that many surveys designed to collect information on sexual behaviors suffer because people are reluctant to reveal the nature and extent of their activities especially if they feel that their behavior departs significantly from what is considered normal sexual behavior (AIDS, Sexual Behavior, and Intravenous Drug Use, 1989). Likewise, it is possible that drug activity is higher than subjects in the present study reported and more common than psychiatrists had diagnosed. Carmen et al (1990) note that for many of the chronically mentally ill psychosexual development has been fraught with childhood sexual abuse which establishes patterns that in adulthood continue to be characterized as impulsive, exploitative, and coercive. In some respects, this current study not only provided patients with needed information about AIDS, but also provided anecdotal evidence that subjects in the study appreciated being asked questions that they often remarked had never been asked by health professionals. Clearly, studies designed to examine HIV risk among the chronically psychiatrically impaired may have the beneficial effect of acknowledging to patients that health professionals are overcoming their

own stereotypes of mentally ill patients as a nonsexual or sexually neutered group (Carmen et al, 1990).

Mental health professionals need to become more involved in the assessment of patients' risk of HIV infection which should be included as part of the standard psychiatric evaluation. This requires that the professional not only have an understanding of HIV infection, but also have the skills to effectively and sensitively approach topics related to sexual behavior and substance abuse. This assessment process can not only provide needed information that will help the patient, but also initiates an educational process that needs to be included in the continued treatment of the chronic psychiatric patient. Not only do clinicians need to be skilled in this process, but the researcher likewise needs to be aware of the same issues and needs to begin developing more effective intervention strategies and research methods that will benefit the patient and the clinician who continues to struggle with the question of what approaches will be useful in reducing risk of HIV infection among the young adult chronic psychiatric patient.

The major finding from this study was that while subjects were reasonably well informed about AIDS, there was considerable fear of AIDS. This finding should not be viewed as being particularly unique to the chronically mentally ill patient since early in the epidemic, fear of AIDS was considerably high throughout the United States. The low fear condition was effective in reducing subjects fear of AIDS as well as increasing their knowledge about AIDS. The high fear condition seems to have created a sense of excessive vulnerability, possibly resulting in resistance to the health message and subjects feeling more helpless over controlling the threat (Leventhal,1970). Control over threat is clearly a dimension that

should be assessed among this group since helplessness and lack of control often contribute to poor compliance (Janis, 1984).

Beck and Frankel (1981) note that fear communication studies suggest that subjects low in self-esteem often respond negatively to strong threat appeals with reduced motivation to adopt health promoting behaviors. The positive findings associated with the low fear condition in the current study lead to speculation that the low fear condition by decreasing fear of AIDS did not exacerbate a sense of hopelessness among these subjects and possibly increased perceptions of their being able to more effectively cope with the threat of HIV infection.

It is important that one not underestimate the value of simultaneously reducing general fear of AIDS and providing accurate information to the young adult chronic psychiatric patient. For example, knowledge regarding AIDS in this sample suggested that subjects were reasonably well informed about AIDS. Seventy-five percent of the sample knew that a person could get AIDS from injecting illegal drugs and seventy percent indicated that it was not just gay men that could get AIDS. At the same time, seventy-six percent strongly agreed or agreed with the statement that records should be kept on persons with AIDS compared to only twenty-one percent who felt records should be kept on persons who smoked cigarettes. Seventy-two percent indicated that they had been in some type of formal treatment group that discussed AIDS, and while medical staff can provide condoms to patients, only twenty-one percent ever asked staff for a condom. Furthermore, the results of the the present study suggest that it may be possible to modify or reduce general fear of AIDS among this group. In sum, the results of the current study may serve as the start for future studies.

It is also important to note that although AIDS is an issue that has been somewhat glamorized because of media coverage and its advent as a "new disease", AIDS prevention is only one small facet of the greater problem of physical illness among the mentally ill. It has been recognized that psychiatric populations suffer far greater than expected mortality than the general population from nearly all causes of death. Diabetes, heart disease, cancer, and endocrine ailments are all diseases that may go unnoticed and untreated in this group. Not only may morbidity and mortality be increased, but the interplay between psychiatric and physical disease may increase the severity of both. Particularly in the disease targeted by this study, AIDS, there are many subtle neurological findings that would most likely be confounded by a diagnosis of schizophrenia or by heavy doses of neuroleptics. The same statement, however, could be made for all of the diseases above. Although AIDS is very dramatic, heart disease, diabetes, and cancer are presumably much more common and thus would ultimately be expected to impact more heavily on the psychiatric population. It is therefore imperative that mental health professionals at all levels stay attuned to the physical health of their clients. A preventive health measure such as AIDS education is very important, but so are blood pressure screenings, dental care, cholesterol measurements, mammography, and other routine health maintenance measures that are currently available to the population at large. Just as these measures have been cost effective to the entire public, they are enormously valuable to psychiatric patients. The level of suffering and magnitude of health costs to psychiatric institutions, to private insurers and to general tax funds will be significantly lowered if these needs are addressed. This paper has discussed approaches to just one preventive measure in this specialized

group. Much remains to be done in assessing health risks and possible intervention measures for diseases that are much more common.

TABLE 1

PARTICIPANTS AND NONPARTICIPANTS DEMOGRAPHIC CHARACTERISTICS

N=149	PARTICIPANTS 73	NONPARTICIPANTS 79
AGE (Mean)	40 years	43 years
SEX (% Males)	67%	64%
RACE		
Black	74%	68%
White	23%	29%
Hispanic & Asian	3%	3%
MARITAL STATUS		
Never Married	78%	67%
Married	5%	7%
Divorced, Separated, Widowed	17%	26%
EDUCATION (Mean Years)	11.6 years	11.4 years
RELIGION		
Protestant	49%	64%
Catholic	20%	15%
Other	19%	7%
None	12%	14%

TABLE 2

DSM-III-R MULTIAXIAL DIAGNOSES OF PARTICIPANTS AND NONPARTICIPANTS

	PARTICIPANTS	NONPARTICIPANTS
N=149	73	79
AXIS I		
Schizophrenia (%)	63%	62%
Depressive Disorder (%)	4%	10%
Bipolar Disorder (%)	14%	14%
Other (%)	19%	14%
ADDITIONAL AXIS I		
Psychoactive Substance Abuse(%)	29%	32%
AXIS II		
Personality Disorder	38%	31%
No Diagnosis	40%	51%
Diagnosis Deferred	22%	15%
AXIS III		
Chronic Conditions	20%	26%
None or Non-chronic	80%	74%
AXIS IV		
Severity of Psychosocial Stressors (Mean)	3.6	3.4
AXIS V		
GAF Scale (Current)	47	42
GAF Scale (Past year)	44	42

TABLE 3

CLINICAL CHARACTERISTICS OF PARTICIPANTS AND NONPARTICIPANTS

	PARTICIPANTS	NONPARTICIPANTS
N=149	73	79
LEVEL OF CARE		
Level 1 to Level 4 (%)	57%	61%
(Independent Living)		
Level 5 to Level 6 (%)	26%	20%
(Rehabilitative Environment)		
Level 7 to Level 9 (%)	17%	19%
(Intensive Psychiatric Treatment)		
YEARS OF MOST RECENT ADMISSION (Mean)	3.1 years	3.4 years
YEARS SINCE ENTERED D.C. MENTAL HEALTH	4.8 years	5.7 years
LEGAL STATUS		
Voluntary (%)	55%	59%
Committed (%)	26%	20%
Outpatient Committed (%)	8%	13%
Guilty by Reason of Insanity (%)	4%	7%
Other	10%	4%

PSYCHOTROPIC MEDICATION		
None (%)	12%	3%
Neuroleptic (%)	56%	72%
Antidepressant (%)	1%	5%
Lithium (%)	1%	3%
Neuroleptic & Lithium (%)	16%	12%
Neuroleptic & Antidepressant (%)	10%	1%
Other (Lithium & Antidepressant, Prozac)	4%	4%
Dose of neuroleptic (mean dose in thorazine equivalents)	1678 mg.	2052 mg.

TABLE 4

SUBJECT DEMOGRAPHIC CHARACTERISTICS

EXPERIMENTAL GROUP	HIGH FEAR	LOW FEAR	CONTROL
N=73	28	24	21
AGE (Mean)	37.5 years	41.4 years	42 years
SEX (% Males)	60%	58%	76%
RACE			
Black	82%	58%	80%
White	18%	38%	15%
Hispanic & Asian	0%	4%	5%
MARITAL STATUS			
Never Married	80%	81%	76%
Married	0%	5%	10%
Divorced, Separated, Widowed	20%	14%	10%
EDUCATION (Mean Years)	10.8 years	11.7 years	12.6 years
RELIGION			
Protestant	50%	29%	65%
Catholic	15%	47%	0%
Other	15%	18%	25%
None	20%	6%	10%

TABLE 5

DSM-III-R MULTIAXIAL DIAGNOSES OF SUBJECTS

EXPERIMENTAL GROUP	HIGH FEAR	LOW FEAR	CONTROL
N=73	28	24	21
AXIS I			
Schizophrenia (%)	68%	70%	57%
Depressive Disorder (%)	4%	0%	5%
Bipolar Disorder (%)	14%	13%	14%
Other (%)	14%	17%	24%
ADDITIONAL AXIS I			
Psychoactive Substance Abuse(%)	21%	29%	38%
AXIS II			
Personality Disorder	40%	29%	28%
No Diagnosis	32%	46%	43%
Diagnosis Deferred	18%	25%	29%
AXIS III			
Chronic Conditions	21%	17%	20%
None or Non-chronic	79%	83%	80%
AXIS IV			
Severity of Psychosocial Stressors (Mean)	3.2	3.4	3.8
AXIS V			
GAF Scale (Current)	44	49	50
GAF Scale (Past year)	43	46	41

TABLE 6

OTHER SUBJECT CLINICAL CHARACTERISTICS

EXPERIMENTAL GROUP	HIGH FEAR	LOW FEAR	CONTROL
N=73	28	24	21
LEVEL OF CARE			
Level 1 to Level 4 (%) (Independent Living)	52%	54%	69%
Level 5 to Level 6 (%) (Rehabilitative Environment)	24%	30%	23%
Level 7 to Level 9 (%) (Intensive Psychiatric Treatment)	24%	16%	8%
YEARS OF MOST RECENT ADMISSION(Mean)	3.9 years	2.2 years	3.0 years
YEARS SINCE ENTERED D.C. MENTAL HEALTH	5.5 years	3.5 years	4.3 years
LEGAL STATUS			
Voluntary (%)	54%	58%	52%
Committed (%)	25%	20%	24%
Outpatient Committed (%)	10%	8%	5%
Guilty by Reason of Insanity (%)	7%	4%	10%
Other	4%	8%	4%

PSYCHOTROPIC MEDICATION			
None (%)	4%	20%	14%
Neuroleptic (%)	75%	42%	48%
Antidepressant (%)	0%	4%	0%
Lithium (%)	0%	0%	5%
Neuroleptic & Lithium (%)	14%	17%	19%
Neuroleptic & Antidepressant (%)	7%	9%	14%
Other (Lithium & Antidepressant, Prozac)	0%	8%	0%
DOSE of NEUROLEPTIC (mean dose in thorazine equivalents)	1786 mg.	2223 mg.	2311 mg.

TABLE 7

FREQUENCY OF TYPES OF SEXUAL BEHAVIOR OVER TWO WEEKS (N=73)

SEXUAL ACTIVITY(%)	NUMBER OF TIMES					
	0	1	2	3	4	5
Number of sexual contacts	73%	11%	8%	1%	3%	4%
Non-anonymous sexual contacts	79%	4%	10%	3%	3%	1%
Anonymous sexual contacts	89%	4%	4%	1%	1%	0%
Passive oral sex	96%	0%	1%	0%	0%	3%
Active oral sex	90%	6%	0%	2%	0%	2%
Vaginal receptive	80%	4%	12%	4%	0%	0%
Vaginal active	77%	3%	5%	4%	4%	7%
Anal active	90%	3%	0%	3%	0%	4%
Anal passive	96%	2%	1%	1%	0%	0%
Used condoms	80%	6%	4%	3%	1%	6%
Condoms/ward machines	72%	15%	6%	4%	2%	1%
Condoms/pharmacy	95%	1%	3%	1%	0%	0%
Condoms/prescribed	92%	3%	1%	3%	1%	0%
Paid for sex	89%	6%	3%	1%	1%	0%
Received pay for sex	93%	3%	0%	1%	3%	0%

TABLE 8

BASELINE TOKEN USE AND PSYCHOSOSOCIAL SELF REPORT MEASURES

EXPERIMENTAL GROUP		HIGH FEAR	LOW FEAR	CONTROL
N=73		28	24	21
MEASURE	RANGE	MEAN		
Token use	0-13	1.10	1.08	1.47
Knowledge about AIDS	18-54	43.9	42.6	45.6
Perceived risk of AIDS	2-10	5.32	4.29	4.85
Perceived efficacy of behavioral change	3-15	11.3	11.5	11.3
Perceived barriers to behavioral change	13-26	16.8	15.6	15.5
Social network characteristics supportive of behavioral change	6-12	10.1	9.91	9.99
General health motivation	3-12	10.4	10.0	9.52
General fear of AIDS	13-65	40.1	41.7	37.4
General fear of illness	6-30	17	19	18

Figure 1: Response to five manipulation checks (N=73)

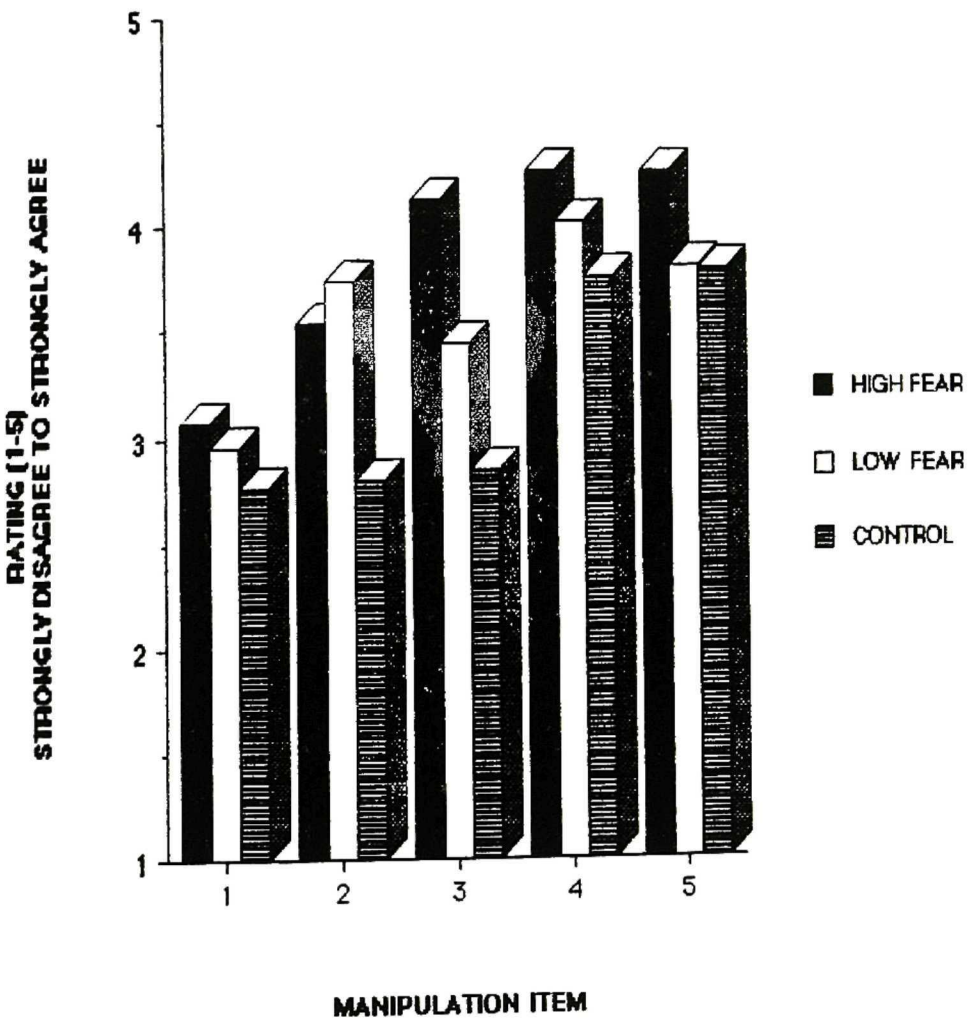


Figure2: General Fear of Illness (N=73)

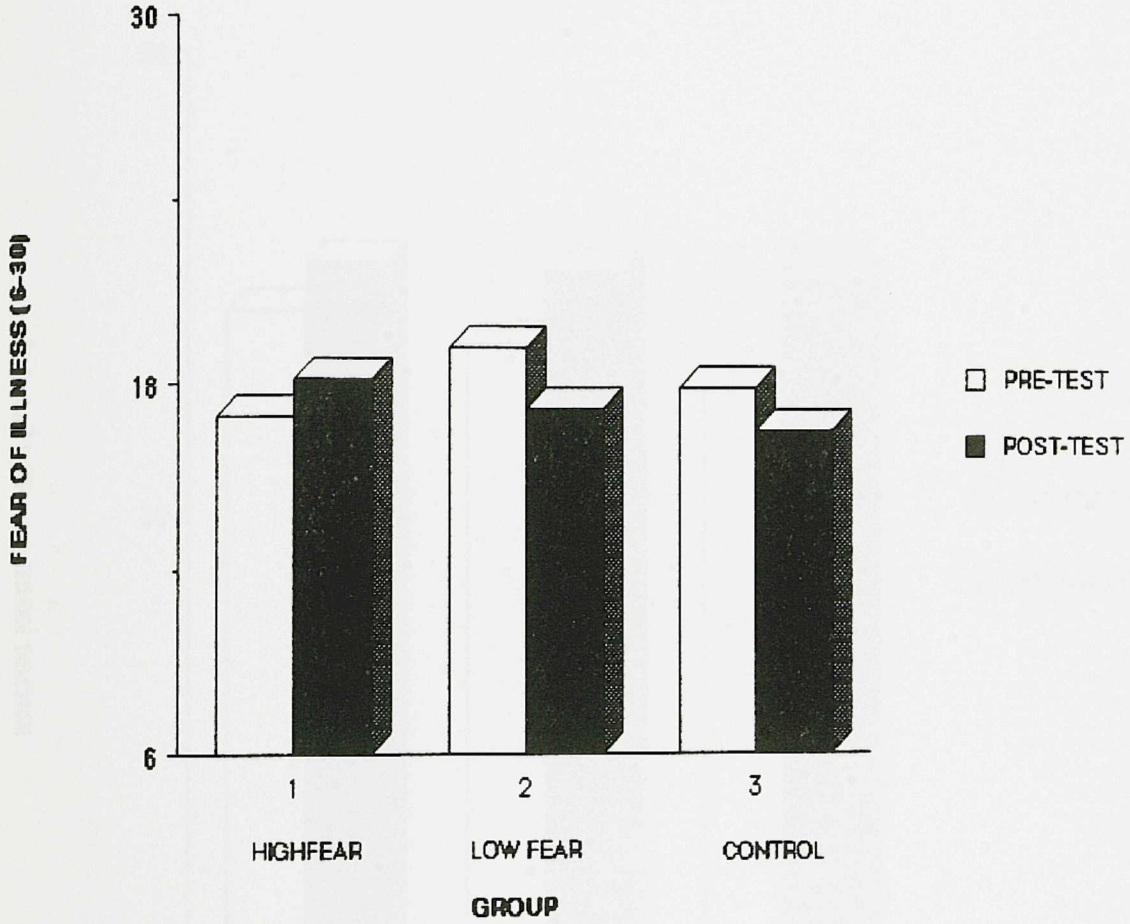


Figure 3: Knowledge regarding AIDS (N=73)

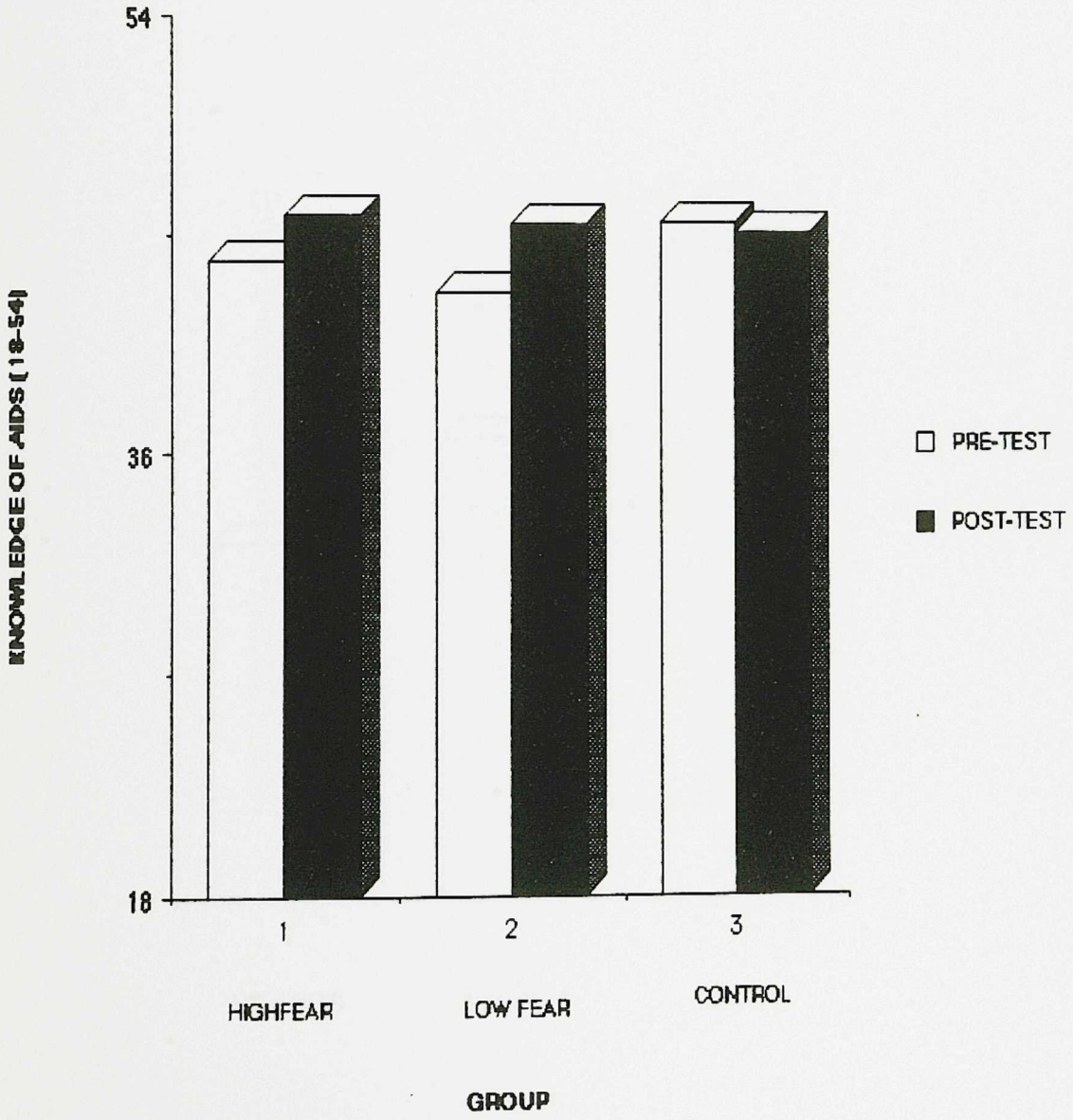


FIGURE 4 : TOKEN USE (N=70)

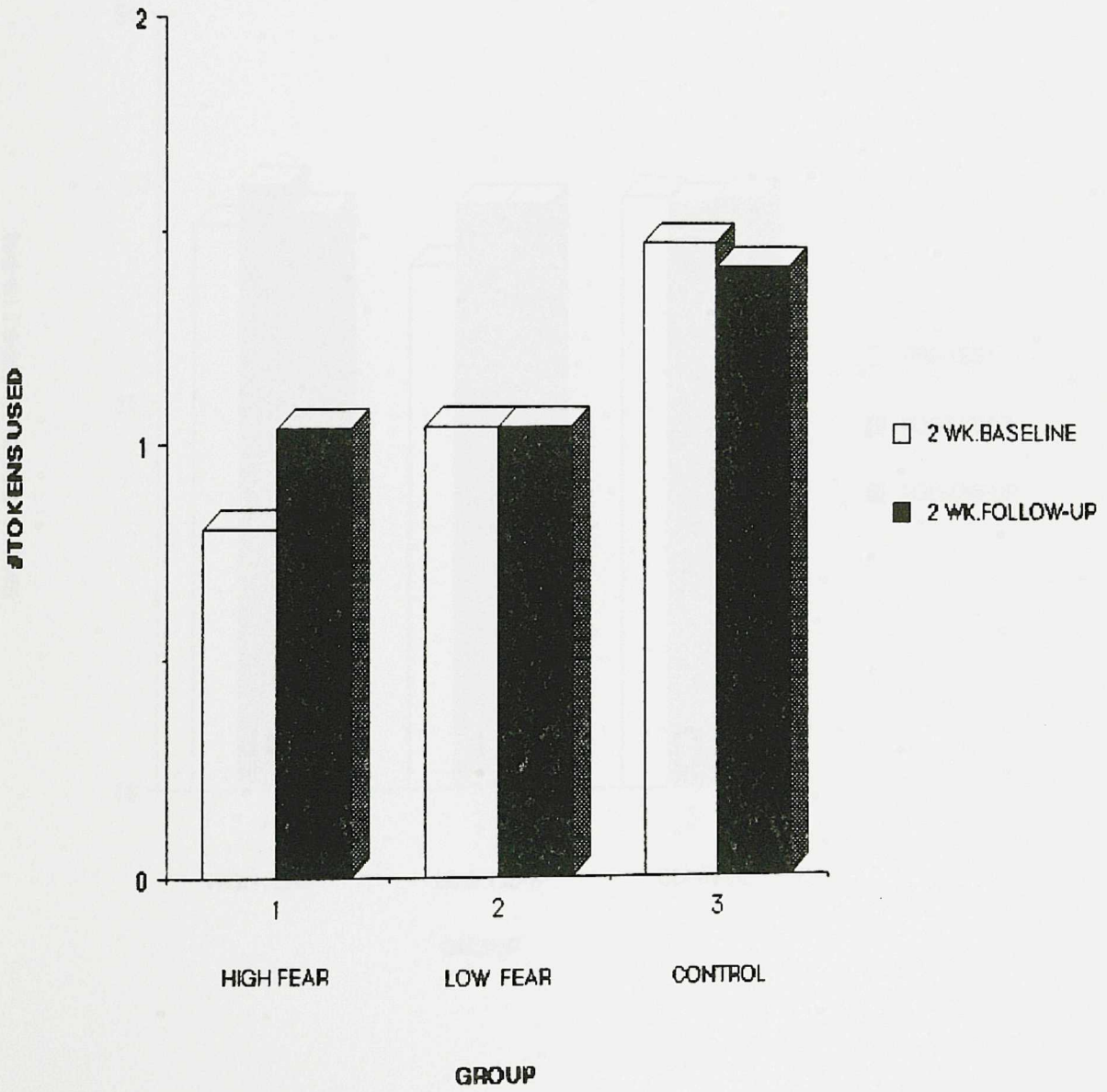


FIGURE 5: Knowledge regarding AIDS (N=70)

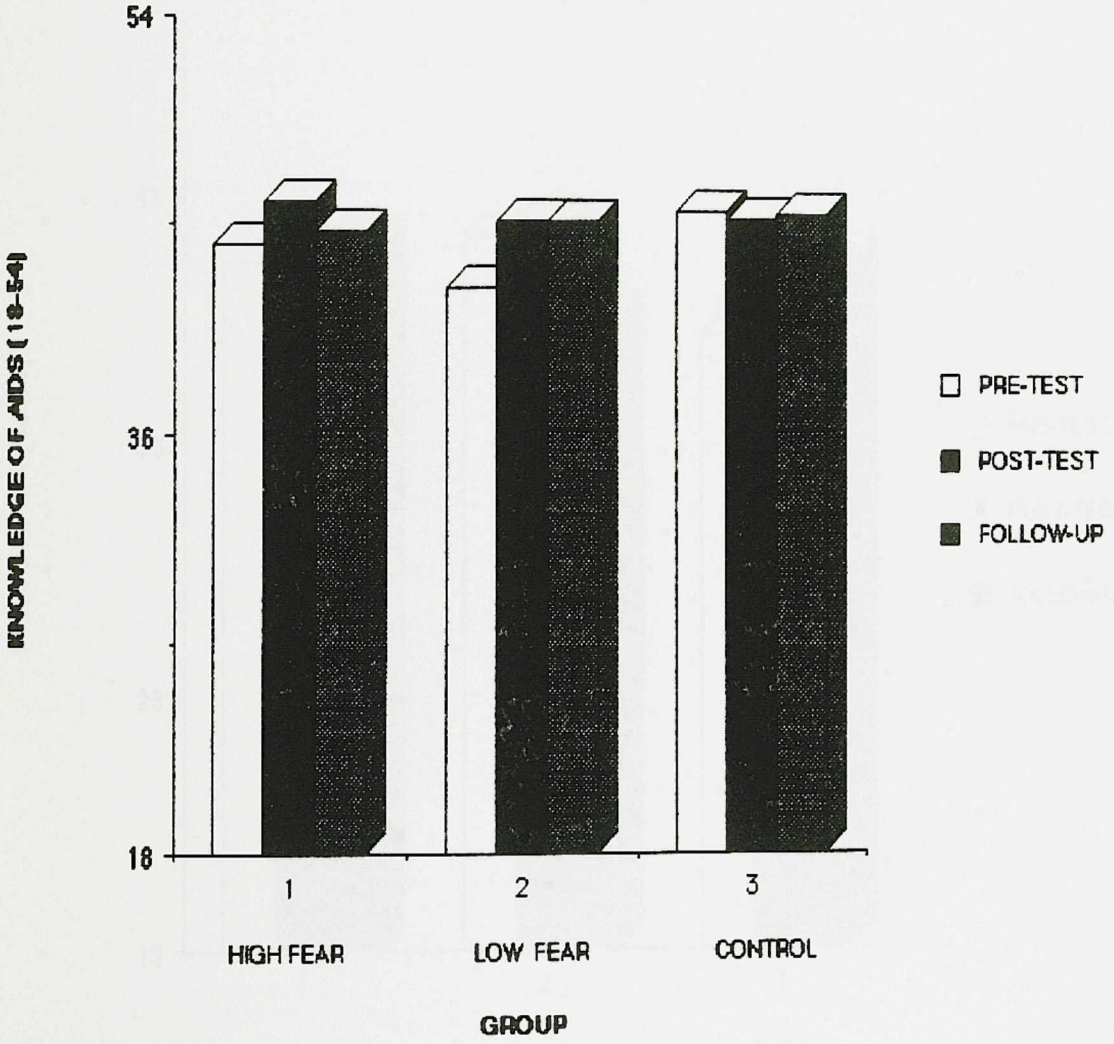


Figure 6: General Fear of AIDS (N=70)

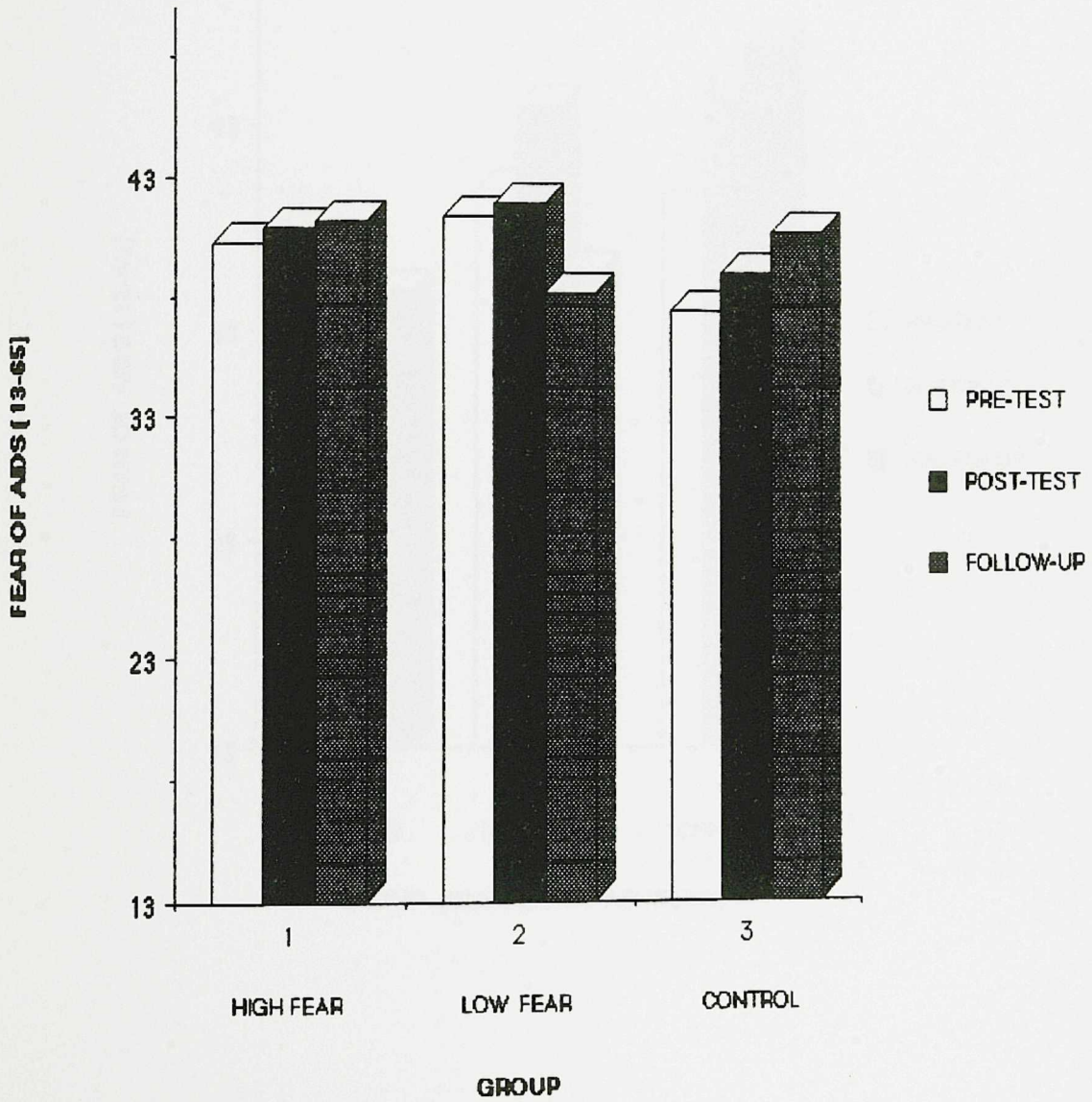


Figure 7: General Fear of AIDS (N=19)
Substance Abusers

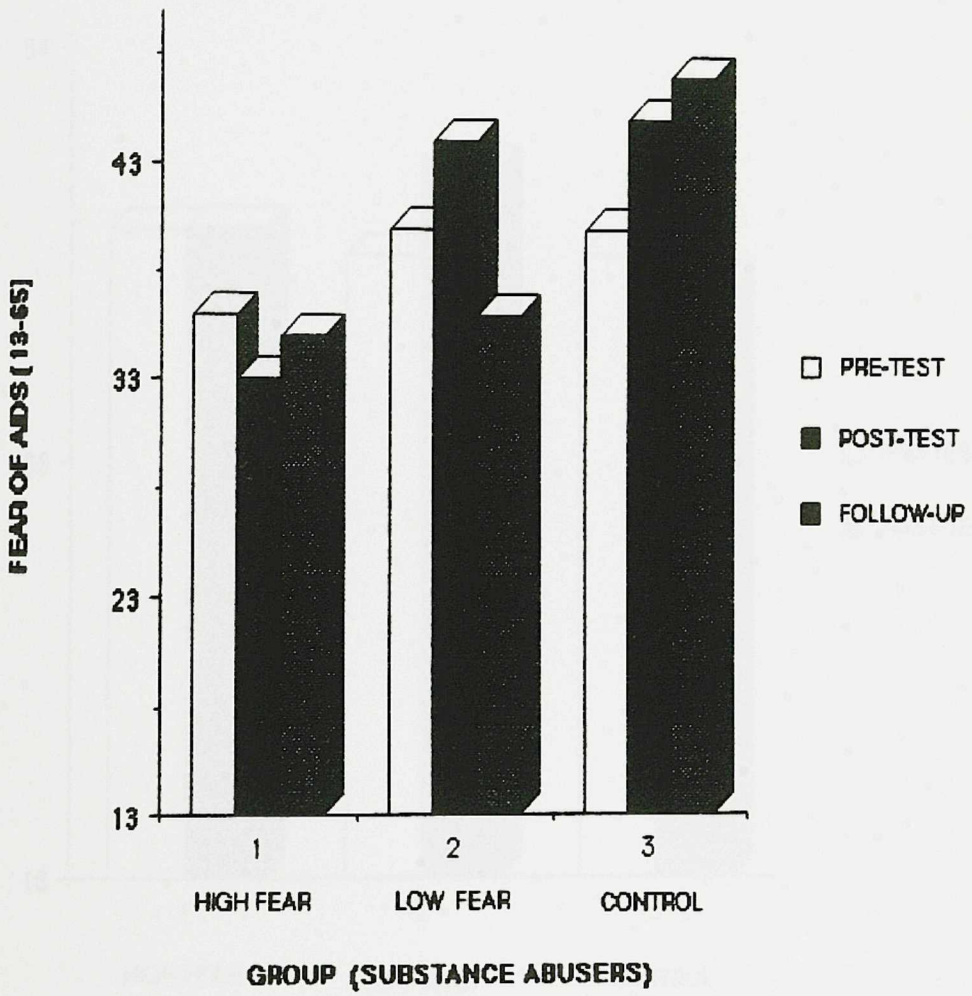
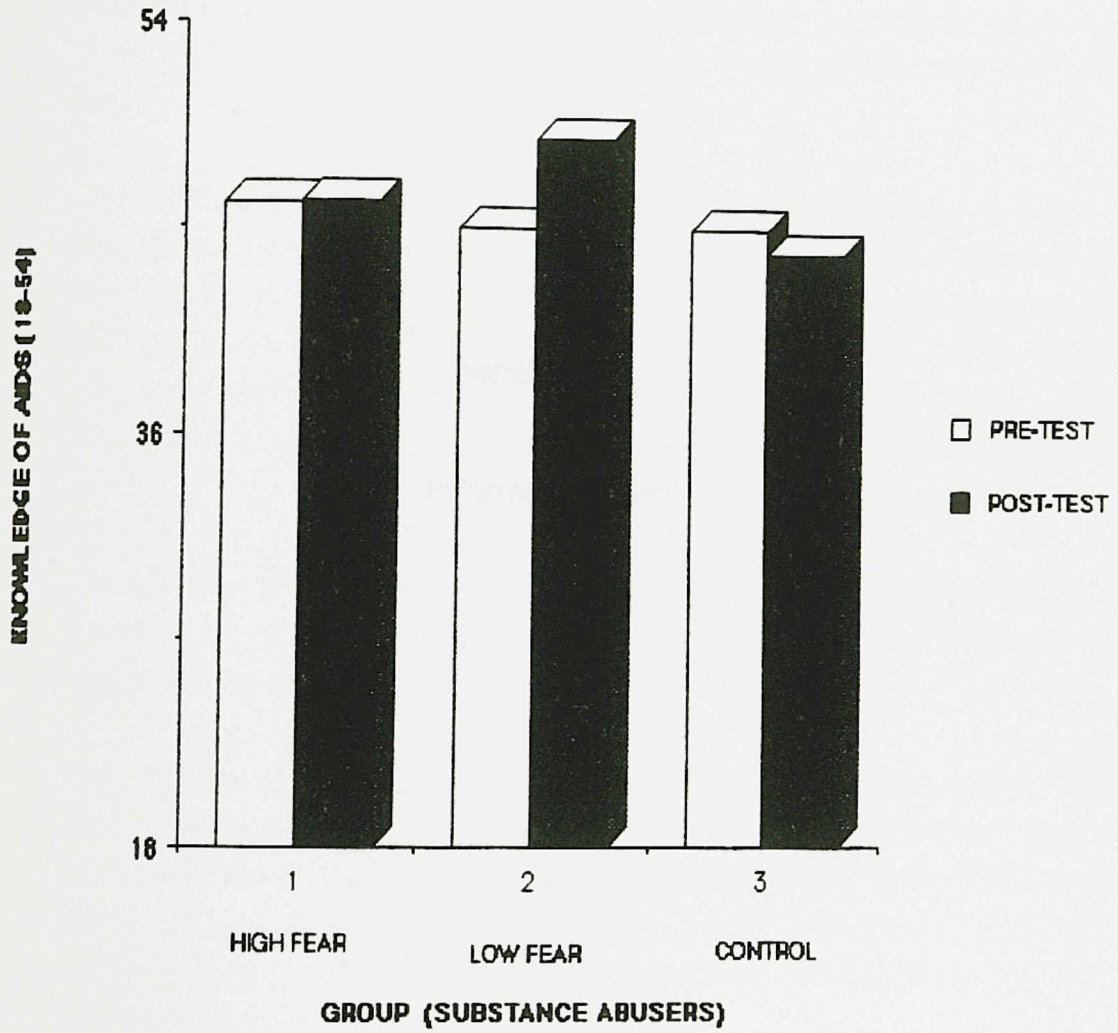


Figure 8: Knowledge regarding AIDS (N=19)
Substance Abusers



Appendix A

Informed Consent

CONSENT FORM FOR RESEARCH PARTICIPATION

Please Read Carefully

Title of Study: AIDS Information Study

I have been asked to participate in the above study conducted by Mr. McKinnon and others assisting him. The study involves research. The purpose of the study is to determine what people know about AIDS. The study will provide information on ways to help a person improve their health.

I understand that during this study I will be asked to complete some questionnaires and view a videotape. Some of the information that will be needed can be obtained from the medical charts. This information includes background information like race and educational level. I understand that I am giving permission for only qualified persons involved in this study to look at my medical chart and only for information that is needed for the study.

The study will be completed in two sessions. The first session will last about an two hours. The next session will be in two weeks and also last about an hour and a half.

The procedures involved in this study should not entail any risk of harm . I understand that I will also be asked some personal questions. I understand that I may benefit directly from this study because I will also be provided with information about health concerns. Other anticipated benefits from participation in the study include improved communication skills and understanding of important health issues.

I understand that a report may be made of the results of the study and that this information will be available to me upon request. I understand that all of the information collected is confidential and will be examined only by qualified members involved in this research project. Furthermore, my name will only be connected to code numbers so that my identity is not revealed.

I understand that all information about me will be kept strictly confidential and if a report is published or made available in any way, my name will not be used and my identity will be protected.

I understand that my decision to participate in this study is entirely voluntary and that I may withdraw or discontinue participation without any penalty. My decision to participate or not to participate in this study will not affect my treatment or use of services at this institution.

I understand that I may contact William McKinnon at Barton Hall (373-7171) if I have any questions about this research. I also understand that the Institutional Review Board of the CMHS has approved this study and that if I have any complaints or questions about research subject's rights, I may contact that Board (724-4379).

I have read this form or had its contents explained to me. My questions about this study have been answered. By signing this form, I agree to participate in this study.

_____ _____

Subject's Signature Date

_____ _____

Witness to consent procedure Date

Appendix B

Study Script

STUDY SCRIPT

NOTES TO INSTRUCTORS ARE IN PARENTHESES

Pre-test Session

Hi, my name is .

We would like to invite you to participate in a research project designed to help you learn some things about health matters. This study involves two sessions. The first session will be today. The final session will be two weeks from today. We will ask you to complete questionnaires in each session and watch a videotape during the first session.

(Pass out folders for the pre-test)

You each have a folder. The first thing we will do is go over the informed consent. (THE INFORMED CONSENT WILL BE ON THE LEFT SIDE OF THE FOLDER. UNDERNEATH THE CONSENT WILL BE THE PRE-TEST. ON THE RIGHT HAND SIDE OF THE FOLDER IS THE POST-TEST).

Here is a pen. Before signing the form, I will read the form aloud. (READ INFORMED CONSENT). Please sign this form and if you have any questions please ask. (MAKE SURE THAT THE SUBJECT HAS A CHANCE TO ASK ANY QUESTIONS ABOUT THE CONSENT FORM BEFORE PROCEEDING.)

(HAVE EACH PERSON SIGN THE CONSENT. WALK AROUND AND MAKE SURE THE NAME IS ON THE CONSENT FORM.)

Ask subjects to put the informed consent back into the folder ON THE LEFT HAND SIDE and take out the questionnaire.

Before we start, I will go over an example so you know what is being asked. It is important that you answer all the questions. I WILL READ EACH QUESTION ALOUD. I WANT EACH QUESTION ANSWERED BEFORE WE GO TO THE

NEXT QUESTION. (IT IS NECESSARY THAT EVERY ITEM IS RESPONDED TO, WALK AROUND THE ROOM WHILE THEY ARE COMPLETING EACH QUESTION TO MAKE SURE. WHEN YOU KNOW THAT THE ITEM IS ANSWERED ONLY THEN GO TO THE NEXT QUESTION). If you do not understand something, please ask or raise your hand and I will assist you. The information you are giving today will be helpful to many people.

The first questions are about your health. In the middle of the page you should see Part 1 written. I will be reading all the questions aloud. If I go to fast, raise your hand and let me know. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 2. The following questions ask about things you have done in the past two weeks. I know it may be hard to remember things over the past two weeks, but try your best. For example, the answers to the questions ask about the number of times you have engaged in particular behaviors. Circle the answer that applies to you. All of these questions ask about sexual behavior. The questions may be embarrassing, but it is very important to be as honest as possible. (Remind subject's to let you know if they do not understand or are confused. READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 3.

Next I want you to answer these questions. Circle yes if you think the answer is yes, if you think the answer is no, circle no. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 4

Next I want you to answer this question. The question asks how often you do something. You can circle always, sometimes, rarely or never. Let's look at the example first. For example, if I were asked how often do you smoke, would you circle always....sometimes....rarely.... or never. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Now turn to Part 5.

These questions what to know how much do you agree with the following statements. For example, how much would you agree with the statement 'I think I should get help looking for a job' ?. If you strongly agree then circle strongly agree. If you on the other hand you have no strong opinion, but you do agree that you should get help looking for a job, circle agree. If it does not matter one way or the other, circle neither agree or disagree. If you disagree, circle disagree, but if you strongly disagree with the statement, circle strongly disagree. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 6.

Next I want you to answer these questions. Circle yes if you think the answer is yes, if you think the answer is no, circle no (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 7

Next I want you to answer these questions. For example, ' What are you chances of getting a cold when you walk in the rain?' If you think that your chances are very high, then circle very high. If you think that your chances are high, then circle high. If you think that your chances are medium, then circle medium, If you think that your chances are low, then circle low. If you think that there is no chance of getting a cold, then circle none. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 8.

These questions what to know how much do you agree with the following statements. For example, REMEMBER I HAD ASKED EARLIER how much would you agree with the statement 'I think I should get help looking for a job' ?. If you strongly agree then circle strongly agree. If you on the other hand you have no strong opinion, but you do agree that you should get help looking for a job, circle agree. If it does not matter one way or the other, circle neither agree or disagree. If you disagree, circle disagree, but if you

strongly disagree with the statement, circle strongly disagree. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 9.

Next I want you to answer these questions. Circle yes if you think the answer is yes, if you think the answer is no, then circle no. Occasionally you may not be sure about the answer. When you are not sure, circle not sure. Finally, this next question deals with where you get most of your information about AIDS. Just circle one of the options. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE).

Turn to Part 10.

Finally I want to find out where you get most of your information about AIDS. (READ ALL THE QUESTIONS ALOUD, BEGINNING WITH THE NUMBER OF THE QUESTION AND FOR EACH QUESTION READ ALL THE CHOICES ALOUD AND REMIND SUBJECTS TO CIRCLE ONLY ONE RESPONSE) .

Thank you for answering all of these questions. Before I show you the videotape, PLEASE PUT THE QUESTIONNAIRE BACK INTO THE FOLDER. CLOSE THE FOLDER AND WATCH THIS VIDEOTAPE. I would really appreciate it if you would not talk to each other about the questions you just answered.

I am now going to start the videotape. (Start the videotape and show the tape without stopping. WHILE THEY WATCH THE VIDEOTAPE, MAKE SURE THAT THEY ARE NOT PLAYING WITH THE FOLDER)

Post-test Session

I have some more questions to ask you. Let's start with Part 1.

These first ones are about the videotape you just saw. These questions what to know how much do you agree with the following statements? For example, how much would you agree with the statement 'I learned something today?' If you strongly agree then circle strongly agree. If you on the other hand you have no strong opinion, but you do agree that you have learned something, circle agree. If it does not matter one way or the other, circle neither agree or disagree. If you disagree, circle disagree, but if you strongly disagree with the statement, circle strongly disagree.

(Subjects were asked the same questions given in the pretest with the exception of questions concerning sexual and activity and the general information questions. The same procedures were followed by the instructors during the post-test)

Thank you very much for your participation. I know this might be difficult, but it is very important not to discuss what you saw today or the questions you answered with other people. This is important so that we can better understand you and others who participate in this study. You have all been very helpful and by participating in the study you are doing something important for me, for yourselves, and especially for other people. Thanks

again. We will be getting back in touch with all of you in about two weeks. We are looking forward to seeing you again.

Follow-up Session

Hi. My name is .

I am involved in the study that you participated in about two weeks ago. You might remember answering some questions and seeing a videotape. I am here today to ask you some more questions. I know it will take some time, but when we finish today we can talk about questions you might have. Let's get started.

(Pass out folders for the two week follow-up)

(The same procedures used in the pretest were followed in the follow-up with the exception of providing informed consent since that had already been done.)

THANK YOU VERY MUCH FOR PARTICIPATING. SOME OF YOU MAY HAVE SOME QUESTIONS. LET'S TAKE SOME TIME TO TALK ABOUT THE STUDY.

Appendix C

Intervention Script

Intervention Scripts for the High , Low Fear Arousing and Control Conditions

Preceding each of the three conditions, Dr. Robert Washington, District of Columbia Commissioner of Mental Health Services, provided a breif introducton.

Introduction Dr. Washington

Hello. I am Dr. Robert Washington.

I am the District of Columbia Commissioner of Mental Health Services.

I am speaking to you out of concern for your health.

What you are about to see and hear contains important information that can affect your health.

Please pay attention.

There are important things to be learned

I. The following was used as the threat appeal for the high fear condition.

A. Physician:

I am ,a physician in the D.C. Mental Health Commission .

I have seen what happens to people who are dying of AIDS.

I know how sick AIDS will make you.

When you get AIDS, eventually you die.

Many people are dying of AIDS.

You may even know someone with AIDS.

Some people think AIDS is a disease only white gay men get, but more and more black people are dying every day from AIDS.

Black men (pause) and black women (pause) and black babies (pause) are dying from AIDS.

This is scary.

The more you know about AIDS, the more you can protect yourself from AIDS.

B. Psychologist:

I am , a psychologist who works in the Commission.

I am here today to also talk with you about the deadly disease (five second pause) AIDS.

AIDS is a disease that kills. There is no cure.

There are no survivors and it can take a long time to kill you.

You someone who has the AIDS virus in their body .

When you are sick with AIDS the pain can be unbearable.

You might get pneumonia and have a really hard time just even catching your breath.

You feel like you will suffocate. Some people have actually suffocated to death.

It is frightening..... serious.....something must be done.

C. Nurse:

I am , a nurse educator in the Commission.

I have seen what happens to families and friends when someone close to them gets AIDS.

Some people get sores all over their body.

They lose weight and after awhile do not even look like themselves anymore.

They get weak and are too exhausted to do the things they like to do.

Sometimes they can not even take care of themselves.

This is a very serious and could affect your life someday.

AIDS is a deadly.

Once you are infected with the virus, YOU (over-emphasize YOU) are infected for LIFE (over-emphasize LIFE).

People also develop terrible diarrhea.

When this happens, it can be too embarrassing to even be with other people or go outside because you become afraid that you will lose control over your bowel movements.

This is very serious.

If this is scary, do something.....protect yourself.

Many Blacks think that AIDS has not affected the Black community.

Believe me.....there are many Black children that have AIDS.

And they got the disease from their parents who had AIDS.

The number of Black women with AIDS is growing every day.

I could talk to you about AIDS all day.

But now listen to someone who knows more than I can begin to tell you.

Listen to Mary.

Mary has AIDS

D. Mary (Mary talks about having AIDS. Her tone of voice is very serious, she sounds anxious and frightened, she cries at times.)

My boyfriend Joe died several weeks ago. He died of AIDS.

I am still upset and afraid.

I just found out that I have the AIDS virus.

My baby Wanda has been real sick.

The doctors just told me that Wanda has the AIDS virus.

I never thought this would happen to me.

I never knew that it would affect me, my family, and our baby.

I only thought you got AIDS if you were gay or shoot-up drugs all the time.

My boyfriend who just died never would say much about whether he used drugs or had sex with other people.

He also did not like condoms, rubbers.

I was too afraid or embarrassed to say anything.

And now it's too late.

It's been a nightmare.

I wish I had known better.

I wish I had known what YOU are now going to learn

II. The following was used as the threat appeal in the low fear condiotn.

A. Physician:

I am , a physician in the DC commission of Mental Health.

I am here to speak about Acquired Immune Deficiency Syndrome or AIDS.

I am familiar with the infections a person gets.

Its on the news and people can read about it.

It took a lot of research to figure this out.

The treatments have been improved, but it is recognized that there is a long way to go to know more about this problem.

It is not easy.

This has become a problem for everyone across the world.

The more that is known, the more people will know how to prevent themselves from getting the disease.

B. Psychologist

I am , a psychologist who works in the Commission.

I am here today to also talk with you AIDS.

People are hearing more and more about AIDS today and what they can do about it.

There are scientific meetings that are strictly devoted to studying this national problem.

We know a lot more about the problem and how people get the virus.

We know a lot more about how the body responds to the virus.
It's taken some time to come this far.
This is a complicated problem that has many effects on many individuals.
What is being learned may work towards solving this important health problem.

C. Nurse:

I am , a nurse educator in the Commission.
I help families who have been affected by this problem.
I help with their concerns and other problems when they need help.
We know a lot more about AIDS than we used to.
There is a lot more research on the problem today.
More effort is spent on providing the information that the public needs to know.
This is a fact about the problem.
It is important to know the facts.
We also know more about the symptoms and how to determine which people may be more at risk than others.
This is a topic that is worth some thought.
This health problem is affecting many people throughout the world.
Experts meet to discuss the needs of those persons affected by the illness.
Knowing more information gives people the opportunity to know more about what to do about the problem.
When more is known, people have the information they need to protect themselves against infection with the AIDS virus.
A lot of this information took several years to figure out.
There will probably be even more information about the problem as time goes by.

What is already known however can be of use to many people.

Meet Mary. She knows a lot since she has a friend who has AIDS.

D. Mary: (Mary speaks to the camera in a somewhat matter of fact monotone voice.)

My friend has AIDS.

She is the only person I have known to get the disease.

She never thought this would happen.

She never knew that it would effect other people around her.

She only thought a person got AIDS if you were gay or shoot-up drugs all the time.

She never would ask her boyfriend if he messed around with women.

She thought he might be shooting-up, but did not say anything.

Condoms, rubbers? She was too embarrassed to say anything.

So now she is ill.

It's been difficult.

It's not her fault and we all know that she wishes things were different.

This has affected her relationships with other people.

She now spends time getting treatment.

She has her ups and his downs.

She has learned a lot from this experience.

She talks with others about AIDS and hopes to educate people about what they can do to help themselves.

III. The following was used as the equivalent to the previous threat appeals for the control condition.

A. Physician:

I am ,a physician in the D.C. Mental Health Commission.

I am familiar with the problems a person with allergies can have.
Its on the news and people can read about it.
More money is being given to researchers and the community
It took a lot of research to figure this out.
The treatments have been improved, but it is also recognized that persons suffering from allergies can even help themselves.
It's taken some time to come this far.
Allergies are common for many people.
A doctor can determine who has allergies.
Some people may have very bad allergies, while others may have milder symptoms and not be as bothered.
Not only is better treatment available, but people with allergies can also help themselves.

B. Psychologist:

I am , a psychologist who works in the Commission.
I am here today to also talk about allergies.
People are hearing more and more about allergies today and what they can do about it.
There are scientific meetings that are strictly devoted to studying how to help someone with allergies.
We know a lot more about the problem and how people are affected by allergies.
We know a lot more about how the body responds to the things that cause allergies.
People who suffer with allergies, are also able to do things around the home to improve the air where they live.
This can make a big difference for someone who has allergies.

C. Nurse:

I am , a nurse educator in the Commission.

I help out people with allergies.

Help them think about what they can do about allergies.

We know a lot more about the problem than we used to.

There is a lot more research on the problem today.

More effort is spent on providing the information that the public needs to know.

This is a fact about the problem. It is important to know the facts.

We also know more about the symptoms and how to determine which people may be more at risk than others.

This is a topic that is worth some thought.

Education about allergies will inform people with allergies about the things they can do to help with their symptoms.

People may think other health problems are more important, but allergies are an important health matter.

They are more common than is usually thought.

True, not everyone is affected by allergies, but many people are.

Running nose, watery eyes, and sneezing may all be symptoms associated with allergies.

There are a lot of things we come in contact with all the time that can make it difficult for someone with allergies.

There are also a lot of simple things that can be done to help someone with allergies be more comfortable.

Meet this Mary. She knows a lot since she has had allergies all her life.

D. Mary : (Mary speaks to the camera in a somewhat matter of fact monotone voice.)

I have allergies.

For a long time I didn't even realize it.

I thought I just had colds all the time.

I never knew that I had allergies until I went to a doctor.

I only thought other people had allergies.

Sometimes I used to think that when a person said they had allergies that they were just faking being sick.

But I was wrong.

I was sure glad to find out that I had allergies.

You know I think back now and wished I had figured this out a long time ago.

So now I know what all the sneezing was about.

It's been difficult.

It's a good thing I know I have allergies since now I clean my house differently.

Knowing I have allergies has helped me.

When my allergies are really bad, I now know that there is something affecting me.

What you are about to hear may help.

IV. The following is the script of the part of the intervention providing recommendations on how to protect oneself from AIDS. The videotape is narrated by a male voice and female voice and uses illustrations to provide information.

Male: AIDS, you probably have heard about it.

Female: You may even know someone who has AIDS.

Male: AIDS is a deadly disease that does not discriminate.

Female: It attacks famous people, rich people and poor people, old people and young people, people of all colors and races.

Male: Aids is very serious. It will kill you.

Female: Right now there is no way to cure AIDS, but you can avoid catching it.

Male: You can protect yourself from AIDS. It's important to know how. AIDS is a disease caused by a tiny germ called a virus too small to see.

Female: Colds and flus are also caused by viruses and it is easy to catch them. You can catch a cold from a sneeze or by using the same glass or toothbrush that has been used by someone with a cold or by kissing or even by shaking their hands.

Male: So you might think AIDS is easy to catch, but it's not. You can not catch it from a sneeze or by using the same glass as someone who has AIDS or even by kissing someone who has AIDS.

Female: Is it safe to shake hands without fear of getting AIDS?

Male: Yes.

Female: Is drinking from a bottle safe?

Male: Yes.

Female: Is touching a doorknob safe?

Male: Yes.

Female: Is hugging a person with AIDS safe? Is it safe to dance with someone who might have AIDS? Yes.

Male: Is it safe to use the same swimming pool with someone with AIDS, to use the same toilet? Yes.

Female: Is it safe to eat food cooked by someone who has the disease? Yes.

Male: The AIDS virus can not live very long outside the human body. It dies very quickly on things like doorknobs or swimming pools or hands. It doesn't like being exposed to sunlight or air.

Female: The AIDS virus lives inside the human body, in the blood, in a woman's vagina and in her vaginal fluid.

Male: In a man's penis and in his semen, the fluid that comes out of the man's penis when he has sex. Another word for semen is cum.

Female: You can get AIDS from people who have the illness if their blood or semen get inside your body.

Male: How does the AIDS virus get into the body? Can you get it through sex? Yes.

Female: Can you get it through needles? Yes.

Male: Can a mother give it to her baby? Yes.

Female: One way you can get AIDS is through sex. If you have sex with someone who is infected with AIDS, you can catch it from them. If you are a woman, the AIDS virus can get into your body through the openings where you have sex, your vagina, the place where you have your period, your mouth or your rectum, the place where your bowel movements come out. Semen with the AIDS virus can get into your body through any of these places when you are having sex.

Male: If you are a man, the virus can also get into your body when you have sex. It can get in through the opening in your penis. If you have sex with another man, the virus can also get into your body through your mouth or through your rectum. If semen or blood gets inside any of these places, you can get AIDS.

Female: What is the most dangerous place to have sex for either a man or a woman?

Male: The rectum.

Female: To keep from catching AIDS when you have sex, you must stop blood or semen from getting into your body.

Male: The best way to do that is to use a condom, also called a rubber. There are several different kinds of condoms. If you are a man you should never have sex without a condom.

Female: If you are a woman, you should insist never have sex with a man who does not wear a condom. Another way to make yourself a little safer is to use a foam or jelly, the kind used to kill sperm and keep from getting pregnant. Be sure to use one that has nonoxynol-9 in it because that is the ingredient that kills the AIDS virus.

Male: Of course the only absolutely sure way to avoid getting AIDS is to avoid sex altogether.

Female: Another way the AIDS virus can get into your body is through a needle. If you use a needle to inject medicine, to make tattoos, or to even pierce your ears, you can catch AIDS. Blood may be on the needle, even if you don't see it and that blood could have the AIDS virus living in it.

Male: If the needle has been used by someone with the AIDS virus in their blood, they can give you the disease through the needle.

Female: If you know someone who uses a needle to shoot drugs, help save their life. Tell them never to use a needle or works that someone else has used before them, even if it is their husband or wife, lover, sister or brothers, or their best friend. If they have to use a needle that someone else has used, they should clean the it before they use it or they run the risk of catching AIDS. Is it safe for a doctor or nurse to give you a shot of medicine?

Male: Yes. Doctors only use clean needles. They are clean and sterile. You can not get AIDS from them.

Female: You can't tell who has the AIDS virus just by looking at them. Many people who are already infected look healthy. They don't know they have the virus and you can't tell either.

Male: The only way to know for sure if you are infected with the AIDS virus is to have a blood test as part of a medical examination.

Female: Your doctor or counselor or other members of your treatment team can help you find out how to be safe. They can give you advice about the AIDS test, how to clean needles, and how to use a condom.

Male: AIDS can infect you.

Female: What about you? Are you safe?

Male: Remember these simple rule. Don't shoot drugs. Don't share needles. If you have sex, use a condom.

Female: Stop AIDS. Protect yourself.

Appendix D

Questionnaires

Pre-Test and Two Week Follow-up for all Conditions

Part 1

Code: _____

The following questions ask you about your health.

1. How concerned are you about your health?

Very concerned
Somewhat concerned
A little concerned
Not concerned at all

2. How good of a job are you doing in taking care of your health right now?

Excellent job
Good job
Fair job
Poor job

3. How concerned are you about the chance of getting sick?

Very concerned
Somewhat concerned
A little concerned
Not concerned at all

Part 2

CODE: _____

1. With how many people have you had any kind of sex within the **past 2 weeks**?

a. 0 b. 1 c. 2 d. 3 e. 4 f. 5 or more

2. How many times have you had sex with someone you knew within the **past 2 weeks**?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

3. How many times have you had sex with someone you **did not** know within the **past 2 weeks**?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

4. How many times within the **past 2 weeks** has someone put their penis into your mouth?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

5. **(MEN ONLY)** How many times within the **past 2 weeks** have you put your penis into someone's mouth?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

6. **(FEMALE ONLY)** How many times within **past 2 weeks** has someone put their penis into your vagina?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

7. **(MEN ONLY)** How many times within **past 2 weeks** have you put your penis into someone's vagina?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

8. **(MEN ONLY)** How many times within **past 2 weeks** have you put your penis into someone's rectum ?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

9. How many times within **past 2 weeks** has someone put their penis into your rectum?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

10. How many times within **past 2 weeks** have you used a condom during sex?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

11. How many times within **past 2 weeks** have you bought condoms from the condom machines on the wards?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

12. How many times within **past 2 weeks** have you gone to the pharmacy to get condoms ?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

13. How many times within **past 2 weeks** have you been given a prescription for condoms?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

14. How many times within **past 2 weeks** have you paid someone to have sex with you?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

15. How many times within **past 2 weeks** has someone paid you to have sex with them?

a. 0 b. 1 time c. 2 times d. 3 times e. 4 times f. 5 or more times

Part 3

Code:_____

If you think the answer to the question is **YES**, then circle **YES**.

If you think the answer to the question is **NO**, then circle **NO**

1. Have you ever talked with the hospital staff about protecting yourself against AIDS?

a.YES b.NO

2. Have you ever asked staff for a condom?

a.YES b.NO

3. Have you be in a treatment group that discusses AIDS or your health and sex?

a.YES b.NO

4. Have you started using condoms because of AIDS?

a.YES b.NO

5. Since the AIDS epidemic began, have you changed any of your sexual practices because of AIDS?

a.YES b.NO

6. Have you ever shot up drugs?

a.YES b.NO

7. Have you ever shared needles with someone?

a.YES b.NO

8. When you or your partner use a condom, is the penis erect (hard) when withdrawn after sexual intercourse?

a.YES b.NO

9. Have you sold or traded condoms to other people?

a.YES b.NO

10. Did you get high on drugs or alcohol this morning before coming to participate in today's study?

a.YES b.NO

11. Did you get high on drugs or alcohol last night?

a.YES b.NO

12. Did you get high on drugs or alcohol yesterday?

a.YES b.NO

13. Have you ever talked to a friend about AIDS?

a.YES b.NO

14. Have you ever talked to a sexual partner about AIDS before having sex?

a.YES b.NO

Part 4

Code:_____
Age:

Next I want you to answer this question. The question asks how often you do something. You can circle always, sometimes, rarely or never.

EXAMPLE :

How often do I smoke cigarettes ?

Always
Sometimes
Rarely
Never

1. When you have any kind of sexual intercourse with someone, how frequently do you use a condom?

Always
Sometimes
Rarely
Never

Part 5

Code:_____
Age:

How much do you agree with the following statements?
Example.

I think I should get help looking for a job.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

1. I would not mind being in the same room with someone who has a cold.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

2. People with AIDS should not be allowed to handle food in restaurants.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

3. If I found out that a friend had a cold, I would be afraid to hug him/her.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

4. Children with AIDS should be allowed to attend school.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

5. I worry about catching some disease when I use a public toilet.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

6. I wouldn't mind being in the same room with a friend who has AIDS.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

7. Someone should keep records of all the persons who have the AIDS virus.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

8. Someone should keep records on people who buy cigarettes.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

9. If I found out a friend had AIDS, I would be afraid to hug him or her.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

10. I would never send my child who does not have AIDS to a school that has a child who has AIDS.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

11. I believe the health experts when they say that AIDS can not be transmitted by casual contact.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

12. People with colds should be confined to a hospital, against their wills, if necessary.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

13. I am afraid that I will get AIDS.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

14. I am worried about catching AIDS in a public restroom.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

15. I believe the doctors when they say that someone else's cigarette smoke will hurt me.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

16. If I found out a friend or lover had AIDS, I would be afraid to kiss him or her.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

17. Even if a friend had AIDS, I wouldn't mind touching him or her.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

18. People with AIDS should be confined in hospitals, against their wills, if necessary.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

19. Ambulance drivers, police, and fireman should not be expected to assist people whom they believe have AIDS.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

Part 6

Code:_____

The following are some questions.

If you think the answer to the question is **YES**, then circle **YES**.

If you think the answer to the question is **NO**, then circle **NO**.

1. Do you know where to get good information about AIDS infection?

a.YES b.NO

2. Do you know how to keep from getting the AIDS virus?

a.YES b.NO

3. When you need a condom (rubber), can you get one?

a.YES b.NO

4. Do you have difficulty controlling your sexual impulses?

a.YES b.NO

5. Would you be willing to use a condom (rubber) if you had a condom when you needed one?

a.YES b.NO

6. Condoms (rubbers) are not worth the bother.

a.YES b.NO

7. A woman who insists that a man wear a condom (rubber) is being unfair.

a.YES b.NO

8. I just couldn't bring myself to talk to my sex partners about using condoms rubbers).

a.YES b.NO

9. People who use condoms (rubbers) every time they have sex are being silly.

a.YES b.NO

10. If a friend tried to talk me into using condoms (rubbers), I'd probably get angry.

a.YES b.NO

11. Do you know how to use a condom (rubber) during sexual intercourse?

a.YES b.NO

12. Can you tell someone that you don't what to have sexual intercourse?

a.YES b.NO

13. If you had the blood test for the AIDS virus, would you want to know the results of the test?

a.YES b.NO

14. Would you talk about AIDS infection with a friend?

a.YES b.NO

15. Would you talk about AIDS infection with your sexual partner?

a.YES b.NO

16. Would you talk about AIDS infection with a nurse, doctor, or staff member?

a.YES b.NO

17. Do you think that other people you know are having unprotected sex?

a.YES b.NO

18. Do you think that other people you know are using condoms (rubbers) when they have sex?

a.YES b.NO

19. Have you ever known anyone with AIDS?

a.YES b.NO

Part 7

Code:_____
Age:

The following are some questions about how you feel and think.

Example

What are your chances of getting a cold when you walk in the rain?

Very High
High
Medium
Low
None

1. What are your chances of getting AIDS?

Very High
High
Medium
Low
None

2. What are the chances, someone you know, will get the AIDS virus?

Very High
High
Medium
Low
None

3. What are your chances of dying of cancer?

Very High
High
Medium
Low
None

Part 8

Code:_____
Age:

How much do you agree with the following statements?

EXAMPLE

I think I should get help looking for a job.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

1. Using condoms (rubbers) will reduce my risk of getting AIDS.

Strongly agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

2. Not having sex with another person will reduce my risk of getting AIDS.

Strongly agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

3. I intend to use condoms (rubbers) when I have sex with someone.

Strongly agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

Part 9

Code:_____
Age:

The following are some questions.

If you think the answer to the question is **YES**, then circle **YES**.

If you think the answer to the question is **NO**, then circle **NO**.

If you think the answer to the question is **NOT SURE**, then circle **NOT SURE**.

Before you begin, examples of how to answer the question will be provided. **IF YOU DO NOT UNDERSTAND, PLEASE SAY SO AND YOU WILL BE GIVEN HELP.**

1. Can a person get AIDS from holding hands with someone?
a.YES b.NO c.NOT SURE

2. Can a person get AIDS from from sharing needles used to inject (shoot up) drugs?
a.YES b.NO c.NOT SURE

3. Can a person get AIDS from using a public toilet?

a.YES b.NO c.NOT SURE

4. Can you get AIDS from having sex with someone without a condom (rubber)?

a.YES b.NO c.NOT SURE

5. Can you tell if people are infected with the AIDS virus just by looking at them?

a.YES b.NO c.NOT SURE

6. Can a person who has the AIDS virus infect someone else during sexual intercourse?

a.YES b.NO c.NOT SURE

7. Can a pregnant woman who has the AIDS virus infect her unborn baby with the virus?

a.YES b.NO c.NOT SURE

8. Is there a cure for AIDS infection?

a.YES b.NO c.NOT SURE

9. Can people **reduce** their chances of becoming infected with the AIDS virus by using condoms (rubbers) during sexual intercourse?

a.YES b.NO c.NOT SURE

10. Can people **reduce** their chances of becoming infected with the AIDS virus by not having any kind of sexual intercourse with a person who has injected drugs?

a.YES b.NO c.NOT SURE

11. Is it true that only gay men can get AIDS?'

a.YES b.NO c.NOT SURE

12. Can people **reduce** their chances of becoming infected with the AIDS virus by taking birth control pills?

a.YES b.NO c.NOT SURE

13. Can contact with semen (cum) from the penis result in AIDS?

a.YES b.NO c.NOT SURE

14. Can a person get AIDS from vaginal fluids in a woman's vagina?

a.YES b.NO c.NOT SURE

15. Can anyone get AIDS?

a.YES b.NO c.NOT SURE

16. Can a person get AIDS from vaginal blood when a woman menstruates?

a.YES b.NO c.NOT SURE

17. Have you ever had your blood tested for infection with the AIDS virus?

a.YES b.NO c.NOT SURE

18. Have you ever known anyone with AIDS?

a.YES b.NO c.NOT SURE

Part 10

Code:_____

This question deals with where you get most of your information about AIDS.

Where do you get most of your information about AIDS? Circle only one of the following that applies to you:

Television
Newspapers
Magazines
Radio
Radio
Relatives
Friends
Doctors
Nurses or other staff

Immediate Post-Test Manipulation Check

Part 1

Code:_____
Age:

How much do you agree with the following statements?
Example.

I learned something today.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

1. While watching the videotape, I got scared.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

2. After seeing the videotape, I am now more afraid of catching AIDS.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

3. The videotape made me realize that I could get AIDS.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

4. I believe that the people in the beginning of the videotape knew what they were talking about.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

5. I trust what the people in the beginning of the videotape were saying to me.

Strongly Agree
Agree
Neither Agree or Disagree
Disagree
Strongly Disagree

NOTE: With the exceptipon of Parts 1, 2, 3, and 4 used in the pretest and follow-up, subjects were administered the same questions after the manipulation check for the immediate post-test.

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