

POLICE OFFICERS' KNOWLEDGE OF
THE ACQUIRED IMMUNODEFICIENCY SYNDROME

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This descriptive study sought to determine if a difference existed between the veteran police officers' and the police cadets' knowledge of the AIDS. The setting was a large urban police department. The convenience sample consisted of 394 veteran officers and 75 police cadets. Data were collected utilizing a demographic data form and a knowledge questionnaire. Scores from the questionnaire revealed both groups were generally knowledgeable about AIDS. There was no significant difference in the knowledge levels of the veteran police officers and the police cadets at the .05 level of significance.

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CHAPTER I

THE PROBLEM AND ITS BACKGROUND

The Acquired Immunodeficiency Syndrome (AIDS), is caused by the Human Immunodeficiency Virus (HIV) that cripples the body's immune system. This leaves the person vulnerable to certain types of cancer and a wide variety of opportunistic diseases. There have been documented transmission of the virus through blood and blood by-products, semen, vaginal secretions, and breast milk (DeVita, Hellman, and Rosenberg, 1992, p. 111). Although the virus is present in many other body fluids, such as saliva, cerebrospinal fluid, peritoneal fluid, pericardial fluid, and synovial fluid, there are no documented cases of transmission involving these other fluids.

AIDS was recognized in 1981, and the disease has been reported in 153 countries. "From 1981 through 1991 there were 167,000 AIDS deaths in the United States, with almost one-third (31,196) of these deaths in 1990s" (Centers for Disease Control, 1991, p. 40). During the 1980s, AIDS emerged as a leading cause of death among young adults in the United States. By 1988, AIDS had become the third leading cause of death among men 25-44 years of age; and by

1989 it was the second, surpassing heart disease, cancer, suicide and homicide (Centers for Disease Control, 1991, p. 41).

In 1988 AIDS ranked eighth among causes of death among women 25-44 years of age. In the 1990s, based on current trends, AIDS is likely to rank among the five leading causes of death in this population. Most deaths from AIDS have occurred among homosexual and bisexual men (59%) and among women and heterosexual men who are intravenous drug users (21%) (Hopp and Rogers, 1989, p. 15).

A disproportionate percentage of AIDS cases are reported among African-American and Mexican-American intravenous drug users, their sex partners, and their children. African-Americans account for 36% of all reported AIDS cases and 53% of pediatric cases, but account for only 12% of the general population. Mexican-Americans account for 16% of all reported cases and 23% of pediatric cases, but account for only 7% of the general population. Fifty-nine percent of adults with AIDS are Anglo-Americans, and 23% of children with AIDS are Anglo-Americans (Hopp and Rodgers, 1989, p. 15-16).

AIDS mortality has been greater in certain parts of the United States. For example, in San Francisco, Los Angeles, New York State, and New Jersey AIDS is the leading cause of death among young adult men. In both New York and

New Jersey AIDS is the leading cause of death among African-American women 15-44 years of age. In some locations, AIDS has become a major cause of death among young children. In New York State in 1988, AIDS was the leading cause of death among Mexican-American children 1-4 years of age and it was the second leading cause of death among African-American children 1-4 years of age. AIDS deaths exceeded the number of deaths caused by intentional injuries among Mexican-American children, and it caused more deaths than infection among both groups (1991, p. 40).

An estimated one million persons in the United States are infected with HIV; of these, an estimated 165,000-215,000 will die during 1991-1993. The Centers for Disease Control (CDC) predicts that the number of AIDS cases will continue to increase through out the 1990s (1991, p. 40).

In addition to mortality statistics, measures of the public health impact of HIV infection/AIDS include morbidity, disability, and health cost. The HIV epidemic is straining the resources of public hospitals. In 1989 private insurers paid more than an estimated one billion dollars for reimbursement of AIDS-related claims for life and health insurance, an increase of 71% from 1988. The impact of AIDS on mortality in the 1990s and 2000s will depend on present efforts to prevent and treat HIV infection (Centers for Disease Control, 1991, p. 41).

At the present time our only weapon in this battle against the epidemic is public knowledge. According to Herlitz, and Brorsson (1991), "planning educational campaigns requires knowledge about information management, about appropriate approaches toward different potential target groups, and about the impact of early information" (p. 913). For these reasons numerous studies concerning knowledge, attitudes, and behavior related to AIDS have been carried out in many countries. Most of these studies address the public or particular groups who are at risk because of their behavior. Few studies have addressed themselves to occupational groups who come in close contact with individuals infected by HIV other than those studies concerning health care workers.

A particular area of concern is the criminal justice profession. According to Hammett (1987),

AIDS affects the criminal justice professional in two important ways; first suspects and offenders are frequently people who engage in behavior that puts them at high risk for AIDS. As a result, many law enforcement officers and corrections workers are concerned that they are at increased risk of acquiring the AIDS virus through contact with these suspects and offenders. Second, law enforcement officers can serve a vital educational function in the community because they come into contact with many people who exhibit high-risk behavior; specifically intravenous drug abusers and prostitutes (p. 2).

Statement of the Problem

The problem of this study was: Do veteran police

officers and police cadets demonstrate a difference in their knowledge of the Acquired Immunodeficiency Syndrome (AIDS)?

Statement of Purposes

The purposes of this study was to:

1. To determine veteran police officers' knowledge of AIDS.
2. To determine the police cadets' knowledge level of AIDS.
3. To determine the difference between the knowledge levels of the veteran police officers and the police cadets.
4. To determine the ex post facto reliability of the knowledge inventory.
5. To profile demographic characteristics of police officers by job title, years on the job, levels of education, age, sex, religion, and ethnic origin.
6. To profile general AIDS information/resources in the survey.

Hypothesis

The hypothesis investigated in this study was: There is no statistically significant difference in the knowledge scores of veteran police officers and the police cadets, as measured by the Modified Knowledge Inventory.

Definition of Terms

For the purpose of this study the following definitions were used:

1. Acquired Immunodeficiency Syndrome. A disease process that weakens the human immune system, making the host susceptible to opportunistic infections. The person has been infected with the Human Immunodeficiency Virus (HIV) and presents with signs and symptoms of the Acquired Immunodeficiency Syndrome (AIDS) as defined by the Centers for Disease Control.
2. Human Immunodeficiency Virus. A human retrovirus that weakens the immune system, making the host susceptible to opportunistic infections, that result in the death of the host.
3. Knowledge level. The summative score from the officer's survey instrument is the indicator of the knowledge level.
4. Police cadets. Individuals currently in training as police officers.
5. Veteran police officers. Police officers who are state certified and have completed their probationary period, and are in nonadministrative positions, with six months or more experience.

Assumptions

The assumptions of this study were as follows:

1. Knowledge can be measured.
2. Knowledge of AIDS impacts the quality of interaction with people who have the HIV infection or AIDS.
3. The subjects answered the survey honestly and accurately.
4. The distribution strategy did not impact the results of the study.

Limitations

The limitations of this study were as follows:

1. A non-randomized, sample of convenience was used.
2. There was no control for previous contact with people who have the HIV infection or AIDS.

Significance of the Study

This study may be significant because it provides a baseline level of knowledge that can be utilized to determine the areas of confusion or the lack of information related to the HIV infection or AIDS. This information may be used to improve the AIDS education curriculum for veteran police officers and cadets. The information could allow the instructor to address the police officers' specific needs or concerns regarding AIDS or HIV infection.

CHAPTER II

SELECTED REVIEW OF RELATED LITERATURE

The Acquired Immunodeficiency Syndrome (AIDS), refers to a disorder caused by the Human Immunodeficiency Virus (HIV). The virus impairs the body's immune system. Death results from the opportunistic infections that invade the weaken body of an AIDS victim.

The medical community first recognized this syndrome in 1981. In 1982 the Center for Disease Control (CDC), published a case definition of AIDS. The CDC considers AIDS to be an aggregate of signs, symptoms, and illnesses resulting from a compromised immune system. A diagnosis of AIDS requires the definitive or presumptive diagnosis of one or more indicator diseases; and, depending on certain criteria, the diagnosis may or may not require laboratory evidence of HIV infection (Maschi, 1992, p. 10). The CDC case definition of AIDS is included in Appendix A.

In late 1983, the causative agent for AIDS was identified as a retrovirus. Currently, Human Immunodeficiency Virus (HIV) has been designated the name of this retrovirus. The Human Immunodeficiency Virus belongs to the Lentivirus subfamily. Viruses in this subfamily

cause diseases that are characterized by long incubation periods, persistent infection, and impairment of the immune system. In adults, the incubation period for AIDS varies from one to ten years. The time from the onset of symptomatic HIV infection until death varies considerably. Masci (1992) estimates that "AIDS occurs after 7 years in 50% of infected individuals and by 15 years in 78 to 100%" (p. 14). "Prospective studies have indicated that approximately 10% of HIV infected patients who are asymptomatic will progress to AIDS within 36 months" (Masci, 1992, p.14). According to Masci (1992),

. . . long-term survival is rare. More than 55% of the 82,674 AIDS patients reported in the United States since the beginning of the epidemic in 1981 had died of the disease by 1989. The median estimated survival time among AIDS patients in New York City was 10 months by the end of 1985. Mathematical projections indicate that 365,000 AIDS cases will have been diagnosed in the United States by the end of 1992, and that 263,000 (72%) will have died. The full impact of antiretroviral drugs and other therapeutic measures on the prognosis of AIDS is not yet clear, although improved survival has been demonstrated in some patients receiving the drug AZT and some forms of prophylaxis against *P. Carinii* pneumonia, the most common initial opportunistic infection in AIDS (p. 15).

Transmission

Routine social or community contact with an HIV-infected person carries no risk of transmission. "Epidemiologic evidence indicates that HIV can be transmitted from person to person through sexual contact,

sharing HIV-contaminated needles and syringes, and through transfusion of infected blood or its components, and breast milk" (Benenson, 1990, p.4). While the virus has on occasion been found in saliva, tears, urine and bronchial secretions, transmission after contact with these secretions has not been reported. There is no laboratory evidence to indicate that biting insects have transmitted HIV infection. "From 25% to 35% of infants born to HIV-infected mothers are infected before, during, or shortly after birth" (Benenson, 1990, p.4). After direct exposure of health care workers to HIV-infected blood through injury with needles and other sharp objects, the rate of conversion is <0.5%" (Benenson, 1990, p. 4).

Manifestations of HIV Infection/AIDS

The manifestations of infection with HIV are both primary and secondary. Primary manifestations are caused by the actual HIV infection, and they include an acute severe flu-like illness that occurs within 1 to 12 weeks after infection. Secondary manifestations are due to immune function abnormalities and include opportunistic infections and malignancies as well as other aspects of immune dysfunction.

"HIV infects T-helper lymphocytes, monocytes/macrophages, and some central nervous system cells" (Hopp

and Rodgers, 1989, p. 27). "It is possible that HIV may also attacks other cells, including B lymphocytes and colonic epithelium" (Hopp and Rogers, 1989, p. 27).

Testing

In 1985 a blood test to detect HIV antibodies was approved by the Food and Drug Administration (FDA). A positive antibody test should be considered evidence of ongoing infection. In the majority of individuals seroconversion occurs 6 to 12 weeks after infection (Maschi, 1992, p.33). Seroconversion refers to when the HIV antibody can be detected in the blood by the screening test. In some cases it may take up to 6 months or more for the infected individual to develop antibodies, and during this "window period" the infected person will test negative for HIV antibodies even though they may be infectious. Seroconversion is not correlated with the appearance of symptoms, and an asymptomatic period of several years can follow infection and seroconversion.

There are also testing methods that can detect the presence of the virus in blood instead of having to wait for the infected person to develop antibodies to the virus. However, at the present time these testing methods are relatively expensive and therefore are primarily used in research settings.

Treatment

At the present time there is no cure for AIDS. "More than 500 drugs have been screened to find substances effective in treating AIDS, including: 1) antivirals which might act against the AIDS virus, 2) immune modulators that might bolster the immune system, 3) combinations of therapies, and 4) drugs that might be effective against AIDS-related opportunistic infections" (Maschi, 1992, p. 213).

At the present time there are approximately 25-30 different vaccine candidates in various stages of the experimental testing. Experimental testing for drug therapies or vaccines involve three phases. Phase I addresses issues of safety and immunogenicity. Phase II is designed to see if the drug or vaccine therapy is effective in treating the disease or condition for which it is intended. Phase II also attempts to disclose short-term side effects and risks in people whose health is impaired. Phase III clinical trials continue to assess safety, effectiveness, and dosage. Phase III trials also expand on the research carried out in Phase II in order to clarify the drug's benefit-risk relationship, to discover less common and even rare side effects and adverse reactions, and generate information that will be incorporated into the drug's professional labeling. It is estimated that, even

with favorable initial results, it will take at least several years before a vaccine is available to the public. While an effective vaccine will prevent infection in healthy individuals, it does not represent a cure for individuals already infected.

Drug therapy for AIDS is rapidly expanding. There are numerous drugs used to treat specific opportunistic diseases, however these medications do not kill the HIV virus or keep the virus from reproducing in the body.

At the present time there are three drugs that have been approved by the U.S. Food and Drug Administration (FDA) for the treatment of HIV infected patients; Zidovudine (Retrovir, AZT), Dideoxyinosine (Videx, DDI), and Dideoxycytidine (ddc, Zalcitabine, Hivid). "Zidovudine has been shown to inhibit growth of the AIDS virus in vitro and to prolong survival time and improve quality of life in patients with AIDS" (Maschi, 1992, p. 215). Dideoxyinosine, which has in vitro activity similar to that of Zidovudine, has been approved by the FDA for use in patients unresponsive to or intolerant of Zidovudine. Dideoxycytidine has been shown to inhibit HIV replication in vitro. Currently the FDA has approved the use of ddc in conjunction with AZT (Maschi, 1992, p. 219).

Prevention

According to Hopp, and Rogers (1989), "the risk of contracting AIDS without engaging in high risk behaviors that can transmit HIV is extremely small" (p. 80). "People who avoid high risk behaviors have little risk of HIV infection, unless they work in a health care setting; but, even there, the risk is minimal and can be decreased by taking precautions" (Hopp and Rogers, 1989, p. 80).

Hopp and Rogers (1989), offer that AIDS prevention in health care settings depends on three major factors: appropriate precautions, availability of supplies, and personnel knowing and following precautions (p. 80). Precautions are aimed at preventing punctures by sharp objects and exposure to the splash and splatter of blood and body fluids. "Prevention supplies must be available in sufficient quantities, be located so that employees can easily use them, and be of sufficient quality so that employees who use them are protected" (Hopp and Rogers, 1989, p. 81). Precautions and guidelines are outlined in Appendix B.

Knowledge

The scientific community has amassed a tremendous amount of knowledge about AIDS. However, the greatest challenge lies in disseminating this information to the lay

public and to professional groups that interact with people that have the HIV infection. Strategic health communication campaigns are currently the best available strategy for curtailing the spread of the human immunodeficiency virus; since at the present time there is no effective vaccine against the disease.

There are innumerable theories concerning human development, educational methods, principals of learning, and the acquisition of knowledge. A basic understanding of these key theories is critical for the AIDS educator. Therefore the following theories will be briefly reviewed; the Piagetian Cognitive Development Theory, Behaviorism Theories, and the Social Learning Theory. This review will include the basic premises of the theory, and the way the theory has been applied in educational settings.

Piagetian Cognitive Development Theory

Jean Piaget formulated one of the most influential theories on how intelligence develops in children and adolescents. "Whereas many writers have viewed knowledge as a store of information and beliefs, Piaget proposed that knowledge is a process, a repertoire of actions that a person performs" (Thomas, 1992, p. 53). In Piaget's opinion, to know something is to act on that thing, with the action being either physical, mental or both. The purpose

of all behavior or thought, according to Piaget, is to adapt the organism to the environment in evermore satisfactory ways.

The techniques of adaptation in Piaget's system are called schemes (schemas or schemata). A scheme as a technique of adjustment, can be biological or mental or both. "Such schemes, both physical and mental, are always accompanied by feelings which Piaget called affective schemes" (Thomas, 1992, p. 53).

According to Piagetian theory, development can be seen as a progressive elaboration of schemes or knowledge by means of a pair of complementary processes called assimilation and accommodation. "Assimilation occurs when a person encounters a new experience in the environment and interprets this experience as being identical or very similar to a scheme already in his or her repertoire of physical or mental acts" (Thomas, 1992, p.53). "However when the person does not perceive a good match between an experience with the environment and any of the existing schemes; one of two things occurs either the person fails to comprehend the experience at all, or else he or she must alter existing schemes to create some new variant that fits the new experience" (Thomas, 1992, p. 53). This latter process of adding to, refining and elaboration of schemes to

create new versions is called accommodation" (Thomas, 1992, p. 53).

Piaget's theory proposes "that learning depends, first, on sufficient maturation of the nervous system to accomplish a given task, and, second, on the opportunities offered by the environment to meet that task" (Thomas, 1992, p. 45). "The process of learning consists of the child seeking to match his or her existing concepts of physical-behavior patterns with tasks or phenomena of the environment, then altering the concepts, that is learning new concepts when the match seems unsatisfactory" (Thomas, 1992, p. 45).

Basic Concepts of Behaviorism

The theories of Behaviorism attempt to explain why people and animals behave as they do. Although there are several varieties of behaviorism; all have certain characteristics in common. "Basically, all behaviorists conceive of learning as the act of establishing a connection between a stimulus and a response" (Thomas, 1992, p.66).

"Classical conditioning involves substituting a new stimulus for an old one by offering the two at the same time, or nearly the same time, until the new stimulus becomes sufficient to bring about the response that the old stimulus originally elicited" (Thomas, 1992, p. 66).

A second type of conditioning or learning is called

operant conditioning. "Operant conditioning is concerned with assuring that a particular response is consistently made in the stimulus situation" (Thomas, 1992, p. 66).

Whether or not a response becomes consistent or not depends on the consequences the person experiences after making the response. If the consequences are rewarding the individual is more likely to give the same response in the future when in a similar stimulus situation.

To explain more complex patterns of learning behaviorists have proposed the concepts of shaping and chaining. Shaping consist of first reinforcing or rewarding any gross approximation the person achieves of a desired refined act. "After the gross act has been established, the teacher can shape it by gradual steps into the ultimate refined form by requiring better and better approximations before reinforcement is provided" (Thomas, 1992, p. 67).

Chaining enables a person to link together a sequence of small, individual conditioned acts to compose a complex skill. "The process of chaining begins at the final end of the chain rather than at the beginning; each preceding link of the chain is hooked on by associating it with the link that has already been established through reinforcement" (Thomas, 1992, p. 67).

According to Thomas (1992),

. . . from the viewpoint of the behaviorist, the task

of child rearing or teaching is chiefly one of arranging learning situations and their consequences in ways that reinforce learners for performing the desired behaviors and that punish or fail to reinforce them for undesired acts. Thus behaviorist have centered a great deal of attention on schedules of reinforcement, that is on patterns in which consequences can be arranged so as to increase the frequency of desired responses and eliminate or extinguish undesired ones (p. 67).

Social Learning Theory

"Social learning theory is a way of explaining human development based on the assumption that the pattern of behaviors people acquire as they grow up is chiefly the result of their interactions with other people" (Thomas, 1992, p. 75).

According to Thomas (1992),

Social learning theory is a derivative of behaviorism. However in contrast to classical behaviorism, social learning models not only recognize observable behavior as an important factor for explaining development, but also include speculation about a person's cognitive functions, that is about the role that mind or mental processes play in effecting behavior (p. 75).

A basic tenet of the social learning theory is the belief that when a person takes action, the consequences that follow will influence whether the person will try the same behavior under similar circumstances. The second tenet in social learning theory is one that traditional behaviorist would not subscribe. This is the tenet that much learning is vicarious; that learning occurs by means of individuals observing activities themselves. "They see what

other people do and note the consequences of those actions; then depending on how desirable they judge the consequences to be, they decide which actions to imitate and which to avoid" (Thomas, 1992, p. 75). The importance of role models and identification for learning is that learners accept as models those people whom they regard as being either much like themselves or else an ideal they hold for themselves.

Thomas (1992) offers that,

(a) people are more likely to model their behavior after actions of others they regard as prestigious than after actions of others who are not highly regarded; (b) people are more likely to adopt behavior patterns from models of their own sex than those of the opposite sex (c) models who receive rewards, such as money, fame, or high socioeconomic status, are more often copied than ones who do not (d) people who are punished for their behavior tend not to be imitated (p. 75).

If AIDS education is to be effective in preventing the spread of HIV infection educators must be able to understand, relate to, and meet the needs of the target audience; therefore a working knowledge of educational principals and theories are critical.

Thomas (1992) offers that,

. . . the theory of development on which an educator bases educational practice significantly influences each aspect of the process of education; the goals to be achieved, the assumptions about how people learn, the sequence and pace of learning objectives, the methods of teaching, the teaching materials, the ways individual differences among learners are treated, the methods of evaluating student progress and more (p. 48).

Police Officers' Knowledge of AIDS

Although there are innumerable studies concerning AIDS and health care workers, few have dealt with HIV infection and law enforcement personnel. An extensive literature search resulted in only three studies involving law enforcement officers and the issue of AIDS.

In 1990, an article by Herlitz and Brorsson compared police officers, registered nurses, and the general public concerning their perceptions of the risk of HIV infection, attitudes toward HIV-infected individuals, and attitudes toward measures used to fight the AIDS epidemic. The study was conducted in 1987. Information was obtained through mail questionnaires sent to random samples of individuals, aged 25-44 years, from the three groups. The samples included 525 police officers, 501 registered nurses, and 1600 individuals from the general public. Response rates were 85, 93 and 74% respectively.

Their study showed good knowledge concerning transmission modes of HIV infection (blood, semen, vaginal secretions, etc.). A widespread fear of unverified carriers of infection (public toilets, kissing on the mouth) existed particularly among the public and police officers. Negative attitudes toward HIV-infected individuals and demands for compulsory measures were common among all groups, although least common among nurses and most common among the police.

Positive relationships were established between the fear of unverified carriers of infection, repulsive attitudes toward individuals infected by HIV and demands for compulsory measures.

All groups expressed pessimism concerning the future of the spread of HIV infection in the general population. More than 40% of police officers and nurses felt that the infection can become as common among the general public as it is today among homosexual men and IV drug abusers. All groups expressed fear of social contact with HIV-infected persons. The study indicated that nurses are least and police officers most anxious.

Herlitz and Brorsson (1990), concluded that,

A prerequisite for effective information transfer is confidence in the source that distributes the message. The specifics of education should be better adapted to particular target groups and should relate to problems which directly affect the target groups in their daily activities. It is also important that updated information clarifies the grey zones, i.e. instances where it has become clear whether or not a risk for infection exists. Information must consist of clearly defined messages, and to the extent that current knowledge cannot provide this information, this must be explained too. Information must also explain the motives behind the actions taken by society, e.g. why resources are dedicated to voluntary tests and selective tracking of infections instead of comprehensive mandatory screening (p. 917).

In 1989, an article published by Sheridan reviewed an educational program developed by Northwestern University's AIDS Education Project. "Although it was specifically

directed to law enforcement officers, the underlying principal that accurate knowledge serves to lessen unnecessary fear about HIV transmission seems valid for other persons whose occupations might put them at risk and for communities concerned with this public health problem" (Sheridan, 1989, p. 521). "In addition, law enforcement personnel are valuable educational resources; in their highly visible roles, they can influence community response to HIV-infected persons" (Sheridan, 1989, p. 522). Sheridan (1989) stated that,

Subjects of the study were 728 police officers from a large urban department who attended AIDS education training in groups of about 50 persons each. Before and after each training session the officers completed questionnaires requesting demographic information, knowledge about AIDS, and estimates of perceived risk of infection. Questions pertaining to perceptions of risk were drawn from both a preliminary survey of 451 officers, who did not differ demographically from those in training, and the result of focus groups conducted with police. The original survey of the 451 officers revealed that the police were "very concerned" (most extreme score on a 5-point scale) about being involved with a potentially infected person through needlestick injuries (97%), being bitten, (96%), resuscitating an unknown unconscious person (90%), being spit upon (82%), subduing (70%), searching (69%), arresting (54%), handcuffing (51%), processing an arrestee (42%), transporting (42%) and being in the same room with an HIV infected person (36%). Moreover, more than 90 percent of the officers wanted more information about the HIV antibody test and transmission modes (p. 521).

Hammett (1987) offered that "AIDS is both an increasingly serious public health problem and an extremely emotional issue that has engendered a great deal of fear and

misinformation" (p. 2). This article presented concerns expressed by 35 police departments contacted for the National Institute of Justice by the Police Executive Research Forum. Hammett reported that nearly all (33 of 35) of the police departments surveyed expressed some concern related to AIDS. Patrol officers, those most likely to have the greatest direct contact with the public, in almost all the departments (94%) reported anxiety about exposure to the virus. However, other law enforcement personnel, including lockup staff, evidence technicians, laboratory staff, and detectives, were also concerned about AIDS (Hammett, 1987, p. 3). "Law enforcement officers expressed anxiety about a wide range of assaultive behavior; particularly biting, spitting, and the throwing of urine or feces" (Hammett, 1987, p.3). Officers working in lockup are concerned about⁹ the same issues as officers on the street. "However, lockup introduces two additional dimensions: the risk of infection to other prisoners and the threat of violence or intimidation toward infected individuals" (Hammett, 1987, p.3).

Despite all the evidence that the AIDS virus is not transmitted through casual contact, fully two-thirds of the law enforcement agencies surveyed reported concern about becoming infected through causal contact in the performance of their duties (Hammett, 1987, p. 3).

Hammett (1987) stressed that "only regular and accurate education can counteract irrational fears" (p. 3).

"Departments should keep informed of the latest research on the transmission of the AIDS virus, develop contacts with local medical experts, establish formal programs to monitor AIDS research, and disseminate key finding to staff as they become available" (Hammett, 1987, p. 3-4).

In summary Hammet (1987) offered the following guidelines for AIDS training of law enforcement personnel:

AIDS is a disease of high-risk behavior, not high-risk groups. Far too many people take the potentially dangerous position that the AIDS virus may be transmitted by contact with members of high-risk groups. In fact, everyone must be concerned with a few well-defined types of activities; specifically unprotected sexual intercourse, sharing of needles, and other activities where blood, semen, or vaginal secretions are exchanged. If the AIDS training does not convey this information, and if the tone is not balanced between caution and reassurance, it may encourage misinformed beliefs that in turn can severely affect the operational effectiveness and service delivery of the law enforcement agency. The most effective training programs are those jointly delivered by management, staff members, unions, medical experts, and health professionals. If possible, training on AIDS should be provided before staff develop irrational fear of the disease. It should be included in both recruit and regular inservice training. Training should be conducted by a knowledgeable educator so participants can ask questions and receive accurate answers. Videotapes or slide presentations should be supplemented with question-and-answer sessions (p.7).

Hammet (1987) expressed the opinion that "law enforcement staff can exert a positive educational influence on their communities" (p. 2). "Police officers can also

refer people to appropriate organizations for voluntary testing, diagnosis, medical care and support services" (Hammett, 1987, p. 2).

Knowledge Inventories

The AIDS attitudes and information inventories that were reviewed, used a wide variety of survey formats. "It is important to note that surveys are frequently conducted for the purpose of making descriptive assertions about some population: discovering the distribution of certain traits or attributes" (Babbie, 1973 p. 58). "The researcher is not concerned with why the observed distribution exists, but merely what the distribution is" (Babbie, 1973, p. 58).

Rubinson and Neutens (1987) explained that:

Generally questionnaires forms are closed, open, or a combination of the two. The restricted or closed form provides fixed-alternative questions that can be answered by a simple yes or no, or by checking an appropriate box. Some of the advantages of this form are (1) ease of completion for the respondents; simplification of coding and analysis, particularly because the questionnaire can be precoded; (3) greater chance that respondents will answer sensitive questions (e.g. about age or income) because they are usually categorized rather than demanding an exact number; and (4) a minimum of irrelevant responses. On the other hand, some disadvantages of the closed form are (1) given a list of potential answers the unknowledgeable respondent may guess or randomly select an answer. (2) Variation in answers among respondents may be reduced since only certain categories are available. (3) There may be too many answer categories to be printed simplistically. (4) Frustration may augment [sic] since there is no room for a separate, non-provided opinion. (5) There is a possibility that the respondent may

circle the wrong answer, e.g. circle a three when they meant to circle a four. It is suggested that the categories of Don't know and Other be included in a closed form questionnaire.

In the open or unrestricted questionnaire form the response categories are not specified, and the respondent is allowed to answer in his or her own words. Some advantages to this type of questionnaire are (1) usable when all the response categories are unknown, (2) preferable for controversial, sensitive and complex issues, and (3) allow for respondent creativity, clarification and detail. The disadvantages include (1) difficulty in coding and analysis; greater demands on the respondent in terms of time, writing ability, and thought; (3) questions may too general for the respondent to comprehend or answer; (4) data collected may not be relevant to the objectives of the study.

Many questionnaires have combined forms, including both closed and open items. A questionnaire that is primarily closed should have at least one open-ended item to allow the respondent to express a personal opinion or thought. Each health science researcher must decide which type is more likely to supply the information desired (p. 99-100).

A variety of questions and response category formats are used. "In closed form questionnaires the usual types are dichotomous, multiple choice, rating, and ranking, open form questionnaires generally consist of a blank space in which the answer is to written" (Rubinson and Neutens, 1987, p. 100). Sentence completion questions are incorporated into both forms of questionnaires.

Rubinson and Neutens (1987) offered the following explanation of the various types of questions,

In dichotomous questions the answer comprises two parts, one of which is selected by the respondents. With multiple choice items, each potential answer is listed for the respondent. Many questionnaires include rating questions in which the respondent indicates a

particular view about the psychological object. Another fixed-alternative is that of ranking. Here the respondent simply orders the given answers in rank (p. 100-101).

"The question response type that the researcher chooses will influence the accuracy of the survey and will determine the subsequent analytical procedures" (Balian, 1988, p. 143).

Summary

Presented in this chapter was a historical overview of AIDS that included modes of transmission, and manifestations of HIV infection and AIDS. Testing, treatment, and prevention options were discussed. A brief overview of educational and developmental theories and a review of knowledge inventory types was included.

CHAPTER III

METHODOLOGY

This was a descriptive study which utilized a survey design. This chapter describes the setting in which the survey was administered, and the population and the sample involved in the study. A discussion of the Modified Knowledge Inventory (MKI), and its scoring are also included. Lastly, the data collection and subsequent treatment of the data are presented.

Setting

A large metropolitan police department in the South was utilized in this study. Police substations and a classroom setting were available locations.

Population and Sample

The population consisted of veteran police officers and police cadets in a city. The sample utilized was a nonrandom sample of convenience, which consisted of all veteran officers on duty at each of the police substations when the survey was administered, and the police cadets in attendance at the Police Academy, who where willing to

participate. The sample consisted of 394 veteran officers and 75 police cadets.

Protection of Human Subjects and Agency Approval

Permission to administer the survey and to utilize the data were secured from the Director of Operations for the Police Department involved in the study. See Appendix C. No individual or program was identified by name, and all results were reported as group data. In order to protect the participants, no identifying data were collected.

Respondents were informed that their participation was strictly on a voluntary bases, and the completed survey would serve to indicate consent to participate in the study. A cover letter which accompanied the survey, indicated the purpose of the information and how to contact the researcher, if the participants had any questions, or wished to see the results of the research. See Appendix D.

Instrument

The six-part instrument used in this investigation was the AIDS Modified Knowledge Inventory (Appendix E). It was a modification the AIDS Knowledge and Attitudes Survey of the National Health Interview Survey developed by the National Center for Health Statistics. Attached to the instrument was a cover letter explaining the purpose of the

study.

The first part of the instrument contained questions related to demographic variables occupational status (job title or rank and years in present occupation), education, (number of college hours completed and degree obtained), age, religion, ethnic origin, and gender. The subjects responded by placing an "x" by the appropriate response, or by writing a short answer.

Part two of the AIDS Modified Knowledge Inventory (MKI) included: 44 statements or questions on the source of AIDS information, transmission, signs and symptoms, and prevention. The first section of part two of the MKI included a 6-item section (questions 1a-5) that related to sources of information on AIDS. It utilized a three category format. They were: (1) yes, (2) no, and (3) don't know. Question 2 used a fourth category (4) neither heard nor saw any public service announcements. On item 5 there were 14 possible sources of informational brochures or pamphlets about AIDS. The subjects were instructed to mark as many as were appropriate.

Questions 6 and 7 involved AIDS education and children. It utilized a four category format. They were: (1) yes, (2) no, (3) don't know, and (4) no children between the ages of 10-17. Question 8 concerned how much the subject knew about AIDS. This question involved a five category format. They

were: (1) a lot, (2) some, (3) a little, (4) none, and (5) don't know.

Question 9 asked whether there was a difference between having the AIDS virus and having the disease. The question involved a four category format. They were: (1) yes, (2) no, (3) other, and (4) don't know.

The second section contained 13 items (questions 10-22) that concerned general information on AIDS and manifestations of the disease. It utilized a five category format. They were: (1) definitely true, (2) probably true, (3) probably false, (4) definitely false, and (5) don't know.

The third section contained 11 items (questions 23a-k) that concerned the transmission of AIDS. It utilized a six category format. They were: (1) very likely, (2) somewhat likely, (3) somewhat unlikely, (4) very unlikely, (5) definitely not possible, and (6) don't know.

The fourth section contained 6 items (questions 24-29) that concerned blood donation and the blood test for HIV. Questions 24-27 utilized a three category format. They were: (1) yes, (2) no, and (3) don't know. Question 28 utilized a four category format. They were: (1) yes, (2) no, (3) don't know, and (4) never heard of test. Question 29 utilized a four category format. They were: (1) yes, (2) no, (3) other, and (4) don't know.

The fifth section contained 5 items (questions 30a-30e) that concerned the effectiveness of methods used to prevent sexual transmission. It utilized a five category format. They were: (1) very effective, (2) somewhat effective, (3) not at all effective, (4) don't know how effective, and (5) don't know method. The subjects responded to each statement by placing a mark beside the response that best represented their answer concerning the question or statement.

Reliability and Validity

An ex post facto reliability score of the MKI was determined using the Cronbach's Alpha measure of reliability. For the total score items (9-22, 23a-23k, and 30a-30e) the reliability coefficient was 0.808. Content validity was determined by the author A. M. Hardy, Division of Health Interview Statistics using a review panel of health educators. The Modified Knowledge Inventory was reviewed by a 3-member panel of health educators.

Scoring

Responses to items 1 through 8 and items 24 through 29 were tallied to determine frequencies and percentages. Items 9 through 23k and items 30a through 30e were used to determine the Knowledge score. A summative knowledge score

was determined for each subject. All correct answers received 1 point, incorrect answers 0 points. A zero was entered if the participant did not respond to the item. Due to considerable controversy in the scientific community; for Items 23d and 23k two responses were accepted as correct; very unlikely, and definitely not possible. See Appendix E for scored survey.

Data Collection

The Modified Knowledge Inventory (MKI) was administered to the veteran police officers at their assigned duty stations, during their preshift duty briefing. The MKI was administered to the police cadets at the Police Training Academy in a classroom setting. The MKI packet, which consisted of copies of the cover letter and instrument was distributed to the field officers by the researcher, who met with each duty shift. The MKI packet was distributed by the Training Officer, who explained the purpose of the study as directed by the researcher. The MKI packet collection for the veteran officers utilized a collection box that was located in the briefing room. The MKI collection box was picked up by the researcher within 24 hours of the MKI distribution at that specific location. The MKI packet was collected from the police cadets by the class supervisor and secured in the Training Supervisor's office until they were

picked up by the researcher.

Questionnaires that were returned blank or completed incorrectly were not included in the study. However if a statement was not marked or marked in a questionable manner, it was not included in the statistical analysis of the questionnaire.

Treatment of the Data

Frequencies and percentages were used to profile the demographic characteristics of the police officers, the general information and resources of AIDS information, and concerning blood donation. The data collected in this study were raw scores. A profile of the mean scores for: (a) police cadets, and (b) veteran field officers was developed. A t-test was used to accept or reject the hypothesis. A .05 significance level was set. A Cronbach's Alpha measure of reliability was performed on the Modified Knowledge Inventory to determine ex post facto reliability.

CHAPTER IV

FINDINGS

In this chapter the findings are presented. They include a description of the collected data, and statistical results for the research hypothesis.

Description of the Participants

The subjects in the sample (469) were either veteran police officers (394) or police officer cadets (75). Fifty-eight percent of the veteran officers surveyed completed the questionnaire. Ninety-eight percent of the police cadets completed the questionnaire.

Demographic characteristics included job title, years on the job, level of education, age, sex, religion, and ethnic origin. The veteran police officers had a mean of 6.50 years on the job ($SD = 7.02$), the cadets a mean of 0.47 year ($SD = 0.26$). The veteran police officers had a mean age of 32.14 ($SD = 8.74$), the cadets a mean age of 24.35 ($SD = 6.17$). The veteran police officers had a mean number of college hours completed of 80.56 ($SD = 67.54$), the cadets had a mean of 97.35 ($SD = 75.45$). The veteran police officers' college degrees obtained were classified as

follows: Associate's 27.36%, Bachelor's 60.47%, Master's 7.77%, and Doctorate 0.68 %. The police cadets' college degrees obtained were as follows: Associate's 34.69%, Bachelor's 61.22%, Master's 4.08%, and Doctorate 0.00%. The religious affiliation for the veteran police officers were Catholic 25.58%, Protestant 46.51%, Jewish 0.26%, and Other 27.65%; the police cadets religious affiliation were Catholic 29.73%, Protestant 43.24%, Jewish 0.00%, and Other 27.03%. The ethnicity of the veteran police officers were African-American 12.47%, Anglo-American 79.90%, Mexican-American 5.69%, Native-American 1.02%, Asian 0.76% and Other 0.25%; the police cadets ethnicity was African-American 27.03%, Anglo-American 55.41%, Mexican-American 12.16%, Native-American 2.70, Asian 2.70% and Other 0.00%. The veteran police officers' gender was: Male 87.56%, and Female 12.44%, the police cadets' gender: Male 82.43% and Female 17.57%.

MKI Findings

The 30-item research tool had a range of scores from 3.33 to 93.3. The range of scores for both groups are depicted in Table 1. The lowest score (3.33) was by a veteran officer. Both groups scored similar high scores.

Table 1

Range of Scores for the Modified Knowledge Inventory

Group	Low Score	High Score
Veteran Officers	3.33	93.3
Police Cadets	6.66	93.3

The mean scores were similar. However the mean score of the veteran officers (56.16) was slightly higher. The mean scores for both groups are depicted in Table 2.

Table 2

Mean Scores and Standard Deviation for the Modified Knowledge Inventory

Group	Mean Score	Standard Deviation
Veteran Officers	56.16	15.44
Police Cadets	53.42	19.25

Sources of Information

Frequencies and percentages were used to report

information on the sources of AIDS information (Items 1-5). The MKI asked about seeing or hearing public service announcements (PSA's) about AIDS. Eighty-one percent of the veteran officers and 76% of the police cadets reported seeing a PSA on television in the past month. Fifty-six percent of the veteran officer and 54% of the police cadets reported hearing an AIDS PSA on the radio in the past month.

In terms of more general sources of information 86% of the veteran officers and 96% of the police cadets reported receiving pamphlets/brochures about AIDS from at least one source in the month before the survey. The largest percentage of the veteran officers (23%) received their information from work. Whereas, police cadets (28%) received the information from work and school. There were 14 possible sources of pamphlets or brochures. The top six responses are depicted in Table 3.

There were two items about information received by children aged 10-17 (Items 6 and 7). Nineteen-percent of the veteran officers and 7% of the police cadets had discussed AIDS with their children and 12% of the veteran officers and 8% of the police cadets reported that their children had received instruction about AIDS in school.

Table 3.

Sources of AIDS Pamphlets/Brochures

Source	% Veteran Officers	% Police Cadets
Work	23%	28%
Doctor's office	14%	19%
School	11%	28%
Mail	11%	9%
Government	9%	9%
Other	32%	7%

General Knowledge about AIDS and Modes of Transmission

General knowledge about AIDS was ascertained through a series of statements about general characteristics of the disease and how it is transmitted (items 9-23k). Knowledge about three major modes of transmission; (sexual, through sharing contaminated needles for drug use, and from mother to fetus during pregnancy) were of particular interest. Seventy-seven percent of the veteran officers and 81% of the police cadets knew that it was "definitely true" that a person who has the AIDS virus can pass it on to someone else during sexual intercourse. In response to the statement "A pregnant woman who has the AIDS virus can give the AIDS

virus to her baby;" 79% of the veteran officers and 85% of the police cadets knew that it was "definitely true." Ninety-seven percent of the veteran officers and 89% of the police cadets knew that it "very likely" that a person will get AIDS or the AIDS virus infection from sharing needles for drug use with someone who has the AIDS virus.

Misconceptions about HIV Transmission

The MKI instrument asked respondents to estimate the risk of HIV transmission associated with several forms of contact with infected or potentially infected individuals. Response to these questions (23a-23k) indicated that there are many misconceptions about HIV transmission. For example, in response to question (23b) "How likely is it that a person will get the AIDS virus from working near someone with the AIDS virus;" only 27% of the veteran officers and 31% of the police cadets knew that it was "definitely not possible" to be infected in this manner. When the study participants were asked (question 23e) "How likely is it that a person will get AIDS or the AIDS virus from shaking hands, touching, or kissing on the cheek someone who has the AIDS virus" (item 23e) only 30% of the veteran officers and 33% of the police cadets knew that it was "definitely not possible" to contract the AIDS virus in this manner. In response to question (23g) "How likely is

it that a person will get AIDS or the AIDS virus from using public toilets;" only 23% of the veteran officers and 29% of the police cadets felt that it was "definitely not possible" to contract the AIDS virus in this manner. The following item (23i) had a very low percentage of correct responses. "How likely is it that a person will get AIDS or the AIDS virus infection from being coughed or sneezed on by someone who has the AIDS virus;" 8% of the veteran officers and 16% of the police cadets knew that it "definitely not possible" to be infected in this manner.

Blood Donations

The instrument included items (24-29) on blood donation, and awareness of the blood test for HIV. Sixty-nine percent of the veteran officers and 52% of the police cadets had donated blood. Whereas, 89% of the veteran officers and 83% of the police cadets had heard of a blood test that can detect the AIDS virus.

Preventive Measures

The instrument also included items (30a-30e) on how effective various methods were to prevent the AIDS virus transmission. The following items were of particular interest. Fifty-nine percent of the veteran officers and 65% of the police cadets correctly responded that using a

condom was "somewhat effective" in preventing the transmission of the virus (30b). Eighty-nine percent of the veteran officers and 77% of the police cadets responded that it is very effective preventive measure for two people who do not have the AIDS virus to have sex only with each other (30e). Table 4 profiles the findings by each item.

Table 4

Profile of the Findings by Item

Items	<u>Veterans</u>		<u>Cadets</u>	
	f	%	f	%
1. In the past month, have you seen any PSAs about AIDS on television?	320	81%	57	76%
1a. Heard any PSAs about AIDS on the Radio?	33	57%	41	55%
2. Were any of those PSAs called "America Responds to AIDS"?	28	7%	11	15%
3. In the past month, have you read any brochures or pamphlets about AIDS?	74	19%	28	37%
4. Have you ever read any brochures or pamphlets about AIDS?	319	81%	60	91%
5. Where did you get the pamphlets or brochures? (Work primary source).	93	24%	21	28%

Table 4

Profile of the Findings by Item Continued

Items	Veterans		Cadets	
	f	%	f	%
6. Have you ever discussed AIDS with any of your children between the ages of 10-17?	74	19%	5	7%
7. Have any or all of your children between the ages of 10-17 had any instruction at school about AIDS?	51	13%	6	8%
8. How much would you say you know about AIDS?	64	17%	20	27%
9. To the best of your knowledge, is there a difference between having the AIDS virus and having the disease AIDS?	327	83%	45	61%
10. AIDS can reduce the body's natural protection against disease.	343	87%	62	83%
11. AIDS is especially common in older people.	222	56%	37	49%
12. AIDS can damage the brain.	58	15%	8	11%
13. AIDS usually leads to heart disease.	110	28%	15	20%
14. AIDS is an infectious disease caused by a virus.	248	63%	49	65%
15. Teenagers cannot get AIDS.	373	95%	70	93%
16. AIDS leads to death.	287	73%	58	77%

Table 4

Profile of the Findings by Item Continued

Items	Veterans		Cadets	
	f	%	f	%
17. Looking at a person is enough to tell if he or she has the AIDS virus.	303	77%	62	83%
18. Any person who has the AIDS virus can pass it on to someone else during sexual intercourse.	303	78%	61	81%
19. A person who has the AIDS virus can look and feel healthy and well.	247	63%	39	52%
20. A pregnant woman who has the virus can give the AIDS virus to her baby.	311	79%	64	85%
21. There is a vaccine available to the public that protects a person from getting the AIDS virus.	335	85%	48	65%
22. There is no cure for AIDS at the present.	327	83%	58	78%
23. How likely do you think it is that a person will get AIDS or the AIDS virus infection from--	--	--	--	--
23a. Living near a hospital or home for AIDS patients.	200	51%	32	43%
23b. Working near someone with the AIDS virus?	101	26%	23	31%

Table 4

Profile of the Findings by Item Continued

Items	Veterans		Cadets	
	f	%	f	%
23c. Eating in a restaurant where the cook has the AIDS virus?	42	11%	8	11%
23d. Kissing - with the exchange of saliva- a person who has the AIDS virus.	71	18%	20	27%
23e. Shaking hands, touching, or kissing on the cheek someone who has the AIDS virus.	120	31%	25	33%
23f. Sharing plates, forks or glasses with someone who has the AIDS virus?	52	13%	16	21%
23g. Using public toilets?	90	23%	22	29%
23h. Sharing needles for drug use with someone who has the AIDS virus?	381	97%	67	89%
23i. Being coughed or sneezed on by someone who has the AIDS virus?	31	8%	12	16%
23j. Attending school with a child who has the AIDS virus?	120	30%	25	33%
23k. Mosquitoes or other insects.	198	50%	34	45%
24. Have you ever donated blood?	272	69%	39	52%

Table 4

Profile of the Findings by Item Continued

Item	Veterans		Cadets	
	f	%	f	%
25. Have you donated blood since 1985?	190	48%	27	36%
26. Have you donated blood in the past 12 months.	62	16%	8	11%
27. Have you heard of a blood test that can detect the the AIDS virus infection?	350	89%	62	83%
28. Are blood donations routinely tested now for the AIDS virus infection?	334	85%	63	84%
29. Do you think the present supply of blood is safe for transfusions?	218	55%	40	53%
30. Here are some methods people use to prevent getting the AIDS virus through sexual activity. How effective is--	--	--	--	--
30a. Using a diaphragm?	283	72%	42	56%
30b. Using a condom?	231	59%	49	65%
30c. Using spermicidal jelly foam, or cream?	242	62%	40	53%
30d. Having a vasectomy?	332	84%	53	72%

Table 4

Profile of the Findings by Item Continued

Item	Veterans		Cadets	
	f	%	f	%
30e. Two people who do not have the AIDS virus having sex only with each other?	349	89%	58	77%

Note. The values represent frequencies and percentages of affirmative or correct responses.

Findings by Hypothesis

The hypotheses stated: "There is no significant difference in the knowledge scores of veteran police officers and the police cadets, as measured by the MKI inventory." The mean for the veteran police officers was 56.16 (SD = 15.44). The mean for the police cadets was 53.42 (SD = 19.25). The difference between the two mean scores was 2.74. The t -test revealed that there was no statistically significant difference between the scores ($t = 0.248$, $p < .05$). Therefore the hypotheses was accepted.

Additional Finding

No significant difference was found using a t -test to

compare the two groups with respect to the total score ($t = 0.248$), or the AIDS transmission scale subscale (items 23a to 23k, $t = 0.519$). However, there was a statistically significant difference for the AIDS prevention subscale (items 30a to 30e), the field officers were significantly different from the police cadets ($t = 0.013$), with the veteran officers scoring slightly higher than the cadets.

Summary of Findings

In this chapter, the findings of the questionnaire regarding the veteran and cadet police officers' knowledge of AIDS were presented. The hypothesis used to investigate the difference in the veteran police officers' and the police cadets' knowledge of AIDS was accepted.

CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

Summary

The problem of this study was to determine if veteran police officers and police cadets demonstrated a difference in their knowledge of the AIDS. The purpose of this research was to measure the veteran police officers' and police cadets' knowledge of AIDS, to determine the ex post facto reliability of the knowledge inventory, to profile the demographic characteristics of the study participants, and to profile general AIDS information and resources.

After the instrument's content validity was determined by three experts in health education, the investigator obtained permission to conduct the study. The study was conducted over a one week time span, and utilized a descriptive study approach. Data were collected from a sample population which consisted of 469 subjects, 394 veteran officers and 75 police cadets.

A t-test was used to analyze the hypothesis. The research hypothesis, "There is no statistically significant difference in the knowledge scores of veteran police officers and police cadets," was accepted.

Conclusions

The primary conclusion was that veteran police officers and police cadets had a similar knowledge level of AIDS. A secondary conclusion was that there was a significant difference for the AIDS prevention subscale, with the veteran officers scoring slightly higher than the cadets.

Discussion

The finding of this study were very similar to findings in the literature concerning police officers. This study found that both the veteran and cadets had a good knowledge concerning transmission modes of HIV infection (blood, semen, vaginal secretions, etc.); but had a wide spread fear of unverified carriers of infection (public toilets, kissing on the mouth, or sharing household utensils). Herlitz and Brorsson (1990) reported similar finding in a 1987 study that compared the knowledge levels of police officers, nurses, and the general public.

This study also found a high level of fear concerning the possibility of HIV transmission through causal transmission. Hammett (1987) reported similar findings in a survey of law enforcement personal. Hammett (1987) reported that "despite all the evidence that the AIDS virus is not transmitted through casual contact, fully two-thirds of the law enforcement agencies surveyed reported concern about

becoming infected through casual contact in the performance of their duties" (p. 3).

One explanation of the results may be due to the ambiguity in the scientific community regarding AIDS; particularly concerning possible routes of transmission, and the efficacy of preventive techniques. Another consideration is that despite the extensive coverage of AIDS by the media, it is questionable whether or not the message is being listened to by the public. Also the veteran officers are required to have AIDS education as a part of their inservice training which could have affected their knowledge level. Another possible explanation might have been the result of the belief that AIDS is a "medical" problem and not something a police officer should have to be concerned about; or a general state of apathy toward AIDS by the police officers. However it is critical that the police officers realize that their life is always on the line and that if precautions are known and followed they may be able to save their life and the lives of other support personnel, such as Emergency Medical Technicians and Paramedics, with whom they work.

Another area of concern is with the instrument. Although the instrument has a high reliability coefficient, it may have lead to lower mean average due to the wording. The wording of some of the items may have caused confusion

for the participant or made the item difficult to understand. For example Item 13 states AIDS usually leads to heart disease with the responses options of definitely true, probably true, probably false, definitely false, and don't know.

Recommendations for Further Study

From this study, the following recommendations for further study are made:

1. To replicate this study among other populations from large urban police departments.
2. To evaluate each item on the instrument to determine the areas of confusion or misconceptions; so that this material can be specifically addressed in training sessions.
3. To explore the relationship between knowledge and behavior.

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APPENDIXES

APPENDIX A
Case Definition of AIDS

Surveillance Definition of AIDS (Adults): I.

Indicator Diseases* Diagnostic of AIDS if HIV Antibody Status is Positive or Unknown:

Opportunistic Infections

Candidal infection of the esophagus,** trachea, bronchi, or lungs
 Extrapulmonary cryptococcal infection
 Cryptosporidiosis with diarrhea lasting longer than 1 month
 Cytomegalovirus retinitis with vision loss,**
 Cytomegalovirus infection involving sites other than the liver, spleen, or lymph nodes
 Mucocutaneous herpes simplex infection with ulcer present longer than 1 month
 Herpes simplex infection of the esophagus, lungs, or bronchi
 Disseminated infection with Mycobacterium avium-intracellulare or Mycobacterium kansasii involving sites other than the lungs, skin or cervical or hilar lymph nodes
Pneumocystis carinii pneumonia
 Progressive multifocal leukoencephalopathy
 Cerebral toxoplasmosis,**

Malignancies

Kaposi's sarcoma in a patient under 60 years of age**
 Primary lymphoma of the brain in a patient under 60 years of age

*Confirmed diagnosis in the absence of other explanation for immunodeficiency.

**Diagnosis may be presumptive.

Surveillance Definition* of AIDS (Adults): II.

Additional Indicator Diseases Diagnostic of AIDS Only With Laboratory Evidence of HIV Infection:

HIV encephalopathy
 HIV wasting syndrome

Opportunistic Infections

Disseminated histoplasmosis at a site other than the lungs

or cervical or hilar lymph nodes
 Disseminated coccidioidomycosis at a site other than the
 lungs or cervical or hilar lymph nodes
 Isosporiasis with diarrhea of more than 1 months duration
 Any atypical mycobacterial infection at site other than
 lungs, skin, cervical or hilar lymph nodes
 Mycobacterium tuberculosis infection at any extrapulmonary
 site
 Recurrent nontyphoid salmonella bacteremia

Malignancies

Kaposi's sarcoma at any age
 Primary lymphoma of the brain at any age
 Small noncleaved lymphoma
 Immunoblastic sarcoma

Surveillance Definition of Pediatric AIDS

With Laboratory Evidence of HIV Infection:

Recurrent septicemia, (two or more episodes within 2 years)
 pneumonia, meningitis, bone or joint infection, or
 abscess of an internal organ or body cavity caused by
Haemophilus or Streptococcus organisms or by other
 pyrogenic bacteria
 Herpes simplex infection of the esophagus, lungs, or
 bronchi (in a patient over 1 month of age).
 Cerebral toxoplasmosis in a patient over 1 month of age
 Cytomegalovirus infection of an organ other than the liver,
 spleen, or lymph nodes
 Any other condition listed under Surveillance Definition of
 AIDS (Adults): II.

Without laboratory evidence of HIV infection:

Lymphoid interstitial pneumonia and/or pulmonary lymphoid
 hyperplasia in a patient under 13 years of age
 (confirmed or presumptive diagnosis).
 Any other condition listed under Surveillance Definition of
 AIDS (Adults): I.

On January 1, 1993, the AIDS surveillance case definition
 for adolescents and adults was expanded beyond the
 surveillance definition published in 1987 to include all
 HIV-infected persons with severe immunosuppression (<200
 CD4+ T-lymphocytes or a CD4 T-lymphocyte percentage of total
 lymphocytes of <14), pulmonary tuberculosis (TB), recurrent
 pneumonia, or invasive cervical cancer.

Centers for Disease Control. (1992). 1993 Revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. MMWR 41 (RR-17), 1-19.

APPENDIX B

Infection Control Procedures

INFECTION CONTROL PROCEDURES

The Centers for Disease Control offer the following recommendations and guidelines (1988):

In health-care settings, general infection control procedures have been developed to minimize the risk of acquisition of infection. Infection can result from contact with contaminated devices, objects, and surfaces or by direct transmission of an infectious agent from health-care workers to patients. These procedures also protect the health-care workers from the risk of becoming infected. The general infection-control procedures are designed to prevent transmission of a wide range of microbiological agents and to provide a wide margin of safety in the varied situations encountered in the health-care environment.

The general infection-control principals are also applicable to other work environments, where workers contact other individuals and where transmission of infectious agents may occur. The modes of transmission noted in the hospital and medical office environment area are also observed in the work situation of emergency and public safety workers. Therefore, the principals of infection control developed for hospital and other health-care settings are also applicable to other situations.

In 1985, the Centers for Disease Control (CDC) developed the strategy of "universal blood and body fluid precautions" to address concerns regarding transmission of HIV in the health-care setting. Universal precautions, as recommended by the Centers for Disease Control (CDC), are currently mandated by Occupational Safety and Health Administration (OSHA) and require health care workers to consider blood and certain body fluids from all patients to be potentially infectious for the Human Immunodeficiency Virus (HIV), Hepatitis B virus (HBV), and other bloodborne pathogens. Universal precautions also require the use of protective barriers, specific workplace practices, employee health management, education and training, and monitoring for compliance. The implementation of universal precautions for all patients theoretically

eliminated the need for the use of the isolation category "Blood and Body Fluids Precautions," which was previously recommended by the CDC for patients known or suspected to be infected with bloodborne pathogens

In the hospital and other health-care settings universal precautions should be followed when workers are exposed to blood, certain other body fluids (amniotic fluid, pericardial fluid, peritoneal fluid, pleural fluid, synovial fluid, cerebrospinal fluid, semen, and vaginal secretions), or other body fluids visibly contaminated with blood. Since HIV and HBV transmission has not been documented from exposure to other body fluids (feces, nasal secretions, sputum, sweat, tears, urine, and vomitus), universal precautions do not apply to these fluids. Universal precautions also do not apply to saliva, except in the dental setting, where saliva is likely to be contaminated with blood. Human exposure is defined as contact with blood or other body fluids to which universal precautions apply through percutaneous inoculation or contact with an open wound, nonintact skin, or mucous membrane during the performance of normal job duties.

Emergency and public-safety workers work in environments that provide inherently unpredictable risks of exposure, and general infection-control procedures should be adapted to these work situations. Exposures are unpredictable, and protective measures may need to be used in situations that do not appear to present risk. The nature of exposures encountered by emergency and public-safety workers may make differentiation between hazardous body fluids and those that are not hazardous very difficult. Therefore, when emergency medical and public-safety workers encounter body fluids under uncontrolled, emergency circumstances, they should treat all body fluids as potentially hazardous.

Universal Precautions Procedures

1. Appropriate barrier precautions should be used routinely to prevent skin and mucous-membrane exposure when contact with blood and other body fluids is anticipated. Examples of protective barriers include gloves, gowns, masks, and protective eyewear. Gloves should be worn for touching blood and body fluids,

mucous membranes, or non-intact skin of all patients, for handling item or surfaces soiled with blood or body fluids, and for performing venipuncture and other vascular access procedures. Gloves should be changed after contact with each person. Masks and protective eyewear or face shields should be worn during procedures that are likely to generate droplets or splashes of blood or other body fluids to prevent exposure of the mucous membranes of the mouth, nose and eyes. Gowns or aprons should be worn during procedures that are likely to generate splashes of blood or other body fluids.

2. Hands and other skin surfaces should be washed immediately if contaminated with blood and other body fluids. Hands should be washed immediately after gloves are removed.

3. Precautions should be taken to prevent injuries caused by needles, scalpels, and other sharp instruments or devices during procedures. Precautions are also needed when cleaning used instruments and during disposal of used needles. To prevent needlestick injuries, needles should not be recapped, bent or broken by hand, removed from disposable syringes, or otherwise manipulated by hand. After they are used, disposable syringes and needles, scalpel blades, and other sharp items should be placed in puncture-resistant containers for disposal. The puncture-resistant containers should be located as close as practical to the use area. Large bore reusable needles should be placed in a puncture resistant container for transport to the reprocessing area.

4. Although saliva has not been implicated in HIV transmission, to minimize the risk during emergency mouth-to-mouth resuscitation, mouthpieces, resuscitation bags, or other ventilation devices should be available for use in areas in which the need for resuscitation is predictable.

5. Health-care providers who have lesions or weeping dermatitis should refrain from all direct patient care and from handling patient-care equipment until the

condition resolves.

6. Pregnant health care workers are not known to be at greater risk of contracting HIV infection than non-pregnant workers. However, if the provider develops HIV infection during pregnancy, the infant is at risk of infection resulting from perinatal transmission. Individual hospitals have established varying policies regarding pregnant health care workers caring for patients with HIV infection or AIDS.

7. Isolation precautions should be used as necessary if associated conditions, such as infectious diarrhea or tuberculosis, are diagnosed or suspected (p. 877-887).

APPENDIX C
Agency Approval

**TEXAS WOMAN'S UNIVERSITY
HEALTH SCIENCES INSTRUCTION PROGRAM**

AGENCY PERMISSION FOR CONDUCTING SURVEY

The, _____ (name deleted)

GRANTS TO

Aline G. Williamson

a student enrolled in the master's degree program in Health Sciences Instruction at Texas Woman's University, the privilege of its facilities/data in order to study the following problem:

Police Officers' Knowledge of AIDS

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report. (initials deleted)
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report. (initials deleted)
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. Other Survey will be coordinated through
_____ (name deleted)

DATE: March 11, 1991

Aline G. Williamson
Signature of Student

(Deleted)

Signature of Agency
Barbara Tramm
Thesis Committee Chairman

APPENDIX D
Cover Letter

Dear Participant,

Thank you for your participation. I value your opinion regarding the issue of AIDS. Your participation in this study will assist me in meeting the needs of police officers concerning AIDS. This survey will be used to identify areas of special need or concern and will also assist in evaluating the current Police AIDS Curriculum.

The survey consist of forty two statements, please choose the response that best represents your answer. Participation in the study is voluntary. Your completion and return of the questionnaire indicates your consent to participate in the study. The responses will be anonymous, only group data will be used. Results of the study may be obtained by contacting the researcher.

Sincerely,

Aline G. Williamson
5323 Harry Hines
Dallas, Texas 75235-8890
(214) 688-3131

APPENDIX E

Scored Modified Knowledge Inventory

THE ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

DEMOGRAPHIC INFORMATION

Instructions: Please answer by placing an "X" by the appropriate response, or by writing a short answer.

Occupation Status:

1. Job title or rank: _____.
2. How long have you been in your present occupation: ____ years.

3. Education:

Number of college credit hours completed _____.

4. Degree obtained:

- _____ Associate degree
- _____ Bachelor's degree
- _____ Master's degree
- _____ Doctorate degree

5. Age as of last birthday: _____

6. Religion:

- _____ Catholic
- _____ Protestant
- _____ Jewish
- _____ Other (specify) _____

7. Ethnic origin:

- _____ White
- _____ Black
- _____ Hispanic/Latino
- _____ Native American
- _____ Asian
- _____ Other (specify) _____

8. Gender:

- _____ Male
- _____ Female

AIDS SURVEY

Directions:

Please place a check mark beside the response that best represents your answer, or feelings concerning the question or statement.

1. In the past month, have you--
 - 1a. Seen any public service announcements about AIDS on television?
☐ Yes
☐ No
☐ Don't know
 - 1b. Heard any public service announcements about AIDS on the radio?
☐ Yes
☐ No
☐ Don't know
2. Were any of those public service announcements called "America Responds to AIDS"?
☐ Yes
☐ No
☐ Don't know
☐ Neither heard nor saw any public service announcements.
3. In the past month, have you read any brochures or pamphlets about AIDS?
☐ Yes
☐ No
☐ Don't know
4. Have you ever read any brochures or pamphlets about AIDS?
☐ Yes
☐ No
☐ Don't know

5. Where did you get the pamphlets or brochures?
- ☐ Clinic, other than work clinic
 - ☐ Doctor's office (HMO)
 - ☐ Drug store
 - ☐ Public health department
 - ☐ Received in the mail without asking
 - ☐ Red Cross/Red Cross blood donation
 - ☐ Other blood donation
 - ☐ School
 - ☐ Sent/phoned for/requested it
 - ☐ Federal/State/local government
 - ☐ Work, other than clinic or nurse
 - ☐ Work, nurse or clinic
 - ☐ Other
 - ☐ Don't know
6. Have you ever discussed AIDS with any of your children between the ages of 10-17?
- ☐ Yes
 - ☐ No
 - ☐ Don't know
 - ☐ No children between the ages of 10-17.
7. Have any or all of your children between the ages of 10-17 had instruction at school about AIDS?
- ☐ Yes
 - ☐ No
 - ☐ Don't know
 - ☐ No children between the ages of 10-17.
8. How much would you say you know about AIDS?
- ☐ A lot
 - ☐ Some
 - ☐ A little
 - ☐ None
 - ☐ Don't know
9. To the best of your knowledge, is there a difference between having the AIDS virus and having the disease AIDS?
- ☒ Yes
 - ☐ No
 - ☐ Other
 - ☐ Don't know

10. AIDS can reduce the body's natural protection against disease.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know
11. AIDS is especially common in older people.
☐ Definitely true
☐ Probably true
☐ Probably false
☒ Definitely false
☐ Don't know
12. AIDS can damage the brain.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know
13. AIDS usually leads to heart disease.
☐ Definitely true
☐ Probably true
☐ Probably false
☒ Definitely false
☐ Don't know
14. AIDS is an infectious disease caused by a virus.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know
15. Teenagers cannot get AIDS.
☐ Definitely true
☐ Probably true
☐ Probably false
☒ Definitely false
☐ Don't know
16. AIDS leads to death.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know

17. Looking at a person is enough to tell if he or she has the AIDS virus.
☐ Definitely true
☐ Probably true
☐ Probably false
☒ Definitely false
☐ Don't know
18. Any person who has the AIDS virus can pass it on to someone else during sexual intercourse.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know
19. A person who has the AIDS virus can look and feel healthy and well.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know
20. A pregnant woman who has the AIDS virus can give the AIDS virus to her baby.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know
21. There is a vaccine available to the public that protects a person from getting the AIDS virus.
☐ Definitely true
☐ Probably true
☐ Probably false
☒ Definitely false
☐ Don't know
22. There is no cure for AIDS at the present.
☒ Definitely true
☐ Probably true
☐ Probably false
☐ Definitely false
☐ Don't know

23. How likely do you think it is that a person will get AIDS or the AIDS virus infection from--
- 23a. Living near a hospital or home for AIDS patients?
- ☐ Very likely
 - ☐ Somewhat likely
 - ☐ Somewhat unlikely
 - ☐ Very unlikely
 - ☒ Definitely not possible
 - ☐ Don't know
- 23b. Working near someone with the AIDS virus?
- ☐ Very likely
 - ☐ Somewhat likely
 - ☐ Somewhat unlikely
 - ☐ Very unlikely
 - ☒ Definitely not possible
 - ☐ Don't know
- 23c. Eating in a restaurant where the cook has the AIDS virus?
- ☐ Very likely
 - ☐ Somewhat likely
 - ☐ Somewhat unlikely
 - ☒ Very unlikely
 - ☐ Definitely not possible
 - ☐ Don't know
- 23d. Kissing - with the exchange of saliva - a person who has the AIDS virus?
- ☐ Very likely
 - ☐ Somewhat likely
 - ☐ Somewhat unlikely
 - ☒ Very unlikely
 - ☐ Definitely not possible
 - ☐ Don't know
- 23e. Shaking hands, touching, or kissing on the cheek someone who has the AIDS virus?
- ☐ Very likely
 - ☐ Somewhat likely
 - ☐ Somewhat unlikely
 - ☐ Very unlikely
 - ☒ Definitely not possible
 - ☐ Don't know

- 23f. Sharing plates, forks, or glasses with someone who has the AIDS virus?
☐ Very likely
☐ Somewhat likely
☐ Somewhat unlikely
☐ Very unlikely
☒ Definitely not possible
☐ Don't know
- 23g. Using public toilets?
☐ Very likely
☐ Somewhat likely
☐ Somewhat unlikely
☐ Very unlikely
☒ Definitely not possible
☐ Don't know
- 23h. Sharing needles for drug use with someone who has the AIDS virus?
☒ Very likely
☐ Somewhat likely
☐ Somewhat unlikely
☐ Very unlikely
☐ Definitely not possible
☐ Don't know
- 23i. Being coughed or sneezed on by someone who has the AIDS virus?
☐ Very likely
☐ Somewhat likely
☐ Somewhat unlikely
☐ Very unlikely
☒ Definitely not possible
☐ Don't know
- 23j. Attending school with a child who has the AIDS virus?
☐ Very likely
☐ Somewhat likely
☐ Somewhat unlikely
☐ Very unlikely
☒ Definitely not possible
☐ Don't know

- 23k. Mosquitoes or other insects?
☐ Very likely
☐ Somewhat likely
☐ Somewhat unlikely
☒ Very unlikely
☒ Definitely not possible
☐ Don't know
24. Have you ever donated blood?
☐ Yes
☐ No
☐ Don't know
25. Have you donated blood since March 1985?
☐ Yes
☐ No
☐ Don't know
26. Have you donated blood in the past 12 months?
☐ Yes
☐ No
☐ Don't know
27. Have you ever heard of a blood test that can detect the AIDS virus infection?
☐ Yes
☐ No
☐ Don't know
28. To the best of your knowledge, are blood donations routinely tested now for the AIDS virus infection?
☐ Yes
☐ No
☐ Don't know
☐ Never heard of test
29. Do you think the present supply of blood is safe for transfusions?
☐ Yes
☐ No
☐ Other
☐ Don't know
30. Here are some methods people use to prevent getting the AIDS virus through sexual activity. How effective is--

- 30a. Using a diaphragm?
____ Very effective
____ Somewhat effective
 x Not at all effective
____ Don't know how effective
____ Don't know method
- 30b. Using a condom?
____ Very effective
 x Somewhat effective
____ Not at all effective
____ Don't know how effective
____ Don't know method
- 30c. Using a spermicidal jelly, foam, or cream?
____ Very effective
____ Somewhat effective
 x Not at all effective
____ Don't know how effective
____ Don't know method
- 30d. Having a vasectomy?
____ Very effective
____ Somewhat effective
 x Not at all effective
____ Don't know how effective
____ Don't know method
- 30e. Two people who do not have the AIDS virus having sex only with each other?
 x Very effective
____ Somewhat effective
____ Not at all effective
____ Don't know how effective
____ Don't know method

This instrument is a modification of Hardy, AM. AIDS Knowledge and Attitudes for October-December: Provisional data from the National Health Interview Survey. Advance data from vital health statistics; no. 186. Hyattsville, Maryland: National Center for Health Statistics. 1990.