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Comparison of Standard MMPI and MMPI-168 Scores in a Non-Psychiatric Population

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RELATIONSHIP OF AIDS RELATED KNOWLEDGE
TO AIDS RELATED BEHAVIORS AND COGNITIONS

by

Ramon Verdaguer

A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University of Chicago in Partial Fulfillment
of the Requirements for the Degree of
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VITA

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CHAPTER I

LITERATURE REVIEW

Introduction

Acquired Immune Deficiency Syndrome (AIDS) is a life threatening disease transmitted by a virus (HTLV-III) which attacks a person's immune system and decreases his/her ability to fight other diseases (Koop, 1987). Death occurs as the body becomes plagued with opportunistic infections and/or cancer which cannot be controlled due to the body's compromised immunological system. There have been about 65,000 known cases of AIDS in the United States. More than half of these cases have already resulted in deaths. By the end of 1993 it is estimated that 450,000 cases of AIDS and at least 179,000 deaths from the disease will have been reported.

According to the Surgeon General's Report (Koop, 1987), the AIDS virus is spread by contact with certain infected body fluids like blood, semen, and vaginal secretions. Behaviors responsible for the transmission of the virus include sexual contact (both homosexual and heterosexual) with an infected person, sharing of hypodermic needles with an infected person, and receiving transfusions of contaminated blood. The AIDS virus can also be transmitted

perinatally from infected mothers to their infants.

There is presently no known cure or vaccine for AIDS. Much effort is, therefore, being directed toward the prevention of the disease through a public education campaign. The campaign's goal is to educate the public about the nature of the AIDS virus and ways to prevent exposure to the virus by changing or eliminating the behaviors associated with its transmission. The focus of attention has been on the adoption of low-risk sexual behaviors and the avoidance or modification of intravenous drug usage behaviors.

AIDS was first identified in 1981 (Centers for Disease Control, 1981). Research suggests that as late as 1984, people were relatively unconcerned about the disease (Simkins & Eberhage, 1984). In fact, even as recently as 1987, many Americans still regarded the emergence of AIDS as an act of God directed toward homosexuals (Leischman, 1987). It has become increasingly clear, however, that nonhomosexuals such as intravenous drug users, Haitian immigrants, hemophiliacs, and transfusion recipients are also at risk (Centers for Disease Control, 1983). Leischman (1987) further states that many people now believe "that AIDS has spread so much that it is now a threat to the American public" (p. 55). The Surgeon General has deemed it one of the most serious health problems facing the country today (Koop, 1987).

The Information Campaign

Government as well as private institutions have been working toward the goal of informing the "American public about the cause, modes of transmission, and other aspects of AIDS" (Journal of the American Medical Association, 1987, p.601). For instance, "the Public Health Service and the American Red Cross launched a mass media campaign in mid-1985" (Journal of the American Medical Association, 1987, p. 601). The government participation has also come at the state and local levels. For example, the State of Illinois Department of Public Health has been involved in printing and distributing information about AIDS. The San Francisco Department of Public Health has provided funding for the development of brochures containing information about the disease.

The form of media used in the information campaign has been diverse, including print, radio, and television announcements. "Television public service announcements aimed at dispelling misconceptions about getting AIDS from casual contact ... were developed and aired by stations nationwide" (Journal of the American Medical Association, 1987, p. 601). A toll-free hotline has been instituted by the Public Health Service and its availability has been advertised nationwide. Printed materials have included posters, leaflets and booklets (e.g., Surgeon's General Report on AIDS). The materials have been available through

institutions such as health care facilities or through written requests to the individual sources. One brochure (the Surgeon General's Report on AIDS) has been systematically distributed to all households in the country. The information has been translated into several languages in order to reach different cultural segments of the population. Videotapes are also available.

The information included in the AIDS literature and ads has covered a wide variety of topics including information about high risk sexual behavior and drug use. The information has also been geared toward different audiences, such as teachers, school officials and parents of school age children. Some of the material has been directed toward health care workers, policemen, firemen, or other emergency personnel. Regardless of the behavioral topics covered or the audiences to which it has been geared, the materials have explained the disease, its causes, and its degree of contagion.

Effects of the Information Campaign

As previously discussed, the goal of the information campaign has been to reduce the incidence of AIDS by preventative education. In the U.S. the most common form of exposure to the virus has been through risk related sexual practices. The campaign, therefore, has attempted to alter such practices. The implementation of "safe" sexual practices, as it is commonly referred to, should have had the

effect of curtailing the incidence of other sexually transmitted diseases. However, various surveys have found an increase in certain types of sexually transmitted diseases, contradicting expectations on the efficacy of the AIDS prevention campaign. For example, it has been noted that "while the incidence of venereal diseases has been sharply declining among gay men, it has been raising unabated among young heterosexuals. Even syphilis, once considered a bygone disease is making a comeback" (Findlay, 1988, p.59). Reports of "a dramatic increase in penicillin resistant gonorrhea in Chicago indicates that young people are not taking measures to protect themselves against sexually transmitted diseases, including AIDS" (Van, 1988, p. 4). Such statistics suggest that the AIDS information campaign may have failed to promote the adoption of "safe" behaviors among the general population.

Studies among the heterosexual population have indicated that high-risk sexual behaviors have not decreased significantly. A study by Kegeles, Adler, and Irwin (1988) with a group of adolescents in San Francisco, found that "although perceptions that condoms prevent sexually transmitted diseases and the value and importance placed on avoiding sexually transmitted diseases (STDs) remained high, these were neither reflected in increased intentions to use condoms nor in increased use" (p. 460). Another study, conducted in Kansas City primarily among volunteers from

psychology classes, found that AIDS had not influenced sexual behavior (Simkins & Kushner, 1986).

However, research has indicated that high-risk groups, specifically homosexual and bisexual men, have succeeded in altering their sexual behavior. A study by Klein, Sullivan, Wolcott, Landsverk, Namir, & Fawzy (1987) found that homosexual men "reported profound decreases in several sexual practices linked to transmission of ... AIDS" (p. 742). A presidential report on AIDS has found "indications ... that homosexual men have significantly reduced their participation in those sexual activities that carry the highest risk for AIDS, principally anal intercourse" (Crewdson, 1987, p.2).

Thus, it appears that two high-risk groups, namely male homosexuals and bisexuals, "have altered their sexual practices to reduce their probability of becoming infected and infecting others with HIV" (Walters, 1988, p. 598), while in the heterosexual population "the gap between knowledge and personal action remains wide" (Fineberg, 1988, p.130). As it stands now, "if the effectiveness of education is to be measured by behavioral change, success will not come easily" (Fineberg, 1988, p. 130).

Previous experience with similar types of campaigns has not been encouraging. Looking back at experiences with information campaigns, specifically those geared toward the problems of syphilis and gonorrhoea early in the twentieth century, we find that "these educational programs did not

have the desired effect of reducing the rates of infection" (Brandt, 1988, p. 368).

In summary, the literature seems to suggest that the AIDS campaign has not produced the desired effects it had intended to produce. In fact, when looked at in terms of previous information campaigns focused on changing sexual behavior, the campaign's lack of effectiveness among certain populations is not altogether unexpected.

Difficulties with Behavior Change

General Theoretical Considerations

Several factors may be contributing to the low rates of behavior change. It appears that information in the media has been expected to be the major catalyst for behavior change. However, Weiss (1969) writes that "in view of the weightiness of stable family, social, and environmental influences, of personal experience and of preexisting views, it is unlikely that the media alone can have a decisive or marked effect" (p.111). He further states that "what is rejected is any conception that construes the media experiences alone as sufficient for a wide variety of effects [on attitudes, values, and behaviors]" (p.115). In fact, Hovland (1954) mentions many factors which may influence the ability of a communication to be received and accepted. Factors like type of media utilized (radio, TV, or print), who communicates the information, what types of strategies are used to communicate the information, audience

characteristics (intelligence, interests) and others need to be considered when utilizing media messages. While considering all these variables, the fact remains that there is no guarantee that once presented, this information will be perceived as valuable and, therefore, used or stored for later use (Leventhal, Zimmerman, & Gutmann, 1984). Fishbein and Ajzen (1975) state that "a person may believe the informational items contained in a message ... even without reception. Further, a person who receives a given belief statement, may not accept it" (p. 476). In other words, it is possible to acquire information without it having an effect on beliefs or values (Kelly, Kegeles, Lund, & Weisenberg, 1976). In fact it has been postulated that "knowledge, while still important, is not the initiating force in change" (Swanson, 1972, p. 364). With the AIDS epidemic, research has found that people are increasingly aware of the dangers as well as the recommended precautions, however, this knowledge has not been translated into behavioral change.

In order for action or behavior change to follow any recommendations, there are certain requirements that need to be present for a change to occur. According to Fishbein and Ajzen (1975), one of these requirements is that situational variables, like environmental factors must be amenable to facilitating action. They state that "behaviors can vary in terms of the behavior itself, the target, the situation, and

time" (p. 369). Sexual practices and drug usage, however, the two most common modes of transmission of the AIDS virus, are both "biologically based and socially complex behaviors. Both derive from biological impulses that are hard to resist" (Fineberg, 1988, p. 593). Because of the biological nature of these two behaviors, environmental influences in compliance may be minimal. In sexual and drug use scenarios, environmental influences may, in fact, be instrumental in non-compliance with safety recommendations. Environmental cues (e.g. a familiar street corner, familiar people, familiar events, familiar scents, familiar sights) which have been associated with the undesired response may trigger the habitual response which in turn may elicit a physiological urge.

Another important factor for the translation of beliefs into action is the generation of a plan of action (Leventhal et al., 1984). In other words, the individual must know what to do, how to do it, and must also "have the conviction that he or she can successfully execute the behavior required to produce the outcome" (Bandura, 1977, p. 79). One of the problems with the AIDS campaign may be that in order not to "insult" or to be sensitive to what different segments of the population may consider proper or moral, the AIDS message may be too general and/or vague. The social amenities of the message may restrict the information necessary for the generation of a plan of action. For example, although AIDS

messages at times recommend the use of a condom while engaging in sexual intercourse, it is unusual to find information on where to buy condoms, how to use them or when and how to introduce the topic to a potential partner. In fact, the continuing ambivalence about openly discussing teenage sexuality is still reflected in a reluctance to promote condom use (Brooks-Gunn, Boyer, & Hein, 1988).

Considering that research indicates that specificity and detail of a message affects people's ability to enact a desired behavior (Leventhal et al., 1984), the vagueness of AIDS information becomes a limiting factor which must be appropriately addressed.

Another possibility for the apparent low degree of effectiveness of the AIDS campaign among certain sectors of the population may have to do with how people interpret their personal notion of risk or vulnerability vis a vis the abstract, general notion of public risk or vulnerability (Leventhal et al, 1984). In other words a person may acknowledge the seriousness of a problem and the risk to people in general, but may in fact underestimate his or her own vulnerability to the disease. A possible explanation for this underestimation of risk is the fear that is associated with catching AIDS. The thought of developing AIDS may be inherently laced with much fear and apprehension. This fear may work paradoxically in that it may influence people into underestimating their own risk to the disease. In fact it

is suggested that as "fear mounts to higher and higher levels, the probability that the person will accept and act upon the protective recommendations decreases because of the disruptive effects of strong arousal which result in hypervigilance or defensive avoidance" (Janis, 1984, p. 346). The implication of this fear factor is that the likelihood of acceptance of protective action will depend on whether the "person's level of induced fear is below, at ,or above the optimal level" (Janis, 1984, p. 347). Furthermore, Leventhal and Niles (1965) state that even when fear has a positive effect on attitude change "by elevating the intensity of worry or concern, ... these differences in 'arousal' and 'persuasion' disappear over time" (p. 231). Therefore, the association of AIDS with death and the inherent fear it produces may work to prevent effective behavioral change or at least it may not be able to sustain it.

AIDS is linked with fear and anxiety for several reasons. People with AIDS are almost certain to face serious consequences including loss of job, eviction, denial of insurance, denial of public services, and denial or delay of health services (Tross & Hirsch, 1988). They may also have to endure discrimination, prejudice, and social ostracism. Furthermore, "the symptoms of AIDS-related illnesses are frequently visible to others, often disfiguring, and likely to disrupt an individual's social interactions" (Herek & Glunt, 1988). Although these consequences may not be the

most salient ones when people think about AIDS, they may still contribute to the anxiety associated with the thoughts of AIDS. Herek and Glunt (1988) further state that:

AIDS evokes anxiety because of its association with death ... It is a new illness that is uniformly fatal; it is caused by an unseen infectious agent that can remain latent in the body for an unknown period of time; the epidemic is perceived as both out of control and potentially catastrophic. Because these characteristics, individual judgments and decisions associated with AIDS are often made under conditions of anxiety and are thus likely to be defective. (p. 888)

Furthermore, "even when public officials attempt to allay fears and counteract this process, their pronouncements on AIDS may be greeted with skepticism" (Herek & Glunt, 1988, p.889).

In short then, perceived risk of contracting AIDS may negatively impact on compliance with AIDS safeguards by eliciting uncomfortably high levels of fear and anxiety about AIDS.

Bauman and Siegel (1987) state that:

Under conditions of high stress or threat, denial is often used to protect against unmanageable anxiety ... However, denial is not always functional. While it successfully reduces emotional distress, it tends to interfere with taking direct action, which may be necessary in certain situations to optimize other goals, such as safety and survival. (p. 333)

In fact, Weinstein (1980) concludes that underestimation of risk may be in part a "defensive phenomenon, a distortion of reality motivated to reduce anxiety" (p. 818). As people distort reality by underestimating their risk, they also become less receptive to behavioral change in response to the

threat of AIDS.

However, the notion of risk may also affect behavior and compliance in a different way. A problem exists in making comparisons between programs geared toward a behavioral treatment of a specific disease or illness and programs designed toward prevention with people at risk of developing an illness. In other words, there is a difference between a sick role and an illness concept and a risk role and a risk concept (Leventhal et al., 1984). The notion of risk is to a great extent an abstract concept. People must believe that they are in some type of danger even when there is no concrete evidence of this assumption. This notion of risk has to be maintained over a long period of time if long term behavioral change is expected. Furthermore, in this case there are no clear indications of success or progress. There is only a sign of failure, and in the case of AIDS, it is irreversible and deadly.

Illness is many times accompanied by concrete and often painful or uncomfortable signs. In many instances, by prescribing to certain behaviors, some of these signs can be ameliorated or eradicated. Amelioration of those signs serves as positive feedback that indicates the success of a certain behavior. This in turn makes compliance with a particular behavior rewarding, therefore, facilitating the maintenance of such a behavior. The time-limited nature of many diseases may also make compliance with certain behaviors

more easily attainable. The notion of risk, however, lacks those concrete signs. Individuals are in fact engaging in new and sometimes annoying behaviors which do not seem to produce different outcomes. There does not appear to be a reward for their behavior. Furthermore, individuals are unable to get feedback as to the effectiveness of their behaviors. These factors make compliance a much harder goal to attain.

The focus of programs geared toward risk reduction is long term self-maintenance, while programs geared toward treatment require "compliance with prescribed regimens over a short and defined time period" (Leventhal et al., 1984, p. 398). Some of the low rates of behavioral change in AIDS risk related behaviors may be the result of the AIDS campaign not taking the necessary approach for long term behavioral change. In its recommendations, the AIDS campaign may have used strategies better suited for short term behavioral change and may have neglected to develop strategies to promote and maintain these changes over a long period of time.

Another point to consider is the idea that the AIDS campaign was in fact being successful in changing people's behaviors, but only on a short term basis. These changes may not have endured consistently over a longer period of time. People may have been able to alter their behavior on a few occasions but have not been able to continue the prescribed

behavioral changes (Thomson, 1989). Several reasons may exist for this phenomena. Some of the changes recommended by the AIDS campaign are not simple. In fact, the AIDS campaign asked people to change a very important and complex part of their life, sexual behavior. They recommended not only behavior change, but a lifestyle change. In order for this to happen, individuals had to change a part of themselves that pervades every sphere of their existence, including their attitudes and beliefs.

"Safe" sexual behaviors may be considered a subset of the general notion of positive health habits. Therefore, any change in "high risk" sexual behavior would have to be viewed within the context of a broader change in positive health habits. Any enduring change in the realm of sexual behavior would have to be part of a lifestyle that reflects "the ability to anticipate problems, mobilize to meet them, and cope actively" (Mechanic & Cleary, 1980, p. 805). We are then talking about a fairly complex process of cognitive restructuring, which at this point is hardly the focus of the AIDS information campaign.

Sexual behavior follows both a personal and a societal code. When we ask people to change the way they behave sexually, we are asking them to shift and deal with something that is part of how they look and define themselves as persons in a specific cultural or group context. In other words we are asking them to change complex behavior patterns

that are also strongly influenced by societal and cultural norms. Such a degree of change is very difficult to initiate, let alone sustain.

According to Schachter (1951), it is difficult to change people's adherence to group norms because deviance from these norms is usually followed by some type of sanction or negative consequence like punishment or expulsion from the group. In the sexual arena, these sanctions may take the form of rejection or ridicule. It is apparent then that efforts to change sexual behavior can be hindered not only by organismic and personal barriers, but by group and cultural barriers as well.

There are many types of prevention and behavior change campaigns. For example, there are anti-littering campaigns, anti-crime campaigns, etc. As information and prevention campaigns, they may all have many commonalities with the AIDS campaign. However, the AIDS information campaign is not like any other type of information and behavior change campaign. By definition, the AIDS campaign falls in the realm of a health issue or concern, and as such it must also be discussed within a health framework. Leventhal et al. (1984) present an explanation for the difficulty in sustaining behavior change in the context of health and health behavior. They state that:

Health motives may not be important for long term behavior change. Health motives may be important in initiating behavior change, but the development of secondary positive goals may be essential for long term

maintenance... Thus, maintenance of long term health habits may require not only the learning of behavioral skills, but also an "emotional hooker" that makes the action personally reinforcing and meaningful. (p. 403)

In other words, a campaign that narrowly focuses on prevention of AIDS may not be enough to sustain the behavior change wanted. It seems that AIDS prevention behaviors must be presented as part of a campaign that is directed toward changing people's AIDS related behaviors, not only because it may save their lives, but because it is appealing and reinforcing in other personally meaningful ways. An analogous example is an anti-smoking advertisement which associates non-smoking not only with healthy lungs, but with self-assurance, success, and other positive qualities. In fact, Cooke and Meyers (1980) suggest that long term change involves a broader perspective, whose focus goes beyond specific behaviors. Its focus encompasses personal attitudes, as well as group and social factors. Furthermore, Leventhal et al. (1984) state that "short- and long-term objectives require changes in different behaviors, each with its own mechanism of maintaining change" (p. 404). The AIDS education campaign, therefore, may be too narrow in its focus to effectively provide long term behavioral change in the target populations.

Research which has dealt specifically with the efficacy of health education programs seems to suggest that health education fails to benefit at least half of the people for whom it is intended. This is primarily due to non-compliance

or inadequate adherence to the regimens (Haynes, 1976). One of the most important reasons for this phenomenon, again, may be related to the issue of specificity already mentioned. For example, Haynes (1976) talks about two approaches to the issue of behavioral change; educational strategies, and behavioral strategies. The former, and least effective, is designed to provide information about determinants, risks, and treatment, while the latter, and most effective, appears to be geared toward "teaching the skills needed to reach defined goals" (Leventhal et al., 1984, p. 396). The difficulty then with educational approaches to behavior change in terms of sex and AIDS is that " they tell people what not to do ... but fail to suggest what they can do instead" (Leischman, 1987, p. 56). In other words, they "tend to be too narrow in their definition of the problem and to focus only on target behaviors or specific outcomes" (Leventhal et al., 1984, p. 406) without giving proper consideration to specific details and techniques that may help to achieve the desired effect. In short, their aims are too narrow, and their methods not specific enough.

Of interest also is research that has been looking at other types of "high risk" behaviors like overeating, smoking, and drinking. This research suggests the many of the difficulties in changing "high risk" behaviors do not lie so much in achieving the initial cessation of the behavior but in keeping the individual from reengaging in the behavior

once it has stopped (Leventhal et al., 1984). In other words, part of the focus of these programs, including the AIDS campaign, must be concerned with relapse prevention.

Factors Affecting Behavior Change

AIDS Specific Research

As already stated, it appears that knowledge is a necessary but not sufficient factor for behavior change. In fact, in studies which have looked at the relationship between knowledge about AIDS and any changes in AIDS related behaviors, the findings appear to suggest that amount of knowledge has little relationship to how people behave. For example, Joseph, Montgomery, Emmons, Kirscht, Kessler, Ostrow, Wortman, O'Brien, Eller, & Eshelman (1987), found that knowledge about AIDS was unrelated to differences in any of the several outcome measures. Temoshok, Sweet, and Zich (1987) reported that knowledge was not correlated with change in sexual practices. Archambault and Edwards (1989) found no relationship between level of correct knowledge about AIDS and AIDS related behaviors. These results strongly indicate that there does not appear to be a direct relationship between AIDS related knowledge and AIDS related behaviors.

However, some of these studies seem to have certain limitations. Two such limitations may have to do with the scales used to measure knowledge and the populations utilized. When measuring knowledge about AIDS some of the scales appear to be limited in their ability to appropriately

discriminate between different levels of knowledge. For example, Joseph, Montgomery, Emmons, Kessler, et al. (1987) and Joseph, Montgomery, Emmons, Kirscht, et al. (1987), utilized only seven items to measure knowledge. Scherr (1987), used 21 items, however, the study was conducted in the United Kingdom. Temoshok et al. (1987) used only 14 items and focused the study in San Francisco, New York, and London. DiClemente, Zorn, & Temoshok (1987) used a 30 item knowledge questionnaire, but focused his population to San Francisco.

Further, some of the above mentioned studies used seemingly inappropriate populations, populations in which one would be likely to find a ceiling effect. Samples from cities like New York and San Francisco, which have been hardest hit by the AIDS epidemic, may make it more difficult to find people with marked differences in their level of knowledge as AIDS information and emphasis is more salient in those communities.

Another limitation of the knowledge surveys previously used is their inability to assess the confidence of a subject's responses. An assessment of that confidence level may be important because any wrong assumptions about AIDS which might be firmly believed (i.e., high confidence level) by an individual may put these people in jeopardy for exposing themselves to the AIDS virus. In the same respect, any right assumptions about AIDS which are not firmly

believed by an individual may decrease that persons' ability or motivation to modify any AIDS related high risk behaviors. Therefore, confidence ratings may enhance the level of analysis, concerning one's knowledge about AIDS.

AIDS Related Behaviors

Most studies rely on sexual behaviors as the best way to assess the impact of AIDS knowledge in their target populations (Bauman & Siegel, 1987; DiClemente et al, 1987; Klein et al, 1987; Simkins & Eberhage, 1984). As already mentioned, the evidence suggests that high risk behaviors are not decreasing in the heterosexual population (Fineberg, 1988; Kegeles et al, 1988; and Simkins and Eberhage, 1984). Although these findings seem to reflect a trend in the heterosexual community, some of the impact of the campaign may be underestimated by such a narrow focus on behavioral change. For example, Simkins and Eberhage (1984) used only one item as a measure of sexual behavior change. However, Fishbein and Ajzen (1974) state that "a person's attitude toward an object need not be related to any single behavior that may be performed with respect to the object ... however, it should be related to the overall pattern of his behaviors" (p. 61). Following this line of logic, it then appears that less comprehensive behavioral measures are hampered in finding significant changes and true relationships between behavior and other variables. Bauman and Siegel (1987) used a comprehensive measure with several items that could

classify as "risky", "low risk", and "safe." However, in this and other studies, the measures used made no distinction between truly risk reducing behaviors and behaviors based on fictional beliefs in which people may be engaging on the erroneous assumption that they are being cautious. Inclusion of such behaviors, which are not directly related to exposure to the AIDS virus, may provide an indication of an individual's level of motivation and commitment to reducing risk of exposure to the virus, rather than just an estimate of their adaptive change in behavior. Archambault and Edwards (1989) included a measure of "mythical" or fictional beliefs, and although this measure was unrelated to knowledge about AIDS, they found it to be correlated with attitudes toward victims of AIDS, to evaluative beliefs about AIDS, and more importantly, to general AIDS risk reduction. What seems to be even more relevant is that inclusion of these items may provide an indication of myths or false beliefs about what constitutes safe behavior. People might be engaging in what they believe to be self-protective behaviors, but in fact these behaviors may be unrelated to AIDS exposure. Such misbeliefs may be precluding some individuals from engaging in safe behaviors, therefore, putting themselves at risk. As Leventhal et al. (1984) point out, "errors of omission are functionally different from errors of commission yet may have the same devastating effect on outcome" (p. 404).

AIDS Related Cognitions

Most of the psychological research on AIDS has focused almost exclusively on behavior as the most important outcome measure. Clearly, behavior is a very important outcome measure. However, as Leventhal et al. (1984) so eloquently point out, "the rigid adherence to public notions of risk and the prescriptive approach to behavioral change have led naturally to an emphasis on outcomes rather than on process" (p. 403). In other words, by focusing exclusively on behavior some of the other factors or elements involved in the process of behavior change may have been overlooked.

One overlooked aspect of the process of behavioral change may be its antecedents. According to Leventhal et al. (1984) we we should focus

... on important actions that may immediately precede and follow the primary behavioral criterion ... both the specific acts and their antecedents would be important outcome criteria ... One critical shortcoming of behavioral models is that they often fail to specify this chain of behavioral events ... (p. 377)

Cognitive responses are one link in that chain of behavioral events. Hoyt and Janis' (1975) work on increasing adherence to stressful decisions suggests that behavior is influenced by cognitive responses. Cognitive dissonance is also evidence for this. As a particular kind of cognitive response, "cognitive dissonance is motivating. Cognitive dissonance will give rise to activity oriented toward reducing or eliminating the dissonance" (Festinger, 1957, p. 70).

As antecedents to behavior it is important to know if

these cognitive responses reflect accurate beliefs about AIDS or if they reflect fictional beliefs (beliefs that if translated into behaviors would by themselves neither increase nor decrease exposure to the AIDS virus). As previously mentioned, it is important to know these cognitive responses for they can give an indication of myths or false beliefs about what constitutes safe behavior. Therefore, behavior based on these beliefs may be preventing some individuals from engaging in accurate safe behaviors.

Perceived Risk of Contracting AIDS

Perceived risk or vulnerability to AIDS has been considered one of those factors which may help explain any changes in AIDS related behaviors. Some studies looking at perceived susceptibility have found some unexpected results. On one hand, as would be expected, Charles (1986) found partial support for the hypothesis that perceived threat is significantly related to risk behaviors. Klein et al. (1988) found that those "who considered themselves members of a high risk group and more vulnerable to AIDS were more likely to have decreased their AIDS risk behaviors" (p. 746).

On the other hand, Joseph, Montgomery, Emmons, Kirscht, et al. (1987) found that perceived risk of AIDS has a significant and negative impact on some of the behavioral outcome measures. Another study by Joseph, Montgomery, Emmons, Kessler, et al. (1987) reported that perceived susceptibility is not "related to subsequent positive changes

in behavior or to the development of health beliefs which might facilitate such behavioral risk reduction" (p. 247). And in fact Joseph, Montgomery, Emmons, Kirscht et al. go on to suggest that "a heightened sense of personal risk may have subsequently adverse behavioral consequences" (p. 241). Temoshok et al. (1987) found no relationship between perceived risk and any changes in sexual behavior among homosexual/bisexual populations and the heterosexual population.

This last set of findings then appears to contradict the accepted notion that perceived personal vulnerability usually increases an individual's precautionary behavior (Perloff, 1982). As noted earlier, a possible explanation for these phenomenon may have to do with the fear or anxiety that may be associated with AIDS. This fear may have a negative impact on adaptive coping by immobilizing resources that otherwise may have been helpful. Fear, then, may interact with notions of perceived personal vulnerability to lower individuals' ability for adaptive functioning. In this way those individuals with high fear and high perceived personal vulnerability may paradoxically perform less adaptive behaviors which leads to an increase in high risk behaviors or to an inability to decrease them.

It is important to note that inconsistent or contradictory results among any of the variables studied may reflect a particular characteristic of the populations sampled within each study. This point is noteworthy in that

many studies were conducted among "high risk" populations, namely homosexual and bisexual men, which may respond differently than "low risk" populations. In fact, finding yourself in a "high risk" population may exacerbate fear or anxiety about AIDS, therefore, negating or affecting expectations about vulnerability.

Fear of AIDS

Fear of AIDS may be another factor underlying or influencing behavioral responses to the threat of AIDS. It is generally accepted that as fear increases, the probability that a person will accept and act on the safety recommendations decreases (Janis, 1984). In other words, too much fear or anxiety decreases adaptive coping. Bauman & Siegel point out that fear "tends to interfere with taking direct action, which may be necessary in certain situations to optimize other goals, such as safety and survival (p. 333). AIDS is linked with fear and anxiety for many reasons. It is possible that fear may be instrumental in preventing changes in people's behavior. Unfortunately, fear of AIDS has not been addressed by many studies. However, in one study in which fear of AIDS was measured, Temoshok et al. (1987) found that general fear of AIDS was negatively correlated with knowledge about AIDS, suggesting perhaps a negative circular relationship between knowledge and fear. This same study, however, found a positive relationship between fear of AIDS and behavior change in certain groups.

This indicates that the influence of fear on people's behaviors and AIDS related attitudes is complex and still not well understood.

Homophobia

AIDS is in many circles still viewed primarily as a gay disease (Kinnier, 1986). Therefore, the presence or absence of antigay attitudes (homophobia), may play a role in how people think about AIDS and, therefore, in how they behaviorally respond to the AIDS threat. Again, not many studies have been conducted which have examined the relationship between homophobia and AIDS related behaviors. However, recent studies reported by Herek and Glunt (1988) that have looked at the relationship between homophobia and AIDS related knowledge have found that "respondents who express negative attitudes toward gay people are more likely than others to be poorly informed about AIDS" (p. 888). Temoshok et al. (1987) did study homophobia and its relationship to AIDS related behaviors and knowledge. They found that antigay attitudes were negatively correlated to AIDS knowledge but positively correlated to AIDS related behaviors, at least in some groups. The somewhat unexpected relationship between antigay attitudes and behavior may be an indication of the need for more research in this area.

Locus of Control

Personality variables may also play a role in influencing people's AIDS related behaviors. Locus of

Control may be one such personality variable. It is generally believed that perceived control over an event will influence an individual's behavior toward that particular event (Rotter, 1966). For example, according to Lazarus and Folkman (1984) "a general belief about an internal locus of control ... yields more effort and persistence in achievement situations than belief in an external locus" (p. 160). Strickland (1978) in her review of the literature concludes that:

when faced with health problems, internal individuals [people who perceive the events that happen to him/her as dependent on his/her own behavior] do appear to engage in more generally adaptive responses than do externals [people] who perceive the events that happen to him/her as the result of luck, chance, fate, or powers beyond one's personal control and understanding] (p. 1205).

It is expected then, that a person's perceptions about his/her ability to control his exposure to the AIDS virus and to contracting the disease will affect his behavioral response to the threat of AIDS. Klein et al. (1987) found that lack of perceived control over an outcome was correlated with an increase in high risk behaviors. In support of the findings on locus of control, Charles (1986) reported that both personal efficacy and response efficacy, the two components of Bandura's (1977) self-efficacy expectation theory, were significantly related to risk behaviors. The similarity between the two constructs (locus of control and self-efficacy expectations) then brings support to the premise that locus of control may indeed be an important

factor or predictor in people's AIDS related behaviors.

Rationale for the Study

Most of the research discussed above has had some problems with its ability to generalize to the heterosexual or "low risk" populations. Many of the studies concerning AIDS have been done with at risk populations. For example, a review article of published reports on AIDS related behaviors, beliefs, or attitudes (Becker & Joseph, 1988), lists 36 studies. Of these, 23 have looked at behavioral responses to the threat of AIDS. Of the 23 studies that have assessed behavioral change, 19 were done with at risk populations (e.g., homosexual and bisexual men, intravenous drug abusers, prostitutes, hemophiliacs, and female partners of men infected with HIV). Only four studies that have looked at behavioral change were done with "low risk" groups. Of these four studies one was conducted in the United Kingdom and one in San Francisco. The incidence of AIDS in San Francisco and The United Kingdom is very different from most other American cities. San Francisco has one of the highest rates of AIDS in this country. The United Kingdom on the other hand has a much smaller incidence of AIDS than some American cities. The attention and emphasis given to AIDS prevention in both sites is, therefore, likely to be quite different from the average American city. This fact may severely limit the generalizability of the results. Of the other 13 studies that did not measure behavioral change,

seven were done with high risk groups. Of the remaining six, three studies were done with high school students, and two studies were conducted in The United Kingdom. Again, the ability to generalize from previous research is very limited due to the composition of the sampled populations.

It seems necessary for research to focus on the heterosexual population as well. This population has been mostly ignored as far as AIDS related research is concerned. In other parts of the world, AIDS is primarily a heterosexually transmitted disease. Given the low rates of AIDS preventive behaviors exhibited by the heterosexual population in the USA, it appears critical to understand the factors that are precluding appropriate preventive behavior. Furthermore, it is important to study behavior and attitudinal patterns in parts of the country where AIDS has not yet achieved epidemic proportions (unlike New York and San Francisco). Findings from these areas may be more generalizable, as they may better represent the rest of the country in terms of media coverage, level of public concern, and personal and community attitudes.

AIDS is a very unique disease in terms of its modes and patterns of transmission among the population, symptomatology, imperviousness to treatment, and deadliness. This unique set of characteristics may make it difficult to extrapolate or to generalize to AIDS research from patterns or trends found in other health oriented types of research.

The scales used in a number of previously mentioned studies have been limited. Often the knowledge scales are not able to accurately determine peoples' true level of knowledge. In turn, behavioral scales have usually failed to include non-AIDS related behaviors (behaviors which will neither increase nor decrease chances of contracting AIDS). Such behaviors are usually based on fictional beliefs, but people may engage in them on the erroneous assumption that they are actually decreasing their chances of getting AIDS. Such erroneous beliefs may be precluding some individuals from engaging in safe behaviors. Study of behaviors based on such beliefs could indicate whether individuals are unknowingly putting themselves at risk while perhaps thinking that they are being careful.

This study will, therefore, address some of the previous studies' limitations by utilizing more comprehensive and refined scales in order to attain deeper and more accurate levels of analysis. It will also focus on the heterosexual population, and will look at previously unresearched variables, including a cognition scale, an important factor which does not appear to have been taken into consideration in previous studies.

Hypotheses

This study investigates the relationship between a number of variables and AIDS related behavior. Again, the variables to be studied include the following: AIDS related

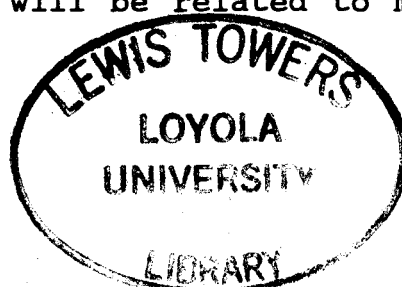
knowledge; AIDS related thoughts (how seriously have they thought about certain AIDS related issues), including those thoughts which reflect accurate beliefs about AIDS and those that reflect fictional or mythical beliefs about AIDS; perceived risk or vulnerability to contracting AIDS, as well as one's own perceived risk of contracting AIDS relative to the perceived risk of others; fear of AIDS; fear of homosexuals or "homophobia"; and Health Locus of Control, including its three components, Internal Health Locus of Control (IHLOC), Chance Health Locus of Control (CHLOC), and Powerful Others Health Locus of Control (POHLOC). Other variables taken into consideration include age, gender, ethnicity and generations the subjects' families have lived in the United States, acquaintance with anyone with AIDS, sexual orientation, and religiosity.

As already discussed, the literature studying the link between the amount of AIDS related knowledge and AIDS related behaviors has yet to find a definite relationship (Archambault & Edwards 1989; Joseph, Montgomery, Emmons, Kessler, et al., 1987; Joseph, Montgomery, Emmons, Kirscht, et al., 1987; Temoshok et al., 1987). It is, therefore, expected that differences in AIDS related behavior will not be directly related to differences in AIDS related knowledge.

According to Leventhal et al. (1984), when studying behavior, the antecedents to the target behaviors (including cognitive antecedents) are as important as the behaviors

themselves. Work like Hoyt and Janis' (1975) and Festinger's (1957) have established the link between cognitive antecedents (i.e. cognitive responses) and behavior. It appears that the relationship between behavior and cognition is important and direct. It is, therefore, expected that the reported presence of thoughts or cognitions that reflect an orientation to safe behaviors (referred to as accurate thoughts) will be related to a report of comparatively safer behavioral practices. It is expected that the presence of thoughts that reflect fictional beliefs (referred to as fictional thoughts) about AIDS will be related to higher scores in behaviors that reflect the same fictional beliefs. It is also expected that the presence of thoughts that reflect accurate beliefs about AIDS will be related to higher scores in behaviors that reflect accurate beliefs about AIDS.

Again, according to Rotter (1966), there is a strong relationship between perceived control and a behavioral response in a way such that perceived control over an event will influence an individual's behavior toward that particular event. Based on this theory, it is expected that there will be a relationship between IHLOC, CHLOC, POHLOC and AIDS related behaviors. It is expected that high scores in IHLOC will relate to safer AIDS related behaviors, while a high score on CHLOC and/or POHLOC will be related to more risky AIDS related behaviors.



On the topic of personal vulnerability to AIDS and its relationship to AIDS related behavior, the literature seems to be somewhat contradictory. Some of it appears to suggest that those individuals who consider themselves to be at a higher risk for contracting AIDS will adopt safer behavior (Charles, 1986; Klein et al., 1987). Others seem to suggest the opposite. In other words, those who consider themselves to be at a higher risk will be less likely to adopt safer behavior (Joseph, Montgomery, Emmons, Kessler, et al., 1987; Joseph, Montgomery, Emmons, Kirscht, et al., 1987; Temoshok et al., 1987). Still, others have reported about studies which have found that knowledge of AIDS risk was not significantly related to risk behavior change over time (Stall, Coates, & Hoff, 1988). Based on this, then, no prediction is being made as to the relationship between perceived risk and behavior. By the same token, no prediction is being made about the relationship between relative sense of risk to AIDS as compared to others and AIDS related behaviors. The nature of these relationships will be explored, however.

The general literature on the effects of fear on behavior suggests that as fear increases effective coping seems to decrease (Janis, 1984). However, the literature that specifically applies to AIDS, although very limited, seems to be contradictory. It suggests that fear of AIDS may be a catalyst in increasing safe behaviors (Temoshok et al.,

1987). Based on this, it is expected that there will be a relationship between fear of AIDS and AIDS related behaviors, although the direction of this relationship is also unclear.

Homophobia or fear of homosexuals or antigay attitudes has not been widely researched in its relation to AIDS related behaviors. The available literature (Temoshok et al., 1987) suggests that high homophobia scores are related to safer behavior. According to this small piece of evidence, it is expected that high homophobia scores will be associated with safer behavior.

The population from which the sample will be drawn is considerably homogeneous in terms of age range; mostly late teens and early twenties. Therefore, no significant differences in age are expected. However, if significant differences in age were to be found, it would be expected that younger individuals would be linked to relatively less safe behaviors than older individuals. Perception of invulnerability by children and adolescents may account for such differences (Baum & Nesselhoff, 1988). It appears that a "threat" or the threat of AIDS in specific is not always accurately perceived by adolescents as they may underestimate personal risk (Morin, 1988).

Ethnicity is another variable which may explain differences in AIDS related behavior. In an analysis based on this variable, a slight difference in AIDS related behaviors would be expected between whites and minorities.

Research has shown that minorities, specifically "blacks and Hispanics are overrepresented among people with AIDS in most categories of transmission" (Herek & Glunt, 1988). It would be expected that blacks and Hispanics be linked to less safe AIDS related behaviors than whites. Furthermore, Fisher (1988) reminds us that "AIDS preventive behaviors may be inconsistent with 'machismo' values in some racial and ethnic groups" (p. 915). However, any differences would be expected to be very slight due to educational and other factors that seem to dilute differences between whites and minorities in people who pursue higher education. As an indirect measure of ethnic and/or cultural diversity, the generations a family has lived in the United States is also a variable which, like ethnicity, may also explain differences in reported behavior. This variable is, therefore, expected to behave in the same way as ethnicity. With the exception of blacks, people who report few generations in the United States are expected to be associated with higher behavioral risk than those who report more generations in the United States.

Strength of religious beliefs or religiosity is usually associated with conservative positions on questions of personal morality and ethics (Hendrick & Hendrick, 1987). Therefore, differences in AIDS related behaviors may be attributable to an individual's religiosity. As research suggests (Mahoney, 1980), it is expected that high scores on religiosity will be associated with comparatively safer AIDS

related behavior than those with lower religiosity scores.

Sexual orientation may also be a variable linked to differences in the report of AIDS related behaviors. As it was previously discussed, homosexual and bisexual individuals seem to be engaging in comparatively safer AIDS related behavior than heterosexuals (Crewdson, 1987; Fineberg, 1988; Walters, 1988). If the numbers of homosexual or bisexual individuals in this sample is large enough to warrant an analysis based on this variable, it would be predicted that homosexuals and bisexuals would then report comparatively safer AIDS related behaviors than heterosexuals.

Personal acquaintance with someone with AIDS is also a factor that may influence AIDS related behavior. However, the literature that has addressed this variable has found that personal knowledge of an AIDS victim does not affect AIDS related behavior (Archambault & Edwards, 1989; Des Jarlais & Friedman, 1988).

At this point the literature does not point to any gender differences in terms of AIDS related behavior; therefore, no differences in AIDS related behaviors are expected in this study based on gender.

CHAPTER II

METHOD

Pilot Study

Purpose

A pilot study was conducted with several purposes. One of the purposes was to get a reasonable number of reliable items to use in the knowledge questionnaire. The second purpose was to test out the general procedures for other major measures to be used later in the main study. This included oral and written directions as well as gauging approximate time to complete the questionnaires. The third purpose was to check the questionnaires respective internal consistencies.

Subjects

The pilot study was conducted with 24 volunteer participants from introductory psychology classes at Loyola University. The sample consisted of 11 males and 13 females between the ages of 17 and 24.

Instrumentation

AIDS Knowledge Questionnaire

A 96 item knowledge questionnaire was put together from questions adapted from other AIDS knowledge surveys (DiClemente et al., 1987; Sherr, 1987) and from educational

and scientific literature (Centers for Disease Control, 1983; Coates, Temoshok, & Mandel, 1984; Koop, 1987) (see Appendix A). The items in this questionnaire were to be answered as either True or False. Right answers were given a value of 1 while wrong answers were given a value of zero. The total score for each individual was calculated by summing across knowledge items' scores. Of the original 96 items, forty of the most highly reliable items were retained for use in the main study. This scale had a Cronbach alpha reliability coefficient of .84.

AIDS Related Behavior Questionnaire

An AIDS related behavior questionnaire was also tested in the pilot study (see Appendix B). This 25 item behavior questionnaire was composed of 12 statements which measured AIDS related risk behaviors and 13 statements which measured fictional behaviors (behaviors that neither increase nor decrease chances of exposure to the AIDS virus). Part A included the first 16 statements. These statements asked the subjects to rate their frequency of behavior along a six point scale that ranged from "never engage in this behavior" to "always engage in this behavior." Part B included nine statements and involved asking subjects to rate their agreement along a six point scale that ranged from "I agree" to "I disagree." Nineteen statements were written in a positive direction while six statements were written in a negative direction. Those written in a negative direction

were reverse coded for scoring purposes. Total score on the AIDS related behavior questionnaire was computed from the sum of all 25 item's scores. High scores mean safer AIDS related behaviors. Cronbach alpha reliability coefficient of the total AIDS related behavior scale was .74. Cronbach alpha reliabilities of the risk behavior subscale and of the fictional behavior subscale were .66 and .58 respectively.

AIDS Related Thoughts Questionnaire

A 25 item survey inquiring about AIDS related thoughts was also administered (see Appendix C). This survey was composed of 14 questions about thoughts reflecting accurate beliefs (referred to as accurate thoughts) about AIDS prevention and 11 questions about thoughts reflecting fictional beliefs (referred to as fictional thoughts) about AIDS prevention. Subjects were asked to rate how seriously they had thought about the beliefs reflected in each statement on a six point scale that ranged from "not seriously thought about it" to "seriously thought about it." A total score was computed by adding all items. Subscale scores were calculated by adding scores for the respective subscale items. The Cronbach alpha reliabilities of the composite scale, the accurate thoughts subscale, and the fictional thoughts subscale were .90, .87, and .85 respectively.

Vulnerability to AIDS

A four item questionnaire reflecting perceived vulnerability to AIDS was also administered (see Appendix D). The first two items assessed perceptions of personal vulnerability to AIDS, while the second two items assessed one's sense of vulnerability relative to one's sense of others' vulnerability. Questions were extracted and adapted to fit the topic of AIDS from a Perloff's (1982) scale on perceived vulnerability to victimization. Subjects rated their answers along a 7-point scale.

Procedure

All subjects were required to complete the questionnaires in a classroom setting. Prior to the commencement of the experiment all subjects were required to read and sign consent forms. This form briefly explained the purpose of the study, safeguards for confidentiality, and the right to cease participation at any time without incurring penalties. Brief oral directions were provided. The questionnaires were given in four different orders for the purpose of controlling for an order effect in responses.

Main Study

Subjects

A sample of 136 volunteer participants from psychology classes at Loyola University was obtained. The sample consisted of 63 male subjects between the ages of 18 and 35 ($M= 20.26$, $SD= 2.73$) and 73 female subjects between the ages

of 17 and 26 ($M= 19.58$, $SD= 1.78$).

Instrumentation

AIDS Knowledge Questionnaire

AIDS related knowledge was measured with the 40 item questionnaire refined in the pilot study. Seven additional items with low reliability were not used in arriving at the final scores (see Appendix E). For the main study sample, Cronbach alpha reliability of the final 33 items was calculated at .68. Part A of the knowledge questionnaire asked that each item be answered with a simple true or false. Right answers were given a value of 1 while wrong answers were given a value of -1. These values were assigned in order to obtain a wide range of possible scores (from 6 to -6) when calculating the product of each item in Part A and its corresponding confidence level in Part B. In part B respondents were asked to rate along a six point scale their confidence in the responses they gave in Part A. The scale ranged from "not confident" (a value of 1) to "confident" (a value of 6). A composite score for knowledge was obtained by summing the products of each item in Part A and its corresponding confidence level in Part B. Two subscales of knowledge were constructed: applied knowledge (which reflected everyday, practical knowledge) and technical knowledge (which reflected indepth, scientific, and epidemiological knowledge). The former subscale, constructed from 17 items, and the latter subscale, constructed from 16

items, had Cronbach alpha reliability coefficients of .58 and .52 respectively.

AIDS Related Behaviors Questionnaire

The same AIDS Related Behavior scale used in the pilot study was used in the main study. In the main study sample, the composite scale, the AIDS related risk behaviors subscale, and the fictional behaviors subscale had Cronbach alpha reliabilities of .72, .64, and .57 respectively.

AIDS Related Thoughts Questionnaire

The same AIDS related thoughts scale used in the pilot study was used in the main study. In the main study sample, Cronbach alpha reliabilities of the composite scale, the fictional beliefs subscale, and accurate beliefs subscale were .88, .83, and .86 respectively.

Homophobia and Fear of AIDS Scales

Subjects also completed a 14 item Fear of AIDS Scale and a seven-item Homophobia Scale imbedded as one survey (Bouton et al., 1987) (see Appendix F). Cronbach alpha reliability coefficients reported in the literature were .80 and .89 respectively. Subjects were asked to rate their agreement with each statement along a 5-point scale that ranged from "strongly agree" to "strongly disagree". Negative items were reverse coded for scoring purposes. Total scores for both scales were then calculated by summing across appropriate individual items. In this sample, Cronbach alpha reliabilities of the Fear of Aids scale and

the homophobia scale were .70 and .83 respectively.

Multidimensional Health Locus of Control Scales

The Multidimensional Health Locus of Control Scales (MHLOCS) were also used (Wallston, Wallston, & DeVellis, 1978) (see Appendix G). As already discussed, the MHLOCS are composed of the Internal Health Locus of Control or IHLOC (which measures internal expectancies of control), Powerful Others Health Locus of Control or POHLOC (which measures one of the two components of external expectancies of control), and the Chance Health Locus of Control or CHLOC (which measures the second of the two components of external expectancies of control) scales. These three scales are all imbedded in one survey. Wallston et al. had previously reported Cronbach alpha coefficients of .77, .67, and .75 respectively. Each scale was composed of six items. Subjects were asked to rate their agreement with each item along a six point scale that ranged from "strongly disagree" to "strongly agree". Total score for each scale was calculated by adding the scores for their respective items. In this sample, IHLOC, POHLOC, and CHLOC had Cronbach alpha reliability coefficients of .58, .58, and .64 respectively.

Vulnerability to AIDS

The same questionnaire utilized in the pilot study was utilized in the main study.

Demographic Data

Respondents were also asked to report basic demographic information (see Appendix H). The demographic variables included age, gender, ethnicity, sexual orientation, generations family had lived in the United States, and knowledge of anyone with AIDS. A question about religiosity was also included.

Procedure

All subjects were required to complete the questionnaires in a classroom setting. Prior to the commencement of the experiment all subjects were required to read and sign a consent form. This form briefly explained the purpose of the study, safeguards for confidentiality and the right to cease participation without incurring penalties at any time. Brief oral directions were provided. The questionnaires were given in six different orders for the purpose of controlling for an order effect in responses.

CHAPTER III

RESULTS

Correlates of AIDS Related Knowledge, AIDS Related Technical Knowledge, and AIDS Related Applied Knowledge

The total number of subjects was randomly divided into two samples ($n=68$, in sample 1; $n=65$, in sample 2). Two samples were used for the purpose of cross-validating the Pearson Correlations calculated among the variables. Only those variables correlated at the .10 level or below in both samples were considered to be significantly correlated. Sexual orientation was not included in the correlation as there were only three subjects who classified themselves as non-heterosexual.

Table 1 shows that AIDS related knowledge was negatively and significantly correlated to fictional AIDS related thoughts ($r=-.303$, $p<.02$ in sample 1; $r=-.216$, $p<.08$ in sample 2) POHLOC ($r=-.225$, $p<.07$, in sample 1; $r=-.420$, $p<.001$ in sample 2) and CHLOC ($r=-.229$, $p<.07$ in sample 1; $r=-.377$, $p<.003$ in sample 2). In other words, lower scores on fictional AIDS related thoughts (i.e., low number of thoughts that reflect fictional beliefs about AIDS), POHLOC (i.e., low external expectancies of control) and CHLOC (i.e., low internal expectancies of control) were all associated

with higher scores on overall knowledge. Overall AIDS knowledge was also significantly and negatively related to homophobia ($r=.297$, $p<.02$ in sample 1; $r=-.235$, $p<.06$ in sample 2) and ethnicity ($r=.307$, $p<.02$ in sample 1; $r=-.324$, $p<.008$ in sample 2). That is, minorities, and people who displayed more homophobia scored lower on overall knowledge.

Similarly, applied AIDS knowledge (see Table 1) was also significantly and negatively related to POHLOC ($r=-.236$, $p<.06$ in sample 1; $r=-.364$, $p<.004$ in sample 2), CHLOC ($r=-.230$, $p<.06$ in sample 1; $r=-.305$, $p<.02$ in sample 2), ethnicity ($r=.266$, $p<.03$ in sample 1; $r=-.228$, $p<.07$ in sample 2), and homophobia ($r=-.362$, $p<.003$ in sample 1; $r=-.219$, $p<.08$ in sample 2). Only ethnicity seemed to be significantly correlated to technical knowledge, albeit negatively correlated ($r=-.251$, $p=.04$ in sample 1; $r=-.363$, $p<.003$ in sample 2). Gender was not significantly correlated to any of the knowledge scales.

Correlates of AIDS Related Behaviors.

Fictional AIDS Related Behaviors and AIDS Risk Behaviors

The hypothesis regarding the relationship between thoughts and behaviors was supported. As expected, it was found that overall AIDS related behaviors were positively and significantly correlated to AIDS related thoughts ($r=.330$, $p<.007$ in sample 1; $r=.347$, $p<.006$ in sample 2 -- see Table 2). In addition it was found that overall AIDS related behaviors were significantly and positively related to

Table 1

Pearson Correlation Matrix for Knowledge in Sample 1 and Sample 2

	AIDS Related Knowledge		Applied Knowledge		Technical Knowledge	
	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2
AIDS Rel. Know.	-----	-----				
Appl. Know.	.804*	.912*	-----	-----		
Tech. Know.	.872*	.893*	.410*	.629*	-----	-----
AIDS Rel. Beh.	-.187	-.325*	-.162	-.255*	-.153	-.335*
AIDS Risk Beh.	-.153	-.264*	-.090	-.191	-.160	-.289*
Fict. AIDS Beh.	-.170	-.219*	-.212*	-.197	-.086	-.198
AIDS Rel. Tht.	-.114	-.059	-.123	-.025	-.074	-.083
Accurate Tht.	.062	.078	.054	.122	.050	.014
Fict. Tht.	-.303*	-.216*	-.311*	-.205	-.209*	-.185
IHLO	.046	-.090	.045	-.118	.033	-.041
POHLOC	-.225*	-.420*	-.236*	-.364*	-.151	-.395*
CHLOC	-.229*	-.377*	-.230*	-.305*	-.163	-.379*
Phobia	-.297*	-.235*	-.362*	-.219*	-.157	-.205
Fear	-.172	-.070	-.389*	-.126	.057	.005
Vulner. Self	.173	-.110	-.055	-.040	-.220*	-.164
Vulner. Other	-.068	.134	-.078	.138	-.040	.102
Ethnicity	-.307*	-.324*	-.266*	-.228*	-.251*	-.363*
Gens. in USA	.206*	.146	.126	.151	.213*	.112
AIDS Exp.	.265*	-.023	.256*	-.015	.196	-.027
Gender	.197	.067	.130	-.067	.195	.130
Religiosity	-.214*	-.095	-.217*	-.080	-.149	.086
Age	.168	.124	.108	.023	.169	.210*

* p value is significant at the .10 level or below, df=231

fictional AIDS related thoughts ($r=.247$, $p<.05$ in sample 1; $r=.340$, $p<.007$ in sample 2) and accurate AIDS related thoughts ($r=.292$, $p<.02$ in sample 1; $r=.280$, $p<.03$ in sample 2 -- see Table 2). In other words, those subjects who said that they had thought seriously about certain AIDS related material, both fictional and accurate, appeared to be involved in overall behaviors that they thought would prevent exposure to the AIDS virus. These behaviors were a combination of both, true risk behaviors and fictional behaviors. Overall, the average scores in the AIDS risk behavior scale ($M=54.00$, $SD=9.02$ in sample 1; $M=53.77$, $SD=8.53$ in sample 2) represent only 75% of the possible maximum score. This reflects a relatively large margin of risk taking in this sample.

Additional findings showed that AIDS risk behaviors were positively and significantly correlated to overall AIDS related thoughts ($r=.305$, $p<.02$ in in sample 1; $r=.381$, $p<.004$ in sample 2) and accurate AIDS related thoughts ($r=.351$, $p<.004$ in sample 1; $r=.392$, $p<.004$ in sample 2 -- see Table 2). People who scored high in overall AIDS related thoughts and those who scored high in accurate AIDS related thoughts displayed less risk behavior. However, those that reported serious thought about AIDS issues that reflected fictional beliefs about AIDS were not engaging in less risky behaviors (more preventive behavior).

Findings regarding POHLOC and AIDS related behaviors

did not support the original hypothesis. POHLOC was found to be significantly and positively related to overall AIDS related behaviors ($r=.264$, $p<.04$ in sample 1; $r=.404$, $p<.002$ in sample 2 -- see Table 2). In other words, contrary to expectations subjects who think that outside forces or people are highly influential in their own health seem to engage in less AIDS related risk behaviors. Also, contrary to expectations, both IHLOC, and CHLOC were not found to be significantly related to AIDS related behaviors.

Perceptions of one's own vulnerability also contradicted expectations, as they were not significantly related to AIDS related behaviors. However, perceptions of one's own vulnerability relative to one's perception of others' vulnerability were significantly and negatively correlated to overall AIDS related behaviors ($r=-.344$, $p<.005$ in in sample 1; $r=-.209$, $p<.08$ in sample 2 -- see Table 2). It appears that low perceptions of vulnerability relative to others are associated with less risky overall AIDS related behaviors. Although significant correlations between vulnerability relative to others and AIDS risk behaviors and fictional AIDS related behaviors were not present, the same trend observed with overall AIDS related behaviors was observed with these variables as well. However, perceptions of one's own vulnerability contradicted expectations, as they were not significantly related to AIDS related behavior.

In addition, fictional AIDS related behaviors were

found to be positively and significantly correlated to fictional AIDS related thoughts ($r=.284$, $p<.02$ in sample 1; $r=.294$, $p<.02$ in sample 2), POHLOC ($r=.222$, $p<.07$ in sample 1; $r=.317$, $p<.01$ in sample 2), and fear of AIDS ($r=.210$, $p<.09$ in sample 1; $r=.359$, $p<.009$ in sample 2 -- see Table 2). In other words, AIDS related thoughts reflecting fictional or innaccurate beliefs about AIDS, POHLOC, and fear of AIDS were associated with more fictional behavior.

The hypothesis regarding the relationship between AIDS related knowledge and AIDS related behaviors was supported. That is, there was no relationship between knowledge and behavior. Furthermore, the two knowledge subscales showed no relationship to the two behavior subscales. Paired means t tests performed between applied knowledge and technical knowledge revealed that applied knowledge ($M=62.81$, $SD=19.47$ in sample 1; $M=61.69$, $SD=23.60$ in sample 2) was significantly higher than technical knowledge ($M=42.30$, $SD=23.65$ in sample 1; $M=39.64$, $SD=21.67$ in sample 2) in both sample 1 and 2 ($t=9.180$, $p<.001$; $t=7.145$, $p<.001$ respectively).

The means of the applied knowledge scores previously reported represent 81% (in sample 1) and 80% (in sample 2) of the maximum possible score. This reflects a substantial level of knowledge in this sample.

The hypothesis regarding the relationship between ethnicity and behavior was not supported. Ethnicity was not significantly related to overall AIDS related behavior or its

two subscales.

The hypothesis regarding the relationship between gender and AIDS related behavior was supported, that is, gender and behavior were not significantly related. However, although non-significant, a trend was observed for women to be engaged in less AIDS risk behaviors and overall AIDS related behaviors than men.

As expected, age was not significantly related to AIDS related behavior (see Table 2). However, homophobia, fear of AIDS, and generations a subject's family had lived in the USA contradicted the initial hypotheses, as they were all found not to be significantly related to AIDS related behavior.

Contrary to the initial hypothesis, personal knowledge or acquaintance with someone with AIDS was found not to be significantly related to AIDS related behavior (see Table 2). However, only a small number of respondents reported personal acquaintance with someone with AIDS (10 and 12 subjects in samples 1 and 2 respectively).

Contradicting initial expectations, religiosity was not significantly related to AIDS related behavior (see Table 2). However, respondents did not show much variability in this scale. In fact, of the 68 subjects in Sample 2, 66% or 45 subjects scored either a 4 or a 5 (in a scale of 6), therefore, failing to appropriately discriminate between subjects.

Table 2

Pearson Correlation Matrix for Behavior in Sample 1 and Sample 2

	AIDS Related Behavior		Risk Behavior		Fictional Behavior	
	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2
AIDS Rel. Beh.	-----	-----				
Risk Beh.	.861*	.900*	-----	-----		
Fict. Beh.	.694*	.721*	.260*	.368*	-----	-----
AIDS Rel. Tht.	.330*	.347*	.305*	.381*	.228*	.160
Accurate Tht.	.292*	.280*	.351*	.392*	.116	.020
Fict. Tht.	.247*	.340*	.120	.265*	.284*	.294*
IHLO	-.070	.043	-.120	.028	.028	.066
POHLOC	.264*	.404*	.194	.382*	.222*	.317*
CHLOC	-.073	.218*	-.098	.197	.039	.158
Phobia	.104	.148	.011	.037	.136	.257*
Fear	.186	.088	.108	-.094	.210*	.359*
Vulner. Self	.038	.057	.000	.073	.063	.033
Vulner. Other	-.344*	-.209*	-.283*	-.177	-.221*	-.164
Ethnicity	.031	.239*	.063	.194	.064	.186
Gens. in USA	-.026	-.131	-.129	-.085	.092	.167
AIDS Exp.	-.098	-.073	.042	-.101	-.158	.017
Gender	-.134	-.209*	-.137	-.261*	-.122	-.061
Religiosity	.275*	.069	.230*	.081	.190	-.011
Age	.056	-.179	-.028	-.186	.099	-.110

* p value is significant at the .10 level or below, df=231

Other Correlates

Perceived vulnerability of self showed a positive and significant correlation with overall AIDS related thoughts ($r=.224$, $p<.07$ in sample 1; $r=.407$, $p<.001$ in sample 2 -- see Table 3).

Fear of AIDS was found to be significantly and positively correlated to fictional AIDS related thoughts ($r=.506$, $p<.001$ in sample 1; $r=.321$, $p<.008$ in sample 2 -- see Table 3). Homophobia and fictional AIDS related thoughts were also highly positively correlated with each other ($r=.393$, $p<.002$ in sample 1; $r=.231$, $p<.09$ in sample 2). It was also found that fear of AIDS was positively and significantly associated with homophobia or antigay attitudes ($r=.424$, $p<.001$ in sample 1; $r=.484$, $p<.001$ in sample 2 -- see Table 4).

Prediction of AIDS Related Behaviors

In order to explore the ability of the independent variables to predict AIDS related behaviors (high scores meaning safer behavior than low scores), two regression analysis were performed on the total sample. The first regression analysis incorporated the following factors as the independent variables: applied and technical AIDS related knowledge, fictional and accurate AIDS related thoughts, Internal Health locus of Control (IHLOC), Powerful Others Health Locus of Control (POHLOC), Chance Health Locus of Control (CHLOC), homophobia, fear of AIDS, and self-

Table 3

Pearson Correlation Matrix for Thoughts in Sample 1 and Sample 2

	AIDS Related Thoughts		Accurate Thoughts		Fictional Thoughts	
	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2
AIDS Rel. Thts.	-----	-----				
Accurate Thts.	.875*	.909*	-----	-----		
Fict. Thts.	.763*	.849*	.354	.551*	-----	-----
IHLO	.036	.042	.116	.035	-.086	.039
POHLOC	.102	.362*	-.004	.286*	.201	.361*
CHLOC	.010	.102	-.116	.102	.173	.076
Phobia	.149	.022	-.080	-.147	.393*	.231*
Fear	.372*	.132	.158	-.040	.506*	.321*
Vulner. Self	.224*	.407*	.200	.357*	.167	.362*
Vulner. Other	.184	.131	.183	.140	.110	.085
Ethnicity	-.156	.130	-.135	.043	-.121	.206
Gens. in USA	.110	.130	.106	.197	.070	.011
AIDS Exp.	.208*	.089	.328*	.055	-.036	.108
Gender	.057	-.015	.037	-.045	.060	.027
Religiosity	.010	-.038	-.027	-.146	.055	.109
Age	.089	.045	.207*	.052	-.104	.023

* p value is significant at the .10 level or below, df=231

Table 4

Pearson Correlation Matrix for Homophobia, Fear, and Vulnerability Self
in Sample 1 and Sample 2

	Homophobia		Fear		Vulnerability Self	
	Sample 1	Sample 2	Sample 1	Sample 2	Sample 1	Sample 2
Homophobia	-----	-----				
Fear	.424*	.484*	-----	-----		
Vulner. Self	-.146	.029	-.049	-.002	-----	-----
Vulner. Other	-.010	.029	-.060	.172	.577*	.539*
Ethnicity	.002	.120	.015	.036	-.053	.145
Gens. in USA	-.151	-.138	-.020	-.070	-.045	.146
AIDS Exp.	-.250*	-.168	.074	-.031	.104	.202
Gender	.151	.286*	.104.	.132	-.148.	.049
Religiosity	.223*	.184	.061	.142	.034	-.180
Age	-.167	-.104	-.010	-.116	-.153	-.048

* p value is significant at the .10 level or below, df=231

perceptions of vulnerability to AIDS, and perceptions of one's own vulnerability to AIDS relative to one's perceptions of others' vulnerability. Of these only accurate thoughts, POHLOC, and vulnerability relative to others' were significant predictors of AIDS related behaviors (see Table 5). High scores for accurate thoughts and POHLOC were associated with higher frequencies of preventive behavior (lower frequencies of risk behaviors), while low perceptions of vulnerability were associated with higher frequencies of preventive behaviors.

A second regression explored the ability of the demographic variables to predict AIDS related behaviors in the total sample. These variables included religiosity, ethnicity, gender, age, sexual orientation, knowledge of anyone with AIDS, and number of generations in the United States. The results of this regression indicated that only gender and religiosity were significant predictors of AIDS related behaviors (see Table 6). Males were associated with riskier behavior than females. Subjects who reported being high in religiosity were associated with less risky behavior.

In order to establish if these results were sample-specific, simultaneous regressions were performed on the two randomly selected samples of the original subjects. A simultaneous regression incorporating the significant predictor variables found in the previous two regressions was performed in each sample. Only those variables found to be

Table 5

Regression Analysis for Predicting AIDS Related Behaviors
in the Total Sample

Variable	Beta Weight	Prob
Applied Knowledge	-.068	.484
Technical Knowledge	-.131	.167
Accurate Thoughts	.276	.004 *
Fictional Thoughts	.055	.594
IHLOC	.005	.951
POHLOC	.186	.033 *
CHLOC	-.032	.698
Phobia	.059	.531
Fear	.037	.685
Vulnerability Self	.071	.484
Vulnerability Other	-.367	.000 *

* p value is significant

Table 6

Regression Analysis for Predicting AIDS Related Behaviors
from Demographic Variables in the Total Sample

Variable	Beta Weight	Prob
Ethnicity	.051	.625
Sexual Orientation	.081	.359
Experience with AIDS	-.091	.313
Gender	-.158	.082 *
Religiosity	.146	.098 *
Age	.003	.977
Generations in USA	.037	.707

* p value is significant

significant in both samples were considered to be true predictors of AIDS related behaviors. Therefore, only accurate AIDS related thoughts and POHLOC were significant predictors of AIDS related behaviors (see Table 7).

Prediction of Fictional AIDS Related Behaviors

As previously stated, the AIDS Related Behaviors Scale was composed of fictional AIDS related behaviors and true AIDS risk behaviors. In order to explore the ability of the independent variables to predict each type of behavior, two sets of simultaneous regression analyses were performed on fictional and true risk behaviors.

The independent variables found to be predictors of fictional AIDS related behaviors in the total sample were POHLOC, fear of AIDS, and vulnerability relative to others (see Table 8). No demographic variables were found to be significant predictors of fictional AIDS related behaviors (see Table 9).

In order to cross-validate, simultaneous regressions were performed on the two randomly selected samples. Only POHLOC was found to be a significant predictor of fictional AIDS related behaviors across both samples (see Table 10).

Prediction of AIDS Risk Behaviors

A third set of simultaneous regressions to predict AIDS risk behaviors was performed. Of the independent variables only accurate AIDS related thoughts, POHLOC, and vulnerability relative to others were significant predictors

Table 7

Regression Analyses to Cross-Validate Predictions on AIDS
Related Behaviors

Variable	Sample 1		Sample 2	
	Beta Wt.	Prob	Beta Wt.	Prob
Acc. Thoughts	.203	.097 *	.395	.000 *
POHLOC	.292	.018 *	.256	.009 *
Vulner. Other	-.158	.185	-.482	.000 *
Gender	-.177	.123	-.149	.130
Religiosity	.034	.771	.303	.002 *

* p value is significant

Table 8

Regression Analysis for Predicting Fictional AIDS Related
Behaviors in the Total Sample

Variable	Beta Weight	Prob
Applied Knowledge	-.022	.830
Technical Knowledge	-.041	.685
Accurate Thoughts	-.028	.779
Fictional Thoughts	.162	.146
IHLOC	.082	.327
POHLOC	.186	.046 *
CHLOC	-.009	.916
Phobia	.010	.918
Fear	.199	.049
Vulnerability Self	.061	.574
Vulnerability Other	-.239	.018 *

* p value is significant

Table 9

Regression Analysis for Predicting Fictional AIDS Related
Behaviors from Demographic Variables in the Total Sample

Variable	Beta Weight	Prob
Ethnicity	.129	.226
Sexual Orientation	-.031	.726
AIDS Experience	-.102	.268
Gender	-.060	.518
Religiosity	.076	.396
Age	.050	.586
Generations in USA	.036	.720

Table 10

Regression Analyses to Cross-Validate Predictions on
Fictional AIDS Related Behaviors

Variable	Sample 1		Sample 2	
	Beta Wt.	Prob	Beta Wt.	Prob
POHLOC	.273	.020 *	.208	.085 *
Fear	.309	.008 *	.163	.174
Vulner. Other	-.126	.277	-.222	.062 *

* p value is significant

in the total sample (see Table 11). Gender was the only demographic variable to significantly predict AIDS risk behaviors in the total sample (see Table 12).

Cross-validation performed on the randomly selected sample found accurate AIDS related thoughts, POHLOC, and gender to be the only reliable significant predictors of AIDS risk behaviors (see Table 13).

Summary

In short, then, these findings confirmed the hypothesis on the relationship between AIDS related behaviors and AIDS related knowledge. AIDS related knowledge was not significantly related to AIDS related behaviors. Also as expected, overall AIDS related thoughts were significantly and positively related to AIDS related behaviors. High scores in AIDS related thoughts were associated with more preventive behaviors (less risky behaviors). The hypothesis on age was also conformed, as age was not significantly related to any of the variables.

Contrary to expectations, gender was found to be related to AIDS related behaviors, with males being riskier than females. POHLOC's relationship to behavior also contradicted expectatinos, with high scores in POHLOC being related to less risky behavior.

Homophobia, fear of AIDS, IHLOC, CHLOC, ethnicity, generations in the USA, and personal acquaintance with

Table 11

Regression Analysis for Predicting AIDS Related RiskBehaviors in the Total Sample

Variable	Beta Weight	Prob
Applied Knowledge	-.079	.423
Technical Knowledge	-.147	.124
Accurate Thoughts	.434	.000 *
Fictional Thoughts	-.081	.436
IHLOC	-.046	.557
POHLOC	.152	.082 *
CHLOC	-.048	.566
Phobia	-.022	.816
Fear	.030	.746
Vulnerability Self	.063	.537
Vulnerability Other	-.327	.001 *

* p value is significant

Table 12

Regression Analysis for Predicting AIDS Related Risk
Behaviors from Demographic Variables in the Total Sample

Variable	Beta Weight	Prob
Ethnicity	-.002	.983
Sexual Orientation	.116	.184
AIDS Experience	-.053	.554
Gender	-.196	.030 *
Religiosity	.130	.137
Age	-.058	.517
Generations in USA	-.095	.329

* p value is significant

Table 13

Regression Analyses to Cross-Validate Predictions onAIDS Related Risk Behaviors

Variable	Sample 1		Sample 2	
	Beta Wt.	Prob	Beta Wt.	Prob
Acc. Thoughts	.319	.007 *	.433	.000 *
POHLOC	.230	.049 *	.190	.074 *
Vulner. Other	-.154	.174	-.402	.000 *
Gender	-.231	.037 *	-.187	.082 *

* p value is significant

someone with AIDS contradicted initial expectations. All these variables were found not to be significantly related to AIDS related behaviors.

CHAPTER IV

DISCUSSION

Level of Knowledge and Behavior

In general, the results of this study support the hypothesis that level of knowledge about AIDS in itself is not directly related to differences in self-reported AIDS preventive behavior, be that true AIDS risk preventive behavior or fictional AIDS related behavior. Given the substantial applied knowledge and the relative laxity in preventive behavior displayed by the sample, it appears then that lack of effective preventive behavior is not the result of a lack of knowledge. As previously stated, these results are consistent with studies that have looked at the relationship between level of knowledge and behavior (Archambault & Edwards, 1989; Joseph, Montgomery, Emmons, Kessler, et al., 1987; Temoshok et al., 1987). When overall knowledge was divided into its two subscales, applied and technical knowledge, the same finding was evident. This is not to say, however, that level of knowledge is completely unrelated to behavior. In other words, if motivation and other necessary factors needed for behavioral change are present but adequate information about what needs to be altered is lacking, risk behavior may remain unchanged and

fictional or superstitious behavior may increase.

However, the high level of applied knowledge suggests that the information campaign has been fairly successful at imparting knowledge (at least to the part of the population represented by this sample). The relative laxity in preventive behaviors suggest that this knowledge has not been successfully translated into effective prevention strategies.

The relationship between AIDS related thoughts and behavior may also tell us something about the importance of knowledge. The presence of a significant correlation between accurate thoughts and true AIDS risk behaviors was expected. Existence of accurate thoughts is most likely related to or may be a reflection of a certain level of accurate knowledge about AIDS. Availability of accurate knowledge about AIDS may have facilitated or mediated an increase in preventive behaviors that reduce the risk of exposure to AIDS.

Existence of a significant correlation between fictional thoughts and fictional AIDS related behaviors was also observed. Fictional thoughts about AIDS probably reflect the existence of a higher level of inaccurate AIDS related knowledge or low levels of accurate knowledge. Inaccurate knowledge or poor knowledge may indirectly increase fictional or superstitious AIDS related behaviors which, in turn, do not decrease the risk of exposure to AIDS.

In other words, lack of accurate knowledge or the availability of erroneous knowledge may indirectly prevent

protective coping behavior by not aiding the formation of cognitive responses associated with preventive behaviors. On the other hand, availability of accurate knowledge may facilitate effective coping behavior only if incorporated into a process of behavior change. This process includes complex mediating variables which interact with knowledge as they go on to influence a particular behavior.

This interpretation suggests that knowledge is in fact an important factor in effective coping, but only if it can be incorporated into a broader perspective of behavior change. Acquisition of knowledge does not produce or guarantee a desired behavior. However, lack of knowledge certainly precludes the desired behavior. Having knowledge should not be substituted with or equated to readiness or ability to change.

The implications of these findings are serious. They suggest that the current emphasis of the AIDS information campaign on public education is not succeeding in changing the heterosexual public's AIDS risk behaviors. Although at this point in time heterosexual transmission comprises less than 5% of AIDS cases (Heyward & Curran, 1988), in time this rate is expected to increase. Consideration must be given to other parts of the world where AIDS is primarily spread through heterosexual contact (Mann et al., 1988). If transmission patterns in the United States ever shift to that of a primarily heterosexually transmitted disease, the

consequences may be catastrophic given the small impact that knowledge about the disease has had on AIDS risk behaviors in the heterosexual community. For a discussion of possible reasons as to why the information campaign may be faltering in its goal of behavior change, the reader is referred to the first chapter where a more detailed consideration of the problem is provided.

Ethnicity and Behavior

Although minorities, especially blacks and Hispanics seem to be overrepresented among AIDS victims (Heyward & Curran, 1988), in this sample, minorities did not show riskier AIDS related behaviors than whites. In fact, although the correlation was non-significant, it showed a trend for minorities to display somewhat less risky behavior (more preventive behaviors) than whites. These findings, however, are not to be taken as representative of overall minorities' characteristics. As a relatively highly educated sample, the students in this study may not be truly representative of the general minority community. Many minority students who achieve higher levels of education, also tend to show more similarities with white, middle class values than those who do not, therefore, losing some of their representativeness as minorities. This is consistent with studies which suggest that these differences are a function of socio-economic status (SES) rather than race (Weinberg & Collins, 1988). Minorities, specifically Hispanics and

Asians, may also display more sexually conservative attitudes than whites. This is consistent with studies that have found some minority groups (in college) to be less sexually active than whites (Padilla & O'Grady, 1987). Considering that many of the AIDS risk behavior questions are of a sexual nature, it may explain the trend toward more AIDS related preventive behaviors in minorities in this sample. When talking about minorities it is important to acknowledge that these groups differ among themselves. For example, blacks, Hispanics, and Asians possess widely different cultures with characteristics that are unique to their own group. Therefore, it is necessary to study these groups and their AIDS related problems separately.

Generations in USA and Behavior

Generations in the USA was conceptualized as a measure of cultural differences and, therefore, was expected to be related to ethnicity. While a strong relationship between ethnicity and generations in the USA was found, unexpectedly, the number of generations that an individual's family had been living in the USA was not significantly related to AIDS related behaviors. A reason for this finding may have been that blacks, although a minority, scored high on this scale, while Hispanics and Asians scored low. Any significant relationship to behavior based on the number of generations a family had lived in the USA may have been masked by this bimodal distribution exhibited by minorities in this

particular variable.

Another explanation for these findings is that cultural differences (as reflected in the individual's ethnicity and generations in the USA) may not be as related to behavior as it appears. As previously stated, these differences may be more a factor of SES than actual racial, ethnic, or cultural differences. However, the question still remains: is SES really at the base of these behavioral differences, or is it that as a person achieves a higher SES he or she also becomes less culturally distinct?

Gender and Behavior

Although gender was not related to overall AIDS related behaviors, or fictional AIDS related behaviors, it was a significant predictor for AIDS risk behaviors (preventive behaviors). Males seem to behave more recklessly than females. That is, they are less active in exercising AIDS risk preventive measures than females. This may be a reflection of differences in overall sexual attitudes between males and females. In fact, Earle and Perricone (1986) suggest that although differences between men and women are more evident in sexual attitudes, they still exist in terms of sexual behavior, with women being more conservative than men. It is important to note, however, that the ratio of male to female cases of heterosexually transmitted AIDS in the U.S. is 1:3.5 (Heyward & Curran, 1988). This suggests that it can no longer be assumed that women's relatively

conservative sexual attitudes (in relation to men's) will render them less vulnerable to exposure to the AIDS virus. In the age of AIDS, it appears safe to assume that everyone is at risk.

These gender differences in behavior bring up another important point. Does the education campaign need to tailor its message to a specific gender, or is it safe to assume that what is effective for a girl or a woman, will be as effective for a boy or a man? Furthermore, should the campaign target a specific gender or should it give equal emphasis to both genders?

Health Locus of Control and Behavior

As stated in the results section, Powerful Others Health Locus of Control (POHLOC) was correlated with both overall AIDS related behaviors as well as fictional AIDS related behaviors. Based on the literature on locus of control it was expected that differences in control expectancies would be related to differences in behavior. However, the direction of this relationship was unexpected. High scores in CHLOC and POHLOC were expected to be related to more risky AIDS related behavior. By the same token, high scores in IHLOC were expected to be related to more AIDS preventive behaviors. Nevertheless, none of these expectations were fulfilled. High POHLOC was found to be related to safer behavior (more preventive behaviors), and IHLOC and CHLOC were not significantly related to AIDS related behaviors.

These findings may be explained if AIDS is considered a unique health issue, with special and unique characteristics that differ from other health problems. In this scenario, general health locus of control (if such concept exists) may not be an accurate indicator of locus of control with respect to AIDS. Concrete and specific explanations about how AIDS is spread and prevented may make this health concern seem like a much more controllable health concern (even for people who would otherwise score high on CHLOC and POHLOC) than others like cancer or Alzheimer's disease. In the latter two for example, their development may be perceived as the result of hidden and mysterious pathological processes for which there are no satisfactory explanations. The issue of control for these diseases may be different than for AIDS. Therefore, engaging in effective AIDS preventive behavior may be more a function of attitudes toward AIDS in specific rather than of attitudes toward health in general. This suggests that while health locus of control may be a stable and relatively static attitude at a general level, it may be dynamic and situation-dependent at more specific levels. If this is true, it is not surprising that the relationships between the MDHLOC scales and AIDS related behaviors were not as expected. A scale specifically measuring locus of control with respect to AIDS may have found a relationship in the expected directions. A related argument concerns the level of specificity at which health

locus of control and AIDS related behaviors are being measured. It appears that while health locus of control is a general concept, AIDS related behaviors is a specific concept. In other words, these concepts are being measured at different levels of specificity. According to Fishbein and Ajzen (1975) attitudes measured at different levels of specificity will not be correlated in the same way as attitudes measured at similar levels of specificity. This may also explain the weak relationships between CHLOC, IHLOC, and AIDS related behaviors.

Vulnerability and Behavior

The negative correlation between vulnerability relative to others' and overall AIDS related behaviors supports the findings of those studies that have found perceptions of higher risk to be associated with riskier behaviors (Joseph, Montgomery, Emmons, Kirscht, et al., 1987). As it was stated previously, perceptions of high vulnerability may work paradoxically by inhibiting effective coping responses to the threat. High vulnerability may be coupled with higher anxiety which in combination may interfere with direct action (Bauman & Siegel, 1987). This interpretation presents certain challenges for those in charge of developing effective AIDS prevention strategies. The challenge is to portray AIDS as a serious health problem while creating an atmosphere devoid of fear and anxiety. However, before programs that control these factors are planned,

consideration must be given to the body of research that has found opposite results, that is, high vulnerability associated with safer behaviors (Charles, 1986; Klein et al., 1988). A plausible explanation must be found for these contradictory findings if an effective approach is to be developed. Intervention strategies based partly on the wrong set of data may result in negative consequences.

Fear of AIDS and Behavior

A related finding was the positive correlation between fear of AIDS and fictional AIDS related behaviors. It appears that higher fear of AIDS only seems to increase fictional behaviors thought to prevent AIDS but did nothing to increase AIDS preventive behaviors. Fear may have increased fictional behaviors because many of these behaviors (as measured in the scale) are less complex behaviors and non-sexual in nature and, therefore, may be more amenable to change than risk behaviors (many of these were sexual in nature). Fictional behaviors may be less firmly attached to personal, group, or cultural norms and, therefore, may be easier to influence or change. These results, especially lack of a significant correlation between fear of AIDS and AIDS risk behaviors support the research which has found that fear does not increase adaptive functioning.

Age and Behavior

As expected age was found not to be related to AIDS related behavior. This is not surprising given that the

majority of subjects were within two or three years in age of each other. Given the research on adolescents and young adults which suggests that this population is more prone to risk taking than older individuals (Baum & Nesselhoff, 1988; Morin, 1988), it is expected that older individuals would be involved in less risky behaviors.

This has implications in terms of the age range in which the education campaign should be focusing. It seems that given the tendency for young individuals to behave impulsively and to take risks, the education campaign should be concentrating on the young segment of the population. This, in turn, has further implications in terms of what are the best ways to reach and influence that population, what should the content of the message be, how would the message be delivered, who would deliver the message, etc.

Strength of Religious Beliefs and Behavior

Although research suggests that religious students are more sexually conservative than non-religious students (Mahoney, 1980), this study found no relationship between religiosity and AIDS related behaviors. The explanation for this finding may rest in the fact that there was not enough variability in religiosity to establish a significant relationship with AIDS related behaviors. In sample 2, where the correlation failed to attain a significant level, there does not seem to be appropriate discrimination between subjects. However, in sample 1, where there was more

variability in subjects scores, a significant relationship was found. It can be stated then, that although a significant relationship between religiosity and AIDS related behavior was not found, a trend was present in which subjects who reported being more religious were associated with less risky behavior than subjects who reported being less religious.

At a first glance, given their overt behavior, it appears that highly religious individuals may be at a lesser risk of exposure to AIDS than less religious individuals. However, the research literature also suggests that highly religious individuals may not be as knowledgeable about sexually related matters as other people, and in fact, because of the sexual conservatism of their group, they may not experience the group support and acceptance necessary for talking or expressing concerns about sexual matters (Hendrick & Hendrick, 1987; Mahoney, 1980). This attitude may in turn be reflected in less knowledge about AIDS, which itself may be the result of an inability or reluctance to seek or attend to information about AIDS due to anxiety or moralistic reasons. Following this line of logic, a relationship between level of AIDS related knowledge and strength of religious beliefs should be observed.

When knowledge about AIDS and its relationship to religiosity is considered, similar findings become evident. In sample 1 where there is enough variability in religiosity

scores, a clear and significant relationship is observed. In sample 2, where there is not much variability in religiosity scores, the relationship fades. It therefore appears that a trend is present where individuals who consider themselves more religious have less knowledge about AIDS than those who consider themselves less religious.

It seems then that strong religious beliefs may be an asset in terms of preventing AIDS risk behaviors. However, a rigid and dogmatic atmosphere where frank discussion of sexual and other issues is discouraged may be a liability as it may negatively affect the individual's ability to gather or learn important information.

Acquaintance with Someone with AIDS and Behavior

There was no significant relationship between AIDS related behaviors and personal knowledge of or acquaintance with someone with AIDS. However, this finding is somewhat deceiving due to the small number of respondents who reported the experience of knowing someone with AIDS. Results based on such a small number of respondents should probably be considered unreliable and, therefore, non-conclusive. A larger number of respondents is needed in order to establish the true nature of the relationship between these two variables.

Health Locus of Control and Knowledge

If knowledge is in fact necessary but not sufficient for behavior change, then it is also necessary to focus on

those factors that may affect an individual's capacity to attain an appropriate level of knowledge. It is not surprising that POHLOC and CHLOC were negatively correlated with overall AIDS knowledge. These two variables seem to be parts of a single factor of externality which reflects expectancies that factors like luck, fate, chance or powerful others determine health (Wallston, Wallston, & DeVellis, 1987). It is not difficult to explain how people who have these externally based expectancies about health would be less informed about AIDS in general than people with internally based expectancies. People believing that outside forces have control of their health would have little reason to become informed about the disease since being informed would do little to influence those outside factors. These findings are consistent with previous findings on the relationship of external expectancies of control and AIDS information seeking (Price-Greathouse & Trice, 1986). If these factors are indeed influential in people's ability to benefit from knowledge, then the possibilities to appropriately alter these factors must be explored. Are these factors mostly situation-or state- dependent and, therefore, easier to modify, or are these factors more deeply ingrained in the personality and, therefore, more resistant to change? Is health locus of control a single attitude or is it the product of different and specific health related attitudes which as a group make up a general concept of

health locus of control?

Ethnicity and Knowledge

Although minorities were not found to be associated with more risky behaviors, they were found to be associated with lower levels of AIDS related knowledge. Lower levels of AIDS related knowledge in minorities may reflect shortcomings of the information campaign in reaching and/or appropriately informing these groups. Although minorities are overrepresented among AIDS victims, this is the result of higher rates of AIDS in IV drug users rather than higher rates of heterosexually transmitted AIDS in minorities (Heyward & Curran, 1988). This suggests that although knowledge about AIDS in minorities may be deficient, because of the present patterns of transmission, this lack of knowledge among heterosexual non-IV drug users has not been translated into higher infection rates. In other words, at this time, lack of or a deficiency in AIDS related knowledge has not increased infection in heterosexual non-IV drug users (in both whites and minorities). These groups have been relatively unscathed not because of their behavior patterns, but due primarily to the transmission patterns of the virus. If these patterns were to change, AIDS would almost certainly become a much more widespread epidemic. Furthermore, if lower levels of knowledge are found among relatively educated students, it could be extrapolated that among the general minority population the level of knowledge would be even

lower. Again this is of great concern given all the effort that has been invested on education. It suggests that education is failing not just in changing behavior, but in imparting basic knowledge as well.

Homophobia and Knowledge

People scoring lower in homophobia or antigay attitudes are also associated with higher levels of knowledge than those scoring higher in homophobia. This is not surprising. Many people who display antigay attitudes believe that AIDS is in some way or another a punishment to homosexuals for their sexual behavior, or that AIDS is exclusively a homosexual problem (Leischman, 1987). These people may not view AIDS as a threat or a serious health hazard to themselves and, therefore, may be less inclined to seek information about AIDS or to learn the information once it is presented. It may also work in the opposite direction. People who know little about AIDS and how it is transmitted may display an unreasonable fear of homosexuals as they may see homosexuals as a threat to their own health. Although homophobia did appear to be related to level of knowledge, it was not translated into preventive behavior.

Applied and Technical Knowledge

When overall AIDS related knowledge is divided into its components, that is, applied and technical knowledge, it is apparent that applied knowledge accounts for much of the correlation found between overall knowledge and POHLOC,

CHLOC, homophobia, and ethnicity. Applied knowledge could be described as being more personally relevant than technical knowledge. Applied knowledge may be translated into practical actions, while technical knowledge may be just interesting but irrelevant information as far as behavior change is concerned. This lack of relevance may affect the ability to retain this information. Significantly lower scores in technical knowledge tends to support this interpretation. If technical knowledge is considered irrelevant, it may explain its lack of a significant relationship with almost every variable. These conclusions are consistent with research on the difference between explanatory information (information about the processes responsible for the spread of the disease, which seems to be applied in nature) and statistical information (which seems to be technical in nature) (Slusher, 1989). Another plausible explanation is that applied knowledge is more readily available and more emphasized than technical knowledge. This limited availability of technical knowledge may also affect its relationship to other variables.

Homophobia, Fear of AIDS, and

Fictional AIDS Related Thoughts

Fear of AIDS was found to be related to homophobia. This relationship is not surprising. Again, many people associate AIDS with homosexuality and vice versa (Leischman, 1987), therefore, fear of AIDS may be translated into fear of

homosexuals or antigay attitudes. The reverse is also possible. Antigay attitudes may generalize and translate into a fear of AIDS. It also appears that when individuals report that they are frightened of AIDS or have antigay attitudes they also report the existence of more fictional AIDS related thoughts. These thoughts, however, reflect erroneous beliefs about AIDS and are not related to an increase in preventive behaviors. Many of these thoughts reflect beliefs that may be less rigidly tied to important cultural, group, or personal norms than others. Some of these thoughts may be easier to entertain than thoughts about true preventive behaviors which are usually of a sexual nature and, therefore, may be more anxiety provoking, or just less apt to be considered. Fortunately, in this sample, homophobia and fear of AIDS were not related to a decrease in preventive behaviors. Unfortunately, however, they were not associated with more preventive behaviors either.

Homophobia and Religiosity

It is not surprising that level of religiosity was found to be related to level of homophobia. Students who consider themselves more religious, especially among students in a Catholic institution, may have religious beliefs which reflect the strict Catholic beliefs and attitudes about homosexuality. However, as already stated, neither of these attitudes was related to AIDS related behaviors.

Suggestions for an Effective Information Campaign

In order to increase the effectiveness of the education campaign, many factors must be taken into consideration. For example, one of those factors is the ability to recognize the existence of different groups in the community, and then, to adapt the campaign to the diverse needs of each group. For instance, Hispanics, blacks, and homosexuals may need to be reached through different means. Leischman (1987) suggests that to reach Latinos, family structures and health providers need to be utilized. Churches could be effective in reaching blacks and bars could be used as a mean to reach homosexuals.

Another factor to consider is that the effectiveness of the message itself depends on many variables that enhance or limit its ability to induce behavior change. Factors like what type of message to deliver, who delivers the message, how the message is delivered, and the characteristics of the group for whom the message is intended may all affect its effectiveness. For example, a message content needs to be designed specifically for each targeted group. A message designed for the homosexual community may not be effective in the heterosexual community and vice versa. Advice must be tailored specifically to the cultural and political realities of the target communities (Mays & Cochran, 1988). Therefore, the AIDS education campaign should make AIDS prevention consistent with group norms (Fisher, 1988).

A message needs to enhance the motivation and the

intention to carry out the specific behaviors. According to Fishbein and Ajzen (1975) "a person's performance of some behavior at a given point in time is determined by his intention to perform the behavior at that point in time" (p. 370). It appears that when a message fails in its goal to create an intention to act, its value as an agent of change is questionable, regardless of the value of its informative content. Furthermore, the more time between the period when the intention to act arises and the period of action, the less likely it is that the action will be performed.

The value of a message as a motivator and as an agent of change may be increased by active participation of the recipients of that message, rather than by passive exposure to that message (Fishbein & Ajzen, 1975). For example, a discussion group after presentation of the message may be helpful in galvanizing motivation and intention to act.

A sad but important consideration is that to some extent, our local communities may be responsible for the lack of success of the information campaign. The resistance to educate our children about sex or even to air advertisements with the word "condom" may be preventing the necessary information from reaching at least part of the public. High rates of other sexually transmitted diseases and teenage pregnancies also reflect this fact.

The campaign's focus on sexual behavior change as

protection against AIDS may be too narrow. It focuses only on behavior change, while a focus on lifestyle change may be a more appropriate course. It also appears that for many people, this message may be coming at a point in their lives where behavior patterns are firmly established and, therefore, more resistant to change. Education may be more effective if started at younger ages, and again, only if it is portrayed as part of a healthier and better overall lifestyle.

Instruction about AIDS and AIDS prevention should be part of a formal training plan better achieved by systematic and compulsory instruction at the school level rather than at the informal "campaign" level.

Some of the reported changes in AIDS risk behavior appear to be of a temporary nature. If a significant impact is to be made on the rates of infection, behavior change must be a long-term concern. Therefore, intervention must be geared toward long-term changes. In this respect it seems important to incorporate AIDS prevention into people's everyday life. Advertising can be effective in making it part of an everyday concern, akin to eating right, exercising, or wearing the right brand of jeans.

Concluding Statements

Although significant relationships are found among several of the variables, it is evident that only a few of those variables are significantly related to AIDS related

behaviors. Furthermore, when the abilities of those variables to predict behavior is considered, their connection to behavior becomes even weaker. It is not often that a variable acts alone to affect behavior. It is more common to find variables interacting with each other in a complex process of behavior change. This complexity has made the explanation and prediction of behavior an elusive task.

It seems improbable that isolating a few factors that may in one way or another relate to behavior will significantly improve or change the frequency of AIDS preventive behaviors. The emphasis on changing behavior may not be sufficiently efficient. It appears that more emphasis should be focused on shaping behavior in the same way that parents and society try to shape individuals (socialization) into ideal citizens with certain qualities. Trying to change those characteristics or qualities once they have been formed is a cumbersome and difficult task which historically has been less than successful.

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APPENDIX A

Initial AIDS Knowledge Questionnaire

The following is a list of 96 knowledge statements about AIDS. Please indicate whether you believe each statement is True or False by writing the letter " T " or the letter " F " in the first of two blanks provided. For example, T/ or F/.

- / 1. AIDS is a medical condition in which your body cannot fight off diseases.
- / 2. AIDS is caused by a virus.
- / 3. Some people are born with AIDS.
- / 4. If you kiss someone with AIDS, you will get the disease.
- / 5. If you touch someone with AIDS, you will get AIDS.
- / 6. All gay men have AIDS.
- / 7. You can get AIDS by eating certain foods.
- / 8. Anybody can get AIDS.
- / 9. AIDS can be cured.
- / 10. Women are more likely to get AIDS during their period.
- / 11. AIDS can be spread by using someone's personal belongings, like a comb or hairbrush.
- / 12. AIDS is not at all serious, it is like having a cold.
- / 13. AIDS is caused by the same virus that causes VD.
- / 14. The cause of AIDS is unknown.
- / 15. Just being around someone with AIDS can give you the disease.
- / 16. Gay women get AIDS as often as gay men.
- / 17. Having sex with someone who has AIDS is one way of getting it.

- 18. If a pregnant woman has AIDS, there is a chance it may harm her unborn baby.
- 19. Most people who get AIDS usually die from the disease.
- 20. Using a condom during sex can lower the risk of getting AIDS.
- 21. You can get AIDS by shaking hands with someone who has it.
- 22. Receiving a blood transfusion with infected blood can give a person AIDS.
- 23. You can get AIDS by sharing a needle with a drug user who has the disease.
- 24. AIDS is a life-threatening disease.
- 25. People with AIDS usually have lots of other diseases as a result of AIDS.
- 26. All gay women have AIDS.
- 27. There is no cure for AIDS.
- 28. You can avoid getting AIDS by exercising regularly.
- 29. AIDS can be cured if treated early.
- 30. A new vaccine has recently been developed to protect from catching AIDS.
- 31. If you are exposed to AIDS, you will develop the disease.
- 32. Most people with AIDS die within two years of diagnosis.
- 33. AIDS is caused by a bacteria.
- 34. Drug users constitute the largest proportion of AIDS patients.
- 35. AIDS patients often die of skin cancer or pneumonia.
- 36. The chances of getting AIDS through blood transfusions is now one in a million.
- 37. AIDS can be contracted through giving blood.

- / 38. Human T-Lymphotropic Retrovirus has been identified as the infectious agent of AIDS.
- / 39. Reducing the number of sexual partners will decrease your chances of getting AIDS.
- / 40. Human immuno-deficiency virus (HIV) has been recovered from human saliva.
- / 41. AIDS can be contracted through receptive manual rectal stimulation.
- / 42. AIDS can be contracted through hugging someone with the virus.
- / 43. AIDS can be contracted through casual kissing (i.e., lips or cheek).
- / 44. AIDS can be contracted through anal intercourse.
- / 45. AIDS can be contracted through oral sex.
- / 46. The AIDS virus attaches itself to the human t-cell.
- / 47. Scientists have developed a protein which prevents the AIDS virus from attaching itself to white blood cells.
- / 48. Prevalence of AIDS is higher among blacks and Hispanics than among other ethnic groups.
- / 49. Cytomegalovirus (CMV) has been identified as the infectious agent of AIDS.
- / 50. A 'SAIDS' virus, similar to AIDS in humans, has been isolated in chimpanzees.
- / 51. Couples must submit to an AIDS test before receiving a marriage licence in the state of Illinois.
- / 52. You may not attend public school if you have tested positive for AIDS.
- / 53. In some states, you can be prohibited from marrying if you test positive for AIDS.
- / 54. Health practitioners must report all new cases of AIDS to the public health department.
- / 55. Using public restrooms increases your chances of contracting AIDS.

- / 56. Sharing eating utensils with an AIDS victim is a likely way of contracting the disease.
- / 57. Checking your potential sex partner for sores or rashes is a good preventive measure against AIDS.
- / 58. It has been concluded that AIDS related complex (ARC) is the first stage in the development of AIDS.
- / 59. The period between exposure to AIDS and diagnosis of the disease is estimated at between two weeks and six weeks.
- / 60. Haitian immigrants constitute the largest proportion of AIDS victims in the U.S. today.
- / 61. A 35 year old male with the AIDS virus is expected to live about 11 years.
- / 62. The Surgeon General estimates that between 1.0 and 1.5 million Americans have the AIDS virus.
- / 63. Only about 42,000 AIDS cases have been reported in the U.S. to date.
- / 64. AIDS is an epidemic which has lasted longer than any in recorded human history.
- / 65. Women have higher incidence rates of AIDS than men.
- / 66. It is estimated that the prevalence of AIDS is lower in the U.S. than in Canada.
- / 67. The prevalence of AIDS is highest among the populations of New York and San Francisco.
- / 68. AIDS can attack the nervous system and brain causing memory loss, difficulty in concentrating and partial paralysis.
- / 69. Research has shown that family members of AIDS patients often contract the disease.
- / 70. The AIDS virus has not been found in human sweat and tears.
- / 71. The first official cases of AIDS were reported in the U.S. in 1975.
- / 72. Lymphadenopathy Associated Virus (LAV) is another name for AIDS.

- / 73. There are no known cases of AIDS transmission by insects, such as mosquitos.
- / 74. AIDS has been reported in every U.S. state.
- / 75. AIDS is a preventable disease.
- / 76. The acronym 'AIDS' stands for activated immune deficiency syndrome.
- / 77. Most people infected with the AIDS virus have no symptoms and appear to be in good health.
- / 78. The symptoms of ARC include swollen lymph glands, night sweats and chills.
- / 79. The symptoms of AIDS include shortness of breath, dry cough, and pink or purple spots on the skin.
- / 80. AIDS can be contracted by using sperm from an infected donor for artificial insemination.
- / 81. One type of spermicide (birth control substance) can kill the AIDS virus on contact.
- / 82. AIDS can be transmitted through swimming pools.
- / 83. Breastfeeding is a way of transmitting the AIDS virus from mother to child.
- / 84. AIDS can be transmitted by being near an infected person who is coughing or sneezing.
- / 85. AIDS can be transmitted by eating food prepared or touched by an infected person.
- / 86. There is no test which can detect the HIV virus itself.
- / 87. Researchers have not been able to reproduce the HIV virus in the lab.
- / 88. People who have had more than one sexual relationship in the past 5 years are at risk for AIDS.
- / 89. The age of people at the greatest risk for AIDS is between 20 and 40 years.
- / 90. It is estimated that for every person with AIDS there are 10 people with ARC and 100 people infected with HIV.

- 91. Cofactors such as alcohol, poor nutrition, stress, or other illnesses may play a role in the development of AIDS.
- 92. AIDS is caused by inheriting a bad gene or genes.
- 93. A person can "carry" and pass on whatever causes AIDS without necessarily getting AIDS or looking sick.
- 94. You can catch AIDS like you catch a cold because whatever causes AIDS can be carried in the air.
- 95. Contact with feces and/or urine from an infected person a way of contracting AIDS.
- 96. Sharing a toothbrush with an infected person is a way of contracting AIDS.

APPENDIX B

AIDS Related Behaviors Questionnaire

Part A

Following is a set of statements about people's behaviors. These statements are about specific behaviors that people may or may not engage in. They include sexual behaviors. Please use the following scale to rate each statement.

1	2	3	4	5	6
never engage in this behavior					always engage in this behavior

 0 = Does not apply.

If you are not sexually active (i.e., do not engage in sexual intercourse, oral-genital contact, anal intercourse, or other), please respond with a 0 for questions 1 through 7 of Part A. If you are sexually active, use numbers 1 through 6 on the above scale to answer these seven questions.

- 1. I use condoms, or have my partner use condoms during sexual intercourse.
- 2. I check a potential sexual partner for sores or rashes before engaging in sex.
- 3. I am careful in choosing sexual partners.
- 4. I talk to my potential sexual partner about his/her sexual history before engaging in sex.
- 5. I engage in anal intercourse.
- 6. I engage in oral genital contact.
- 7. I engage in sexual encounters with more than one partner.

If you are not an intravenous drug user, please answer with a 0 for the next question (question 8).

- 8. If injecting drugs, I share needles with my friends.
- 9. I am careful when using public restrooms.
- 10. I am careful with whom I share eating utensils.
- 11. I am careful about who I kiss.

- ___12. I have changed my job, major, or profession.
- ___13. I talk seriously about the AIDS epidemic with friends or family.
- ___14. If there's AIDS information available, like a TV show or article, I try to watch it or read it.
- ___15. I donate blood whenever there is a blood drive and/or is convenient for me.
- ___16. I use swimming pools, hot tubs, whirlpools, or saunas not located at home.

Part B

Using the following scale, please rate your level of agreement with the statements that follow.

1	2	3	4	5	6
I agree					I disagree

0 = Does not apply

If you are not sexually active, please respond with 0 for the next question (question 1).

- ___ 1. I have altered my sexual behavior because of AIDS (i.e. number of partners, condom use, frequency of sexual encounters, type of sexual activity).
- ___ 2. I have altered my career objectives because of AIDS.
- ___ 3. I have altered some of my work habits because of AIDS (i.e., wearing gloves or other protective gear).
- ___ 4. I have changed social habits (i.e. places I go, people I hang out with) because of AIDS.
- ___ 5. I have changed living arrangements (i.e. neighborhood, type of housing) because of AIDS.
- ___ 6. I have changed blood donation activity because of AIDS.
- ___ 7. I have changed my religious behavior (i.e. spirituality, church attendance, frequency of praying) because of AIDS.

- ___ 8. I have altered my drug use behavior because of AIDS (i.e., frequency of use, type of drug, way of taking it in).
- ___ 9. AIDS related dangers have affected my decision to be or not to be sexually active.

APPENDIX C

AIDS Related Thought Questionnaire

Following is a set of statements regarding people's thoughts about AIDS. These statements are exclusively about thoughts. They are not about behaviors or actions. Answering a statement does not imply that you engage, intend to engage, or have ever engaged in the behavior. It only means that you have thought about the idea expressed in the statement. These statements apply to everyone. Please rate each of the following AIDS related statements according to the following scale:

1 2 3 4 5 6

I have not seriously
thought about it

I have seriously
thought about it

- ___ 1. I think or have thought about the AIDS related dangers of anyone not using condoms during sexual intercourse.
- ___ 2. I think or have thought about the AIDS related dangers of anyone not checking a potential sexual partner for sores or rashes before engaging in sex.
- ___ 3. I think or have thought about the AIDS related dangers of anyone not being more careful when using public restrooms.
- ___ 4. I think or have thought about the AIDS related dangers of anyone not being careful in their choice of sexual partners.
- ___ 5. I think or have thought about the AIDS related dangers of anyone not talking to a potential sexual partner about his/her sexual history before engaging in sex.
- ___ 6. I think or have thought about the AIDS related dangers of anyone sharing needles with friends, when "shooting" drugs.
- ___ 7. I think or have thought about the AIDS related dangers of anyone engaging in anal intercourse.
- ___ 8. I think or have thought about the AIDS related dangers of anyone engaging in oral-genital contact.

- ___ 9. I think or have thought about the AIDS related dangers of anyone having sexual intercourse with different people.
- ___ 10. I think or have thought about the AIDS related dangers of anyone sharing food or eating utensils with other people.
- ___ 11. I think or have thought about the AIDS related dangers of anyone not being careful about who they kiss.
- ___ 12. I think or have thought about the AIDS related dangers involved in having a certain job, or profession.
- ___ 13. I think or have thought about the AIDS related dangers of health professionals not wearing protective gear at work.
- ___ 14. I think or have thought about the AIDS related dangers of anyone engaging in sexual intercourse with a casual acquaintance.
- ___ 15. I think or have thought about discussing the AIDS epidemic with family or friends.
- ___ 16. I think or have thought about the AIDS related dangers of anyone living in a certain neighborhood or housing.
- ___ 17. I think or have thought about reading or obtaining more information about AIDS.
- ___ 18. I think or have thought about the AIDS related dangers of blood donations.
- ___ 19. I think or have thought about the AIDS related dangers of anyone receiving blood transfusions.
- ___ 20. I think or have thought about the AIDS related dangers of anyone using swimming pools, hot tubs, whirlpools, or saunas that are not located at home.
- ___ 21. I think or have thought about catching AIDS.
- ___ 22. I think or have thought of the possibility of a family member or friend catching AIDS.
- ___ 23. I think or have thought about the AIDS related dangers of anyone "hanging out" in certain places.

- ___24. I think or have thought about the AIDS related dangers of anyone "hanging out" with certain friends or group of friends.
- ___25. I think or have thought about the AIDS related dangers of anyone hugging or touching certain people.

APPENDIX D

Vulnerability to AIDS Questionnaire

This is a survey about people's perceptions of certain life events. In this survey we will be asking you some questions about one particular event: AIDS. Each question will be followed by a scale and we would like you to circle the number which most accurately describes your feelings. There are no "right" or "wrong" answers to any of the following questions. We are just interested in your honest feelings and beliefs about AIDS. All responses will be kept anonymous and confidential.

1. How likely do you think is that you will someday get AIDS?

1	2	3	4	5	6	7
Extremely unlikely						Extremely likely

2. Some people worry a lot about the possibility of getting AIDS, and it is often on their minds. Other people do not worry very much about the possibility of getting AIDS, and it is not on their minds very often. How about you? How often would you say that you worry about getting AIDS?

1	2	3	4	5	6	7
Never						Very often

3. Some people feel that their chances of getting AIDS are greater than most other people's chances; some people feel that their chances are less than most other people's chances; and some people fall somewhere in between. Compared to most other people your age, what do you think your chances are?

1	2	3	4	5	6	7
My chances are much less than most people's		My chances are about the same as most people's			My chances are much greater than most people's	

4. Compared to most other people your age, how much do you think you worry about the possibility of getting AIDS?

1	2	3	4	5	6	7
I worry much less than most people		I worry about the same as most people			I worry more more than most people	

APPENDIX E

Final AIDS Knowledge Questionnaire

The following is a list of 40 knowledge statements about AIDS. Please indicate whether you believe each statement is True or False by writing the letter "T" or the letter "F" in the first of two blanks provided. For example, T/ or F/.

- / 1. AIDS is caused by a virus.
- / 2. If you kiss someone with AIDS, you will get the disease.
- / 3. You can get AIDS by eating certain foods.
- / 4. AIDS can be cured.
- / 5. AIDS is caused by the same virus that causes VD.
- / 6. Gay women get AIDS as often as gay men.
- / 7. Most people who get AIDS usually die from the disease.
- / 8. Using a condom during sex can lower the risk of getting AIDS.
- / 9. People with AIDS usually have lots of other diseases as a result of AIDS.
- / 10. There is no cure for AIDS.
- / 11. You can avoid getting AIDS by exercising regularly.
- / 12. AIDS can be cured if treated early.
- / 13. A new vaccine has recently been developed to protect from catching AIDS.
- / 14. If you are exposed to AIDS, you will develop the disease.
- / 15. AIDS is caused by a bacteria.
- / 16. Drug users constitute the largest proportion of AIDS patients.
- / 17. AIDS can be contracted through giving blood.
- / 18. Reducing the number of sexual partners will decrease your chances of getting AIDS.

- / 19. AIDS can be contracted through receptive manual rectal stimulation.
- / 20. AIDS can be contracted through casual kissing (i.e., lips or cheek).
- / 21. Prevalence of AIDS is higher among blacks and Hispanics than among other ethnic groups.
- / 22. Cytomegalovirus (CMV) has been identified as the infectious agent of AIDS.
- / 23. You may not attend public school if you have tested positive for AIDS.
- / 24. In some states, you can be prohibited from marrying if you test positive for AIDS.
- / 25. Using public restrooms increases your chances of contracting AIDS.
- / 26. Sharing eating utensils with an AIDS victim is a likely way of contracting the disease.
- / 27. Checking your potential sex partner for sores or rashes is a good preventive measure against AIDS.
- / 28. Haitian immigrants constitute the largest proportion of AIDS victims in the U.S. today.
- / 29. The Surgeon General estimates that between 1.0 and 1.5 million Americans have the AIDS virus.
- / 30. Women have higher incidence rates of AIDS than men.
- / 31. It is estimated that the prevalence of AIDS is lower in the U.S. than in Canada.
- / 32. The prevalence of AIDS is highest among the populations of New York and San Francisco.
- / 33. There are no known cases of AIDS transmission by insects, such as mosquitos.
- / 34. AIDS is a preventable disease.
- / 35. The acronym 'AIDS' stands for activated immune deficiency syndrome.
- / 36. AIDS can be transmitted through swimming pools.

- / 37. There is no test which can detect the HIV virus itself.
- / 38. People who have had more than one sexual relationship in the past 5 years are at risk for AIDS.
- / 39. AIDS is caused by inheriting a bad gene or genes.
- / 40. A person can "carry" and pass on whatever causes AIDS without looking sick.

Part B

Now that you are finished responding "T" or "F" to the previous items, we would like you to go back through them and rate them according to how confident or sure you are about your response. Please, rate them according to the following scale.

1	2	3	4	5	6
not confident					confident

Use the second of the two spaces provided to make your response. For example, F/6, which means that I believe the statement is false, and that I am completely sure or confident that it is false.

APPENDIX F

Homophobia and Fear of AIDS Questionnaire

Following is a set of statements regarding people's thoughts about AIDS and homosexuality. Please rate each of the following statements according to the following scale.

- 0 Strongly agree.
- 1 Agree.
- 2 Undecided.
- 3 Disagree.
- 4 Strongly disagree.

- ___ 1. I wouldn't mind being in the same room with a friend who had AIDS.
- ___ 2. A centralized file containing the names of all people known to have the AIDS virus should be created.
- ___ 3. If I found out a friend had AIDS, I would be afraid to hug him or her.
- ___ 4. I would object to sending my non-infected child to a school which had a child who has AIDS.
- ___ 5. Homosexuals contribute positively to society.
- ___ 6. I believe public officials when they say AIDS cannot be transmitted through casual contact.
- ___ 7. I am afraid that I will get AIDS.
- ___ 8. Homosexuality is disgusting.
- ___ 9. AIDS children should be allowed to attend public schools.
- ___ 10. Homosexuals are just as moral as heterosexuals.
- ___ 11. Homosexuals should have equal civil rights.
- ___ 12. Compared with other health problems, I think AIDS is a very minor problem.
- ___ 13. If I found out that my lover had AIDS, I would still have sex with him/her.
- ___ 14. The seriousness of AIDS is greatly overblown by the media.
- ___ 15. Homosexuals corrupt young people.

- ___16. Homosexuality is a sin.
- ___17. AIDS will become a severe and widespread epidemic.
- ___18. I am worried about catching AIDS in a public restroom.
- ___19. Homosexuality should be against the law.
- ___20. Even if a friend had AIDS, I wouldn't mind touching him/her.
- ___21. If I found out a friend or lover had AIDS I would be afraid to kiss him/her.

APPENDIX G

MDHLOC Questionnaire

Following is a set of statements regarding people's thoughts about their own health. Please rate each of the following statements according to the following scale.

- 1 Strongly disagree.
- 2 Moderately disagree.
- 3 Slightly disagree.
- 4 Slightly agree.
- 5 Moderately agree.
- 6 Strongly agree.

- 1. If I get sick it is my own behavior which determines how soon I get well again.
- 2. No matter what I do, if I am going to get sick, I will get sick.
- 3. Having regular contact with my physician is the best way for me to avoid illness.
- 4. Most things that affect my health happen to me by accident.
- 5. Whenever I don't feel well, I should consult a medically trained professional.
- 6. I am in control of my health.
- 7. My family has a lot to do with my becoming sick or staying healthy.
- 8. When I get sick I am to blame.
- 9. Luck plays a big part in determining how soon I will recover from an illness.
- 10. Health professionals control my health.
- 11. My good health is largely a matter of good fortune.
- 12. The main thing which affects my health is what I do myself.
- 13. If I take care of myself, I can avoid illness.
- 14. When I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.

- ___ 15. No matter what I do, I'm likely to get sick.
- ___ 16. If it's meant to be, I will stay healthy.
- ___ 17. If I take the right actions, I can stay healthy.
- ___ 18. Regarding my health, I can only do what my doctor tells me to do.

APPENDIX H

Demographic Data

Please answer the following questions.

I- Your ethnic origin is:

- 1- White/caucasian
- 2- Black/Afro-American
- 3- Hispanic (Mexican, Central American, South American, Puerto Rican, Cuban)
- 4- Native American/Eskimo
- 5- Asian/Oriental (Chinese, Japanese, Korean, Filipino, and others)
- 6- Other, please specify _____

II- In your family, how many generations were born in the USA?

- 1- 0 generations: self and parents not born in the USA.
- 2- One generation: only self, or brother or sister born in USA.
- 3- Two generations: self and one or both parents born in USA.
- 4- Three generations: self and one or both parents and, one or both grandparents born in USA
- 5- More than three generations born in USA.

III- How religious would you consider yourself?

- | | | | | | |
|------------|---|---|---|---|------|
| 1 | 2 | 3 | 4 | 5 | 6 |
| not at all | | | | | very |

IV- Do you consider yourself: 1- heterosexual ____
2- homosexual ____
3- bisexual ____

V- Have you known anyone with AIDS?
Yes ____ No ____

VI- Are you Male ____ or Female ____?

VII- How old are you? ____

APPROVAL SHEET

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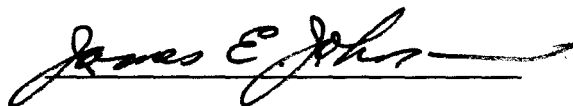
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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

10-11-89

Date



Director's Signature