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A Comparison of HIV/AIDS Prevention Knowledge Between Students Receiving Mandated and Non-Mandated AIDS Prevention Education

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A COMPARISON OF HIV/AIDS PREVENTION KNOWLEDGE BETWEEN STUDENTS RECEIVING MANDATED AND NON-MANDATED AIDS PREVENTION EDUCATION

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A Culminating Project Presented to the Faculty of the Graduate School of Lindenwood College in Partial Fulfillment of the Requirements for the Degree of Master of Art

1996

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Dedication: With gracious thanks to Pat Tignor: friend, confidante, and encourager.

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The HIV Prevention Behaviors Knowledge Test for Teenagers was given to two samples of high school students to determine their knowledge about HIV prevention. The samples were taken from a high school in a state where AIDS prevention is recommended and the other sample was from a high school in a neighboring state where AIDS prevention education is mandated by state law. This testing was done to see if a difference in knowledge would exist between these two groups. As measured by a t-test of the two sample means, there was no significant difference in HIV/AIDS knowledge between the two groups. These results indicate that factors other than how policy is formulated might be more important in getting health information delivered to a specified population.

Chapter 1

INTRODUCTION

AIDS is the biggest public health crisis facing the United States today, and one that demands attention (Pike, 1995). In two decades, HIV/AIDS has gone from an unknown disease to one of epidemic proportion. It has become the major health and social issue of contemporary society. In the early days of AIDS, there was no anticipation that it would become a fundamental health and social issue. It now seems linked to social, economic, and political life (Mann, 1991).

The research that has taken place during the last 14 years has resulted in more knowledge about the AIDS virus than any other organism that exists (Jones, 1993). As more has been learned about it, many policies have been adopted in order to deal more effectively with HIV/AIDS (Quinn, 1992).

HIV and AIDS

Human immunodeficiency virus (HIV) is the retrovirus that causes AIDS. A retrovirus is a virus that reproduces itself differently than other viruses and is species-specific (Quackenbush & Sargent, 1990; Byrom & Katz, 1991). The HIV virus enters the blood stream and attacks the white blood cells that make up the immune system. As many of these white blood cells, called t lymphocytes, are destroyed, the body's ability to ward off disease is disabled. The immune system is designed to identify,

attack, and destroy foreign pathogenic substances, and when it fails, the body is left defenseless against an array of deadly agents (Cahill, 1983).

This powerful virus is fragile outside the body where it is short lived in the air and is easily killed with detergent or bleach (Fraser & Mitchell, 1988; Byrom & Katz, 1991). The HIV virus has the ability to mutate into forms resistant to the effects of any one drug (American Foundation for AIDS Research [AMFAR], 1993). Anyone is susceptible to this virus (Pike, 1995). HIV infection is initially silent and presumably life-long.

Acquired immunodeficiency syndrome (AIDS) is an infectious, preventable disease that is a specific and well-defined manifestation of HIV and is considered HIV's final stage (Burger, 1993). AIDS is diagnosed when t-cells have fallen below 200 per milliliter or with the presence of one or more opportunistic diseases such as serious infections, unusual types of pneumonia, or rare forms of cancer (Pike, 1995). These are considered opportunistic diseases, because in healthy immune systems these diseases would not pose the threat of death.

In the early 1980's, the first cases of an unknown disease were reported in New York City, Los Angeles, and San Francisco. Homosexual men started showing symptoms of unusual illnesses. Their immune systems were weakened, and they were seeking treatment for diseases that were very uncommon. These strange symptoms next started showing up in heterosexual Haitians, drug addicts, and finally

hemophiliacs. Within 18 months, thousands of cases appeared in the United States and Europe (Cahill, 1983).

The first cases of HIV/AIDS discovered in the United States were in the homosexual community. The original name given to the disease was, "Gay Related Immune Disorder," and Kaposi's Sarcoma was initially labeled "Gay Man's Cancer" (Quinn, 1992). This homosexual connection has had much to do with the lack of sympathy for those who have it. As HIV/AIDS has become more prevalent in the heterosexual community, it has also become a more socially acceptable disease. The disease was not identified until 1984 when researchers in both France and the United States identified the retrovirus, Human Immunodeficiency Virus, as the cause of AIDS (Quinn, 1992; Landry, 1989).

During the early years, there was no way to determine if a person had been infected with HIV, and as a result, the virus got into the blood supply. In the early 1980's the blood supply in this country was in danger of contamination that would be a direct conduit into the general population. People who received blood products between 1977 and 1985 and children born to them after these years have been considered at high risk (Quinn, 1992).

The ELISA, Enzyme-Linked Immunosorbent Assay, and the Western Blot Test for HIV antibodies came into existence in the spring 1985 (Quinn, 1992). Antibodies are proteins produced by the immune system in response to infection (Byrom & Katz, 1991). Since that time, donated blood is tested for HIV antibodies using a small amount of blood

for the test. If blood is found to be contaminated with the HIV virus, it is destroyed. Blood supply testing is today 99.8 percent effective (National Parent Teacher Association [NPTA], 1993).

If a volunteer donor gives blood during the "window period," 6 to 12 weeks after acquiring the virus, there may be no antibodies of the virus to be detected yet, and so this puts donated blood at slight risk of containing HIV (American Red Cross, 1990). The blood supply is as safe as possible, but the Red Cross is looking for even better ways to screen blood.

Different states have adopted various policies concerning HIV testing and confidentiality, reporting, and mandating. Testing for HIV infection can be done at hospitals, doctors offices or anonymous testing sites. Test results received at hospitals and doctors offices may be reported to insurance companies which could result in insurance problems for HIV infected patients (Quackenbush & Sargeant, 1990). The problems that AIDS brought to the gay community caused them to ban together with strong advocacy groups. These groups lobbied to strongly influence the laws regarding anonymous HIV testing (Quinn, 1992).

Some people who are at risk will not always come forward to be tested because of HIV testing requirements. They do not want to allow their names associated with the stigma and fear of possible discrimination associated with AIDS (Quinn, 1992). Anonymous testing

means being tested and using a code number to get results without names and addresses being connected to the test outcome in any way.

The issue of anonymous versus confidential testing may soon become a non-issue. Home testing kits may soon be approved for public use. In this kit, a blood sample will be collected at home and sent to a lab for the usual antibody test. Results of the test will be reported to the user over the phone using a number which is a part of each kit (Today Show, 1996).

The etiology of AIDS is unknown. It is either a new human disease or a virus that has crossed the species barrier to humans. It is thought to have started in Africa. Blood stored in Zaire in 1959 contains the first known evidence of HIV (Fraser & Mitchell,1988). Several species of monkeys in Africa have a virus of similar structure to HIV. African people sometimes keep these monkeys as pets and also at times eat them (Quackenbush & Sargent, 1990).

Several years after the discovery of AIDS in the United States, the first cases were recognized in Africa. Many had been dying of AIDS in Africa, but they were misdiagnosed as having tuberculosis and other diseases (Dixon, 1989).

Africa has the most AIDS cases today with an estimated five-eighths of the total cases thought to be in that area of the world (Mann, 1991). In parts of Central Africa, whole villages have been wiped out by AIDS. In Africa, AIDS is called the "slim disease" because of the emaciation and weakness that often accompanies it. Patients seeking

treatment in clinics are turned away when they are thin without knowing for certain that they have AIDS (Dixon, 1989).

World health organizations have been organized to work together since 1987 to combat the AIDS crisis (Cherney, 1995). Courses on setting up programs to help manage AIDS have been given, and vaccine development has been a top priority.

Representatives of 42 countries met in Paris on World AIDS Day, December 1, 1994, to sign a declaration to step up action on AIDS research, prevention, and patient care. Ninety percent of the world's HIV positive population live in developing countries (Cherney, 1995).

After contracting HIV, there is a window period where there are no symptoms and HIV antibodies cannot be detected in the blood. Although sometimes within two to twelve weeks after infection a acute flu-like illness is experienced, it often takes years for a person to discover that they are infected with the HIV virus (Quackenbush & Sargent, 1990). The incubation period can last up to 5 to 20 years with the average time being 8 years 4 months before first symptoms appear (Jones, 1993). During this incubation period, when unaware that they have this disease, they may infect countless others. When signs do appear of HIV, they vary from person to person but usually include: extreme tiredness, fever, loss of appetite and weight, diarrhea, night sweats, persistent dry cough and a general malaise (Cahill, 1983).

Anyone who has contracted the HIV virus, whether or not there are symptoms, is capable of infecting others through direct contact

of their bodily fluids, with another person's (Burger, 1993). In order to become infected with HIV, the virus must get past skin which is an effective barrier to this disease.

Methods of transmission include having vaginal, anal, or oral sex with an infected person; sharing intravenous drug needles with an infected person; or by an infected mother to her baby during pregnancy; or possibly through breast milk (American Red Cross, 1990). At this time, prevention is the only known way to avert infection (Association for the Advancement of Health Education [AAHE], 1991).

Some sexual activities carry higher risks than others. Sexual practices that may result in small, possibly invisible tears increase the risk of infection (Byrom & Katz, 1991). Anal intercourse is the behavior with the highest risk because of this reason (Landry, 1989). Abstinence and mutual monogamy are the only 100 percent effective ways to not get this virus sexually (Byrom & Katz, 1991). The American Red Cross (1990) lists the following as ways that cannot cause HIV infection: shaking hands, hugging, coughing, sneezing, kissing, swimming pools, toilet seats, straws, spoons, cups, food, insects, and animals (American Red Cross, 1990; Burger, 1993).

At first this disease was thought to be a risk for only certain populations, such as homosexuals and intravenous drug users, but it is now known that it is behavior that puts people at risk. "It is not who you are, but what you do that increases or decreases your chances of being infected with the AIDS virus" (Wolfe, 1995, p. 139). There is no vaccine

or cure, at this time. The only way to avoid this disease is to prevent infection.

Mann (1991) sees three elements as being essential to the curtailment of HIV/AIDS: information/education; health and social services; and a supportive social environment. The best defense to avert the spread of AIDS is education to ensure knowledge of safe behavior. Health and social services are needed to help people sustain the needed behavior changes, and a supportive social environment helps prevent the stigma and discrimination (Mann, 1991).

Surgeon General Novello (1993) has referred to AIDS as "the epidemic of our generation," and it has also been called the "twentieth century plague" (Johnson, 1991). AIDS is considered an epidemic due to its rapid spread. Those in the developed countries of the world are slow to think in the terms of epidemics because of the medical advances of this age (Fraser & Mitchell, 1988).

Epidemics are not new. The Great Plague in Europe in 1348 and 1349 killed one fourth of the population, and that epidemic was blamed on the Jews. San Francisco had an epidemic of bubonic plague in 1900, and the Chinese population was hardest hit. This epidemic was blamed on the Chinese residents (Cahill, 1983).

In the past, society has responded to epidemics first with denial, second with anxiety or hysteria, and lastly by searching for a scapegoat (Jones, 1993). As the most serious infectious disease of modern times,

AIDS seems to have evoked a similar reaction (Hubbs-Tait & Garmon, 1995).

HIV/AIDS is a worldwide problem. Some of the countries with the most rapidly growing cases of this disease are in the underdeveloped areas of the world.

HIV/AIDS is a new problem, one that society was not set up to deal with (Fraser & Mitchell, 1988). Basic knowledge of HIV transmission has greatly increased over the late 80's and 90's (Holtgrave, Qualls, Curran, Valdiserri, Guinan, & Parra,1995). Prevention programs world wide and particularly in the the developing world seem to have started too fast and with insufficient resources (American Foundation for AIDS Research, 1993). AIDS has brought together many different world managers including: health, education, labor, finance, and planning (Cherney, 1995).

In the United States, the AIDS health crisis has been referred to as a "national failure." This is because of allegations of incompetence that have been cast on many governmental agencies (Price, Everett, & Poureslami, 1995). Some have thought that the AIDS crisis would be less severe if state and federal offices had formulated policies more swiftly.

States are free to establish their own HIV blood testing procedures and public health measures. As a result, there are different laws about keeping statistics about HIV positive persons, with no means of

determining exact numbers of HIV infected people in the United States. It can only be estimated (Quinn, 1992).

AIDS has been recognized as a disease for fourteen years now, and since that time, more than 240,000 people have died from AIDS (Page, 1995). About one million Americans are infected with the HIV virus. That is more victims than have died in the following wars: Vietnam, Korea, World Wars I and II, and the Civil War (Popham, 1993). It was the leading cause of death for men and the fourth leading cause of death in women ages 15 to 24 during the year 1991 (Page, 1995; Novello, 1993).

AIDS kills young, productive members of society. Since 1989, heterosexual transmission has become the greatest proportional increase in reported AIDS cases (Page, 1995). The increase reported by the Centers for Disease Control and Prevention between September of 1992 and September of 1993 were a 223 percent increase for 13 to 19 year old males and a 188 percent increase for females of the same age (Robenstine, 1994). It is quite possible that children contracting AIDS will increase greatly in the future due to the increase in the HIV virus among women of childbearing age (Hall, 1989).

Statistics released from the National Commission on AIDS have reported racial inequality in the number of minorities who have the virus in the United States. Blacks and Hispanics are disproportionately affected (Fraser & Mitchell, 1988). Thirty percent of the infected population are black and 20 percent are Hispanic (Wolfe, 1995).

Approximately 70 percent of pediatric AIDS cases are minority children (Fraser & Mitchell, 1988).

HIV/AIDS is having its most severe effects on inner city America. There is a correlation between both economic status and educational levels and HIV infection. Inner city residents face so many problems that, "health takes a back seat to survival needs, such as coping with stress and feeling cared for" (Wolfe, 1995, p. 141).

It is often forgotten that HIV/AIDS is a relatively new phenomenon. It is a vigorous, volatile disorder. This disease can endanger the health and fiscal resources of the next generation of Americans (Fraser & Mitchell, 1988). The government requested 873.4 million dollars for HIV/AIDS research in 1993. The estimated cost of treating those with AIDS in 1995 was 15.2 billion dollars (Price et al. 1995).

Experts believe that HIV and AIDS will be around for many years. Some think the major impact of this disease is still ahead (American Red Cross, 1990; Mann, 1991; Johnson, 1991). It is safe to assumed that HIV will become a part of most human communities in the future (Mann, 1991).

People diagnosed with AIDS are living longer. The American Foundation for AIDS Research (1993) reported that those diagnosed in 1992 were expected to live two to three times longer than those found to have HIV in 1984. As more has been learned about this disease, earlier diagnosis has resulted in better medical management, updated anti-

retroviral treatment, and more successful medical interventions for opportunistic infections (AMFAR, 1993).

AIDS EDUCATIONAL PROGRAMS

Until an effective vaccine for protection against HIV is found, the only way to contain the AIDS epidemic is through educational programs designed to teach people how to eliminate their risk of becoming HIV positive. Both accurate information and skills instruction are needed parts of these educational efforts. The ultimate goal of preventive HIV/AIDS education is to eliminate behaviors that result in transmission of HIV (Byrom & Katz, 1991).

The Centers for Disease Control and Prevention [CDC], (1994) the federal health agency that works with communicable diseases, provides HIV/AIDS prevention education through three primary avenues: school-based education; community, regional, and national organizations; and programs designed for the general public. It has been found that early intervention using counseling, education, and behavioral skills training can markedly reduce high-risk behaviors (AMFAR, 1993).

Educating the public has been a priority. In 1986, then Surgeon General, C. Everett Koop, sent informational booklets to all American homes informing citizens about HIV/AIDS.

The media is supplying information about AIDS in many formats. Public service announcements are designed to educate the public at large (Centers for Disease Control and Prevention, 1994). Governmental

agencies, mass media, and celebrities have been used to get important messages about HIV/AIDS to the public (Hubbs-Tait & Garmon, 1989).

There is HIV prevention education taking place in clinics and testing programs. Other programs target the homeless, jailed, migrant workers, and other high-risk persons. Youth who have dropped out of school are more often engaged in activities that put them at high risk for contracting HIV (National Association of State Boards of Education [NASBE], 1995). Schools working with the community may be able to provide needed information to these youths.

HIV/AIDS is a new problem, one that society was not prepared to combat (Fraser & Mitchell, 1988). It has prompted educators to be more aggressive in advocating and providing health and sexuality education (Johnson, 1991).

Using schools as a primary prevention source has worked in the past. American schools have been a driving force for prevention in health matters for more than a century (Boswell, Fox, Hubbard, & Coyle, 1992). It is an obvious route to reach American youth, who are required to attend. Ninety-one percent of all persons ages 5 through 19 in the United States are enrolled in schools (NASBE, 1995). School health education programs consistently have had a positive effect on eradicating student health risks (CDC, 1994).

The Department of Health and Human Services has set health objectives to be met by the year 2000, called Healthy People 2000. One of these objectives is to increase to at least 95 percent the proportion of

schools that have age-appropriate HIV education curricula for students in 4th through 12 grades as part of their school health curriculum (Lindes, Sagel, & Serlin, 1995).

Education about HIV/AIDS has become partly the responsibility of school systems, since many parents do not discuss sexual issues including AIDS with their children because either they are not knowledgeable enough or do not feel comfortable with this subject due to its sexual nature (Quackenbush & Sargent, 1990; Alyson, 1990; Lynch, 1991; NASBE, 1995; Koop, 1991). Many parents are relieved to be alleviated of this perplexing responsibility.

A 1987 poll taken by NBC, found that 91 percent of adults were in favor of public schools teaching AIDS prevention (National PTA, 1989). Other studies have found that students also favor having HIV/AIDS prevention education taught in schools (Weinstein, Rosen, & Atwood, 1991; NASBE, 1995; Acosta, 1992).

Even with all the positive support, "strong opposition to realistic and meaningful HIV/AIDS education continues" (Robenstine, 1994, p. 229). The stigma associated with this illness is still an obstacle to providing HIV/AIDS education. Many parents who oppose AIDS prevention education, do so because they believe that talking about sexual issues will appear to implicitly endorse sexual activity among teens (NASBE, 1995). Studies have found that HIV-related education in schools does not accelerate the onset of sexual activity among students.

In fact, HIV prevention programs have been shown to delay the onset and reduce high-risk behaviors (Holtgrave et al. 1995; NASBE, 1995).

Consistent messages from home and school are needed that support and reinforce one another for the greatest payoff from prevention education (Lynch, 1991; Weinstein et al. 1991). Parents and schools can make decisions and design curricula dealing with HIV/AIDS prevention cooperatively. Building this coalition also gives students the underlying message that HIV/AIDS is not a taboo subject. It is a topic that both parents and schools view as important, and an issue that both groups are willing to communicate about (Lynch, 1991; Weinstein et al. 1991; Acosta, 1992).

Local districts need to set up clearly written programs for their students, parents, and communities (Fraser & Mitchell, 1988). Parent HIV/AIDS prevention education programs might be a component of this alliance (NASBE, 1995). The information that parents receive could assist them in opening up the lines of communication with their children about all sexual matters.

AIDS education has not changed greatly since the beginning of this disease. The primary tactic used in this educational crusade has been to provide people with sensible information. It has taken on a directive approach because people have needed to be told what to do to keep themselves safe (Odets, 1995).

This unusual health threat needs more than routine solutions. It needs long-term programs. Schools are able to provide needed

education, but it must be done in a comprehensive manner rather than being left to chance (Kolbe, 1992). One time prevention programs such as school assemblies are not enough. Skills that assist pupils to make healthy choices must be built on year after year to be effective (NASBE, 1995). Comprehensive health education is more effective in changing behavior than brief and uncoordinated lessons (Burger, 1993; AAHE, 1991).

The goal of comprehensive sexuality education is to prepare students to become sexually healthy adults. Programs may need to include: instruction about contraception and disease prevention, decisions making, interpersonal skills, and responsible sexual behavior (People for the American Way, 1994).

Expansiveness is a trait of select health programs. Extensive programs can include: providing AIDS prevention instruction to all grades; using effective materials and programs; community participation; using trained, competent staff; having school policies in place; interagency cooperation; and funding, monitoring and evaluating existing programs (Fraser & Mitchell, 1988).

HIV prevention messages must be tailored to each audience and their needs. An awareness of : "age, educational level, sex, geography, race, ethnicity, sexual orientation, values, belief and norms" is needed when designing and implementing HIV/AIDS prevention education policy and programs (Odets, 1995, p.135).

Elementary school students are thought to be a prime target for AIDS prevention education, because they have not yet initiated risky behavior. AIDS education is most effective when preventing behavior rather than extinguishing established behavior (Brown, Reynolds, & Brenman, 1994).

Many proposals suggest starting HIV/AIDS education in the first grade. The Association for the Advancement of Health Education (1991) favors initiating AIDS education at the third grade level.

Different approaches to HIV/AIDS education are needed at different grade levels to meet the needs of different stages of developmental maturity. It is very important to speak to students at their level of understanding. Awareness of AIDS and accurate knowledge about it increase with age (Brown, et al., 1994).

As in other educational endeavors, it is important to reduce participants' stress levels by caring for their physical and emotional needs (Wolfe, 1995). Decreasing anxiety about HIV will allow children to maximize processing information with optimal concentration (Brown, et al., 1994).

All school personnel would benefit from being informed about HIV/AIDS prevention (AAHE, 1991). Complete prevention coverage would be assured by educating everyone including: administrators, teacher, and other school personnel (Fraser & Mitchell, 1995).

Public support needs to gathered for policies and programs (Fraser & Mitchell, 1988). This will ensure that HIV/AIDS prevention

education will continue, gain momentum, and improve in quality.

To be considered effective, HIV/AIDS education must convince young people to adopt safe behaviors (Fraser & Mitchell, 1988). Knowledge must be joined with both skills and the ability to reason morally before most are able to choose safe behaviors (Wolfe, 1995).

The need for AIDS education has energized health education because it has stimulated the need for creative approaches in presenting these health messages (Dorman, Small, & Lee, 1989). Using a variety of formats in instruction including theater, rap groups, media, and small group discussions are ways of teaching that are used in an effort to keep the instruction fresh and more interesting than using only a lecture format (AAHE, 1991; Jones, 1993). Other effective methods being used in presenting HIV/AIDS information are peer teaching, teen theater, exhibiting panels of the AIDS quilt, or having speakers who is HIV positive, peer leaders, drama, health columns about HIV/AIDS in school newspapers (NASBE, 1995; Robenstine, 1994). Presently the most frequently reported ways of teaching AIDS education include: videos, lectures, discussions and small group activities (Gingiss & Engquist, 1994).

Programs need to emphasize: how HIV is transmitted, how it is not transmitted, and how best to protect oneself from infection. School curricula need to address blood supply issues such as donating blood, receiving blood, and having a blood test, because this an issue in which students are often misinformed (Jones, Ellis, Tappe, & Lindsay, 1991).

Statistics should only be used sparingly (Jones, 1993). Facts are not enough to change behavior.

It is a challenge to allay the fears that accompany HIV/AIDS. It must be depicted as a disease the can happen to anyone, while still trying to calm fears by increasing the understanding of this disease (Kolbe, 1992; Johnson, 1991; Byrom & Katz, 1991).

Moral reasoning is a psychosocial factor that might make a difference if taught along with HIV/AIDS education. Some think a higher level of moral reasoning is needed for translating AIDS knowledge into behavior that reduces risky behavior (Hubbs-Tait & Garmon, 1995; Wolfe, 1995).

Interesting results were given in a study of how AIDS knowledge correlates with risky behavior among high and low moral reasoners. High moral reasoners lowered risky behavior as they became more knowledgeable about AIDS while low moral reasoners actually adopted more risky behavior (Hubbs-Tait & Garmon, 1995).

AIDS/HIV educators should be aware that their students are at different levels of moral reasoning and should try to expose students to higher levels of moral reasoning. Since many adolescents are low level moral reasoners, it might also be more effective to use motivational tactics that appeals to this morality level, such as self-interest and approval by others. Although moral reasoning levels is not the entire answer to changing behavior, it is an area worth consideration (Wolfe, 1995).

Discussing HIV/AIDS can be difficult for many parents and teachers. HIV/AIDS education that gives the facts clearly, concisely, and consistently is needed; no matter who is teaching. This sensitive subject matter would be best presented by responsible individuals such as specially trained teachers and health professionals (Jones, 1993).

HIV/AIDS education takes place in a number of different subject areas within the school setting including health, home economics, biology, family life education, sociology, and sexuality education. In a survey of middle school and high school teachers who teach HIV/AIDS prevention, 70 percent thought that there was a good fit between the subjects they taught and HIV prevention education (Gingiss & Engquist, 1994).

Most teachers in the study favorably viewed HIV education and their role in providing this instruction. It was important to most educators in this study that their students receive HIV instruction, because the majority believed that providing that instruction would have some to much influence on subsequent student behavior (Gingiss & Engquist, 1994).

Most teachers in this study used self-developed materials. How the virus is and is not transmitted, abstinence, avoidance of IV drug use, defining AIDS, and decision-making skills were the areas that were most often taught .

The majority of these teachers were self-taught . Those who were trained, averaged only six hours of formal instruction, and most teachers

surveyed desired more training (Gingiss & Engquist, 1994). Teachers must have enough information and training to feel comfortable working with this subject matter (NASBE, 1995).

Educators in this study reported that there were no problems with those with whom they worked. These teachers felt that other staff, administrator, parents, and students supported their efforts at providing HIV education (Gingiss & Engquist, 1994).

The main target for much of HIV/AIDS prevention education are teens. This is in part because they are cognitively more able to take in the information presented. Adolescents are also at the age of sexual maturity and adults realize the need for giving them knowledge needed to help keep them safe.

ADOLESCENCE

"Adolescence," is derived from Latin meaning "to grow into maturity," and it is usually considered the years between ages 13 and 20 (Papalia & Olds, 1987). Both physiologically and culturally, adolescence marks the end of childhood and the emergence into adulthood.

This bridge into adulthood is marked by rapid physical growth, sexual maturity, and discovering one's self. Throughout this period of life, teens are examining their own capabilities while also testing limitations imposed by adults. Teens are seeking out their own values, social direction, and impending vocations (Ambron, 1985).

Teenagers are at an experimental stage of development in which they are coming to terms with their identities. Always before their parents

have defined who they are. During the adolescent years, they experiment with interests and behaviors to discover who they are apart from their parents (Quackenbush & Sargent, 1990).

Most adolescents are at a low level of moral reasoning, and decisions regarding sexual involvement are often one of the first moral dilemmas facing them. The conflict between the personal desires to experiment sexually and the moral beliefs adolescents were raised with is often one of the first times teens reach a depth of inner moral strife (Hubbs-Tait & Garmon, 1995).

Children worldwide are maturing sexually at earlier ages than in the past. As a result, interest in the opposite sex and dating behaviors are occurring at earlier ages (Ambron, 1985).

Traditional American standards of sexual behavior condemn adolescent sexual expression (Ambron, 1985). At the same time, sex is extolled by the media. This creates a double message for teens to decipher concerning their sexuality. In industrialized societies, adolescents are physically and sexually mature but cannot live adult life on their own for several more years. This creates a difficult dilemma for them.

Adolescents believe that their peers are more sexually active than they actually are. They sometimes think they alone are without sexual experience. Teens often feel pressured to become sexually active from their peers, from those they date, and sometimes it comes from inside (Ambron, 1985).

The early adolescent years, from ages 11 to 15, are ones in which a major task is to achieve abstract thought. Piaget calls this final stage of cognitive development, the period of formal operations. It is when thinking matures to a level that will allow cognitive manipulation of thoughts or things outside one's own realm of experience. Symbols and metaphors are more completely understood. Teens become introspective and spend time thinking about ideals (Ambron, 1985). At this period, they place ideals before family values.

Morally teens are usually starting to deal with life in the third level of morality called Postconventional Morality. Lawrence Kohlberg saw this as a time when decisions can be controlled internally and are based on principles that have been thought through (Ambron, 1985).

Teens are at special risk for HIV infection, because it is a time of experimentation with alcohol, drugs, and sex. Teenagers have little fear of something untoward happening to them (Pike, 1995). They view themselves as immortal partly because they have not had experiences with long term illness, terminal disease, or death (Jones, 1993; Price et al. 1995). Teens view themselves as, "immortal and invulnerable to health threats" (Price et al. 1995, p. 39). These traits contribute to adolescents choosing behavior that puts them at risk for HIV infection.

Teens in rural and urban areas of the United States often engage in sexual behaviors that put them in a high risk category for contracting HIV (Quackenbush & Sargent, 1990; Boswell et al. 1992). Although they

have the facts, their sexual behavior would indicate that knowledge has not affected their conduct.

Sixty-six percent of rural teens and 60 percent of urban youth indicated that they have engaged in sexual intercourse (Boswell et al. 1992). Surveys show that 70 to 80 percent of teens are sexually active with only 34 percent using birth control (Jones, 1993). Only 13 percent of both urban and rural youth indicated they used condoms during any type of sexual intercourse (Boswell, 1992). The average age of first intercourse is reported at 16 years of age, and about 20 percent of teens report having multiple sexual partners (Dixon, 1994; Weinstein, et al., 1991; Robenstine, 1994). By the senior year of high school, 46 percent of the adolescent population is estimated to be sexually active (AAHE, 1991). While the majority of teens are sexually active, they are also seen as sexually illiterate (Hall, 1989).

Teens may feel sexual pressure from not only their peers, but also from what they see and hear in the media (Pike, 1995). Teens continue to receive many conflicting messages about their sexuality. Some blame adolescents' risky sexual behavior on this duplicity (Yarber, 1992).

Another indication of high risk for HIV infection among teens is shown by the high rate of sexually transmitted diseases that are contracted by teens (Boswell et al. 1992). Venereal diseases among teens are rising, with three million teenagers getting sexually transmitted diseases each year (Page, 1995). Eighty-six percent of all sexually transmitted diseases occur among adolescents (Robenstine, 1994).

Some reasons for this phenomenon are increased sexual activity among this age group; oral contraception which protects against pregnancy but not venereal diseases; unrealistic reasoning that leaves teens thinking that they and their lovers are immune to natural consequences; and risking venereal diseases rather than choosing not to have sexual intercourse (Papalia & Olds, 1987). Those with untreated sexually transmitted diseases are more vulnerable to acquire or pass on the AIDS virus (Cherney, 1995).

A recent national survey by the U.S. Centers for Disease Control and Prevention with young homosexual and bisexual men, has indicated that 7 percent have contracted HIV. This survey, which included men ages 15 to 22 from six urban counties, reports that more than a third of the subjects have had unprotected anal sex within the past 6 months (High HIV Prevalence, 1996).

Some actions appear to be linked to each other. Young people who engage in some behaviors are more likely to engage in other linked behaviors. An example of this is when teens engage in sexual activity at younger ages, they are more likely to have more sexual partners, are more likely to become pregnant, and are less likely to practice safer sex (National Association of State Boards of Education, 1995). Teens sometimes incapacitate themselves with drugs, then engage in risky sexual behavior that they normally would not choose to do (Vedantam, 1995).

Disadvantaged teens are more at risk because of living in areas

that have higher rates of drug dependency and drug trafficking. Youth in these areas are also more likely to drop out of school and will receive less information about HIV/AIDS. Inner city teens are sometimes living in areas where they daily face threats to their existence, so messages about AIDS being a killer is not viewed as an unusual danger (Wolfe, 1995).

At this time, not many teens have been diagnosed with HIV or AIDS, but about 50 percent of all HIV infections have been to those under age 25 (Cherney, 1995). The long incubation period between HIV infection and symptoms of the virus show that the many people who become HIV positive in their twenties were probably infected while still teens (Acosta 1992; Weinstein et al. 1991).

Teens that were subjects in a study of rural and urban youth agreed that HIV/AIDS education should be taught in schools (Boswell et al. 1992; Weinstein et al. 1991). Young people are clearly in need of information about HIV/AIDS, skills to delay sexual involvement, as well as skills to refuse unsafe sexual practices and drugs (Cherney, 1995).

A survey of ninth graders revealed that young people learn about AIDS from friends and television. The least consulted resources were listed as teachers, parents, and books (Jones, 1993). The majority of subjects in Weinstein's et al. (1991) study reported learning about HIV/AIDS in health class, but when they want to talk about HIV/AIDS, they choose to do so with their friends first. These students reported that the

best source for gathering more AIDS information were newspapers, magazines, television, and school (Weinstein et al. 1991).

Teens are becoming more knowledgeable about HIV/AIDS. Eighty percent of teens in a study conducted by Boswell et al. (1992) reported having received HIV/AIDS education. Sixty per cent of the subjects in the Jones et al. study (1991) indicate that they had received some HIV/AIDS education. Newman (1991) found Nebraska schools to be providing increasing HIV/AIDS education at all grade levels, but the largest increase in instructional time was at the lower grade levels.

Boswell et al. (1992) found that their subjects exhibited higher levels of HIV/AIDS knowledge than studies that had been done earlier. The Center for Disease Control has found that between 93 to 98 percent of teens know that AIDS is transmitted by sexual contact and IV drug use (Jones, 1993). Young teens worry about HIV/AIDS, but as they grow older this worry lessens (Weinstein et. al. 1991).

Although teens are receiving more information about HIV/AIDS, it is not clear if it is always age appropriate information. Their depth of understanding is another unknown (Dixon, 1994; Weinstein et al. 1991). Although misconceptions are also found to be decreasing, (Boswell et al. 1992) there still are errors in thinking about the risk of HIV infection associated with donating blood (Weinstein et al. 1991).

Health behavior is very difficult to change as shown through teenage pregnancy and alcohol usage studies. Information is not

enough. The group norm must be changed, much as has been done in the drinking and driving campaign.

Prevention efforts that are not effective with teens are often thought to be thwarted by the adolescent perception that excludes self and close associates to not be stereotypical members of the targeted group for HIV infection. They still view AIDS as something that happens to others (Hubbs–Tait & Garmon, 1995). The fear of AIDS must be internalized so that individuals really believe that it can happen to them. Prevention campaigns are given under the assumption that if humans are given enough information they will change their behavior. This theory of rational behavior does not always work. Humans do not always give rational responses. Instead they often follow emotional responses (Vedantam, 1995). The lack of behavior change may be in part due to the fact that HIV/AIDS is an anxiety laden area for teens to deal with (Hall, 1989).

Then Surgeon General, C. Everett Koop, (1986) suggested that, "Education about AIDS should be started in early elementary school and at home so that children can grow up knowing the behavior to avoid to protect themselves from exposure to the AIDS virus" (p. 5). He also saw this as introducing an opportunity for parents to talk about their moral standards with their children (Koop, 1986).

POLICY

The National PTA (1993) is one of the organizations that has issued a position statement on HIV/AIDS education and policy. It advocates cooperation between health and education organizations,

both state and local boards of education providing sufficient resources for education; a developmentally appropriate HIV/AIDS curriculum; parent involvement in curricula; teaching responsible decision making; avoidance of illicit drugs; and sexual abstinence and adopted policies concerning HIV/AID

Court systems appear to be supporting sexuality education in the schools. The New Jersey Supreme Court endorsed its state's comprehensive sex education mandate as not being contrary to Christianity's teachings. A New York state appellate court ruled that parents cannot keep their children out of AIDS education (Yarber, 1992).

The goal of many state and local school districts' sexuality education programs is to prevent sexually transmitted diseases and pregnancy. Yarber (1992) sees the real purpose of sex education as better being defined as, "the development of a healthy sexuality" (p. 331).

The Sex Information and Education Council of the United States [SIECUS] has published a model for comprehensive sexuality education for kindergarten through 12th grades that was designed by the Nation Guidelines Task Force. This group included representatives of the National School Boards Association, Centers fro Disease Control and Prevention, American Medical Association, National Education Association, Planned Parenthood Federation, Indiana University, New York University, and nationally recognized school sexuality educators (Yarber, 1992).

In the area of sexuality education, public health needs and a moral agenda appear to be battling against one another (Yarber, 1992). Christianity's Far Right is the major group that is guarding the gates of sexuality education. These groups have opposed comprehensive sexuality education since the 1960's (People for the American Way, 1994). The goal of these groups is to restrict what teens can be taught about sexuality to information that embraces their religious beliefs (Yarber, 1992). An abstinence only curricula is what the Christian Right wants communities to adopt (People for the American Way, 1994).

Sexuality educational instruction and policy are often seen as encouraging questionable behavior (Cherney, 1995). This right wing group thinks that educating teens about sexuality is an invitation to adolescent sexual promiscuity.

Leadership is needed from those in positions of authority to establish policies affecting HIV/AIDS (Fraser & Mitchell, 1988). It is better to be proactive by making policy to cover circumstances created by HIV/AIDS before it becomes an emotionally laden issue linked to individuals (Landry, 1989).

The National Association of State Boards of Education (1995) states that, "every state and school district needs policies that address various issues related to HIV infection and AIDS" (p. iii). They also say that these policies should be made by involving medical and legal experts and as well as those served by the policy. These plans, which

should help prevent and contain controversy, will allow for diversity of viewpoints.

The state health department directors are looked to as the foremost authorities in directing AIDS policy in their states. Some of the jurisdictions sharing in health policy decision making are government, schools, mass media, research institutions, and the gay community. In a study surveying state AIDS directors and state directors of public health education, forty-three percent stated that problems stemming from HIV/AIDS are more prevalent than they might have been. These officials blamed individual behavior as the leading cause for the escalating HIV/AIDS infection. Inadequate sex education in public schools was listed as the fifth most perceived reason (Price et al. 1995).

The Domestic Policy Council and President Reagan in 1987 urged aggressive federal efforts for AIDS education. This group suggested that AIDS prevention education be determined by parental values within school districts, and it also strongly advocated education that encouraged responsible sexual behavior (Byrom & Katz, 1991).

States have made good progress in formulating policy supporting HIV/AIDS prevention education in schools. All states require or recommend HIV/AIDS education through either law or policy. Two-thirds of the states, thirty-eight states, require this information to be taught in their schools. Four out of five states have curricula or guidelines to help local school districts disseminate this preventive information. Most

states, thirty-eight in all, provide teacher preparation, and the remaining states give in-service training. All states have advisory councils to help design and implement programs. HIV/AIDS instruction is a part of the health education curriculum in most schools.

A parental option to excuse children from HIV/AIDS instruction is provided for in all states (Britton, DeMauro, & Gambrell, 1994). These "opt-out" provisions defuse confrontations concerning HIV/AIDS education, because parents feel that they have an alternative that will allow them freedom to follow their beliefs. The Religious Freedom Restoration Act of 1994 requires schools to make reasonable accommodation in public school programs to satisfy religious objections. Usually a written request from parents excusing their child from class when AIDS curriculum is taught is all that is required (NASBE, 1995). Some states require the parents to attend classes or instruct their children in AIDS prevention education themselves (Fraser & Mitchell, 1988). Parents do not often decide to opt their children out of these programs. A study in Oklahoma in 1989, found that about 1 percent of students were removed from HIV/AIDS prevention education due to parental objection (Hall, 1989).

With all the progress that has been made to inform young people about this disease, there are still curricular and guideline areas that need strengthening. Many states emphasize abstinence and give no information about safer sex or information on condom use. Human sexuality is not always portrayed in a positive light. There is often a lack of instruction in the areas of sexual responsibility and decision making.

The issue of sexual orientation is seldom addressed, and there is inadequate discussion leading to compassion for those who have contracted HIV/AIDS (Britton et al.1994).

A Sex Information and Education Council of the United States (SIECUS) study found that most sexuality education curricula are often out-dated especially in the area of HIV/AIDS education (Yarber, 1992). Information about HIV/AIDS is changing quickly at this time, as more is revealed about it. Curricula and materials must be updated in order for current information to be taught.

Materials are not always developmentally age appropriate. State designed programs are often weakened by inadequate teacher education; failure of states to monitor local district programs; inadequate implementation by local districts; and failure to revise curricula and materials (Britton et al. 1994).

HIV/AIDS education is limited by how both school districts and individual teachers interpret and implement written policies (Holtzman, Greene, Ingraham, Daily, Dumchuk, & Parra, 1992). While state programs may look superior, there effectiveness are actually dependent on local officials and teachers implementation of those programs.

HIV/AIDS education is increasing nation wide. A 1987 survey of educational agencies, found 17 states that required HIV/AIDS education. Three years late, that number had increased to 31 states and the District of Columbia (Holzman, et al., 1992). Unfortunately, the grade levels receiving the most HIV/AIDS prevention education are the middle school

grades. Time with students on this subject matter tapers off in the later high school years (Hall, 1989).

Mandated education is done to ensure transmitting knowledge in areas such as HIV/AIDS prevention rather than relying on more haphazard approaches. Students in non-mandated states are likely to receive HIV/AIDS instruction since it is included in many of the newer health and science textbooks, and because many teachers view it as necessary information.

State policymakers can set state policies in order to get local policies and programs started . They can provide funds that help local school districts get started and serve as incentives. State policy makers must decide whether to require AIDS education or to recommend it (Fraser & Mitchell, 1988).

States with a more traditional histories of state control are more likely to mandate HIV/AIDS instruction by state law. States that traditionally give more local control will encourage HIV/AIDS education (NASBE, 1995).

In a National Abortion and Reproductive Rights Action League [NARAL] (1995) survey of governors' views on sexuality education, there was a strong correlation between views expressed and governors' personal views on abortion. Governors who want to ban abortion endorsed only abstinence education while those who believe that abortion should remain legal were more supportive of comprehensive sex education (NARAL, 1995).

Major political parties are also divided around the issue of sexuality education. Republicans usually oppose comprehensive sexuality education while Democrats are more likely to support it (NARAL, 1995).

Sexuality education has also been targeted by the radical religious right. They want restrictive sex education laws (NARAL, 1995).

The percentage of students receiving AIDS education in schools is increasing as shown by a three year study, during the years of 1989, 1990, 1991, by the Center for Disease Control and Prevention [CDC] (1992). This study also found that students receiving HIV/AIDS education at school are more likely to discuss this topic with family members.

As of 1995, 13 states require no sexuality or STD/AIDS education. These are Alaska, Colorado, Hawaii, Kentucky, Louisiana, Maine, Massachusetts, Mississippi, Montana, Nebraska, North Dakota, South Dakota, and Wyoming. Thirty-seven state require some kind of STD/AIDS education. (NARAL, 1995)

Thirty-three states mandate with 17 recommending (Weinstein et al.1991). These mandates vary in how they are worded, with some states requiring that HIV/AIDS prevention be taught as part of their health or sex education curriculum while others are giving instruction independent of other classes. Other states such as Wisconsin, West Virginia, Massachusetts, and Maine are very active in providing HIV/AIDS education, although it is not mandated by the state.

A 1990 survey of school district policies and compliance with mandates in regard to HIV/AIDS education, found that 66.9 percent of districts did require HIV education (Holtzman et al. 1992). This survey conducted by the National School Boards Association (NSBA), the American Association of School Administrators (AASA), and Centers for Disease Control (CDC), found that the grades best served were the middle school grades of five through eight with students in earlier grades and later grades receiving less HIV/AIDS education. Sixty percent of all school districts responding to this survey had written policy that dealt with the issue of HIV/AIDS. One-quarter of the districts in this study reported that they had not provided HIV education for school personnel in the past year.

The National Abortion and Reproductive Rights Action League [NARAL] (1995) observes that, "by and large legal mandates have not led to comprehensive and well-balanced programs at the local school district level" (p.v.). "State requirements do not always indicate district requirements" (Holzman et al. 1991, p.421). The National Abortion and Reproductive Rights Action League (1995) considers state mandated HIV/AIDS education undesirable due to vague or biased requirements; programs being planned but not being implemented; and lack of adequate teacher training. NARAL is also critical of mandated HIV/AIDS school prevention programs because they are viewed as promoting biased or fear-based curricula and resulting in restrictive sexuality education (NARAL,1995). Mandates may not stop the use of outdated

HIV/AIDS curricula and too much emphasis being placed on abstinence (Weinstein et al. 1991).

Limited teacher preparation is another weak area. Teachers who teach AIDS awareness programs are usually given written information and guidelines as the most frequent method of preparing them for this task (Robenstine, 1994). Often as little as 3 hours of training is considered adequate for teachers to give HIV/AIDS instruction, and no inservice training is given in 40 percent of districts requiring HIV education (Robenstine, 1994).

Several studies show that the middle school grades are given the most HIV/AIDS prevention attention because more time is spent in AIDS education are the middle school years. The median number of hours of instruction given to students in required school districts is from two to four (Robenstine, 1994). Less AIDS prevention is taught during the elementary years and late high school years. Junior and senior years of high school are when students are most likely to be sexually active, but during these years they are receiving less instruction to help them make responsible decisions regarding their sexuality (Robenstine, 1994).

In 1990, Missouri teens, ages 15 through 19, had an 8 percent pregnancy rate. This gave Missouri the 20th highest teen birth rate in the United States (NARAL, 1995).

For Missourians ages 25 to 44, AIDS is the leading cause of death. 5,000 Missouri citizens have contracted AIDS with about half that number having already died from it (Pike, 1995).

Governor Mel Carnahan, a Democrat, advocates, comprehensive sexuality education including education on contraception, disease prevention, and the promotion of abstinence programs (NARAL, 1995). Goals have been established by a special division of the Missouri Department of Elementary and Secondary Education [DESE]. This educational program was established in 1988 and is jointly funded by DESE and the CDC. These funds will be used to assist schools and school districts in Missouri to provide age-appropriate HIV/AIDS prevention education.

This special department of DESE has come up with six goals for the five years of 1992-1997. One of these goals is, "to ensure that all students in Missouri receive effective HIV/AIDS and STD Prevention Education instruction within Comprehensive School Health Education programming" (Bartman, 1992). The AIDS Prevention Education Program also lends out materials, trains school personnel, gives grants, and provides assistance for local school workshops and inservice programs. Funds and presenters are provided to Missouri schools in collaboration with other health and educational agencies (Bartman, 1992).

Missouri does not mandate AIDS education by state law. It does evaluate its school districts by checking to see if they comply with guidelines established in the Missouri School Improvement Standards. These criteria have been established to ensure that Missouri schools adhere to a set of basic educational norms. Within the improvement

standards, AIDS education is listed under Comprehensive Health for Grades 1-6 and Grades 5-9 in physical education and health. Grades 9-12 do not have AIDS education listed (Department of Elementary and Secondary Education [DESE], 1993).

Iowa is a neighbor to the north of Missouri. In 1990, Iowa had the eighth lowest birth rate for teenage girls ages 15 through 19. Republican governor, Terry Branstad, wants sexual education to emphasize abstinence, and he is opposed to the distribution of condoms in schools (NARAL, 1995).

Iowa is a state which mandates AIDS prevention education instruction by state law (Fraser & Mitchell, 1988). It is required to be included as a topic that will be taught in the health curriculum in grades one through twelve (Iowa Department of Education, 1994). The state of Iowa is rated as one of the top four states for sex education curricula and guidelines by the Sex Information and Education Council of the United States. (1993).

Summary and Conclusions

Acquired immunodeficiency syndrome is the health problem of present times. It threatens the lives of all who choose to be involved in risky behavior. Due to the wealth of knowledge that has been acquired about this disease, those who have contracted the human immunodeficiency virus are now living longer and healthier lives than those who contracted it in the past. Even with the improved longevity and

health for those with HIV, the prognosis for patients with AIDS is still death as a result of opportunistic diseases.

At this time, the only way to fight HIV/AIDS is by choosing safe behavior. People must be informed about HIV/AIDS in order to keep themselves safe. Information concerning HIV/AIDS has been disseminated in various ways. Then Surgeon General, C. Everett Koop, mailed booklets to all American homes in 1986 to insure that the public knew the facts of this killer disease. Even with accurate information, people have been slow to change behavior, and HIV infection has soared. Behavior is slow to change, but statistics are starting to show a decrease in infection.

Adolescence is a volatile time when teens are finding their own identities. Teens are tuned into their peers, and they are distrustful of adults. Teens today are developing physically earlier. Interest in the opposite sex seriously begins in adolescence.

American society has traditionally thought that teens should wait until they are more mature to engage in sexual activity. At the same time, sex is extolled by American society as something of great importance. The media gives the message that sex is something that people must have and an activity that is the center of adult life. Teens are confused by the double messages.

Sexual activity among teens is escalating while sexual responsibility is lagging behind. Adolescents are engaging in more risky behavior at a time when it puts them in greater danger than in the past.

Society is urgently trying to educate youth in order to change their sexual behavior. Society's double bind is that as money is poured into educating youth and yet there is little control over what teens chose to do.

Sexuality education has been focused on for a generation now. The argument about where to educate school age children about sex is anxiety laden. Parents have concerns about whether their moral positions will be honored.

HIV/AIDS has strengthened the stance that public schools must be used to help keep youth safe by giving sexuality education. Parents, as well as their children, think that it is necessary that HIV/AIDS prevention be taught in schools.

Schools have responded by setting up HIV/AIDS prevention curricula for their students. Students are becoming more knowledgeable about HIV/AIDS. Although they have gained knowledge, studies show that they have not changed their behavior. Educators are searching for new ways to teach this necessary information that will gain access to young people's ability to choose healthier, safer lifestyles.

Policy to deal with HIV/AIDS got off to a slow start. It took time for policy makers to understand this health issue. The AIDS virus quickly gained access into society while the medical community and those in charge of public policy were still trying to find out what they were dealing with.

By the late 80's, strategists were still getting policy in place. States started to handle the many intricacies of this disease. State educational

administrators started setting up the educational framework to have a prevention education system in place to handle HIV/AIDS.

Today all states have policies about teaching youngsters about HIV/AIDS. They have taken different stances as to how they will get the educational agencies to be responsible for teaching students AIDS prevention. Thirty-eight states have state laws that require schools within their region to teach this subject matter. Twelve states recommend that their school districts educate their students.

STATEMENT OF PURPOSE

Are state mandates effective in dealing with AIDS? Do schools in states that mandate AIDS education give their students more information than nearby schools that are only have a recommendation to teach their students about HIV/AIDS? The purpose of this study is to acquire more information concerning the effectiveness of state mandated HIV/AIDS education.

RESEARCH HYPOTHESIS

The hypothesis of this study is that there is no difference in HIV/AIDS knowledge between high school students in states with mandated HIV/AIDS education and states without an HIV/AIDS education mandate. The alternative hypothesis is that there is a difference in HIV/AIDS knowledge between high school students in states with mandated HIV/AIDS education and states without an HIV/AIDS education mandate.

Chapter 2

METHODOLOGY

Subjects

Subjects for this study were eleventh and twelfth grade high school students who were enrolled in school districts chosen because they were homogeneous in size, rural site, and background. The students included in these samples attend high schools that have enrollments of less than 125 students and have no minority students. The school districts are in neighboring counties but different states. One school district is located in a state that mandates AIDS prevention education, while the other school district is located in a state that recommends AIDS prevention education.

All eleventh (N = 37) and twelfth grade students (N = 47) at each high school were eligible to be included in the testing sessions. Students who responded to a prior announcement to attend a class meeting went through the testing procedure.

Students must have attended their present school for at least two years prior to 1995-96 for their scores to be included in the study. Students who had not spent at least 2 years in their present school district were not considered representative of that district. There were 8 students whose test results were not included in the study for this reason.

Students who did not report to the testing sites were not included in this study. Absentees on the day of testing also were not a part of this investigation.

If students asked if they had to take the test, they were told that they did not have to take the test. Additionally, they were told that it would be helpful to their school if they did take the test. Although this question was asked, no students left the testing sites.

Of the total students (N =58) participating in this study, 43 percent were male while 57 percent were female. The sample from the non-mandated school (N = 29) and the sample from the mandated school (N = 29) were equal in number. This was not an anticipated result, since the mandated school is slightly larger.

One hundred percent of participating students were Caucasian. Fifty two percent were enrolled in grade eleven and 48 percent from grade twelve.

Design

A one-factor between-subjects design was used for this study. Two samples of high school students were given a test of HIV/AIDS knowledge. The two mean scores were compared using a two-tailed t-test.

HIV/AIDS education, as mandated or not mandated by the state, was a discrete variable which functioned as the independent variable in this study. This variable is on the nominal scale of measurement. The data from individual subjects were compiled into categories, non-mandated and mandated for AIDS education.

The dependent variable was the mean of each school's test scores of HIV/AIDS prevention behavior knowledge. This continuous

variable was the result of quantitative data. The test score means are on the interval scale of measurement.

A t-test for independent means was computed between non-mandated and mandated students' mean knowledge scores. A two-tailed test was employed. The significance level was set at $p = 0.05$.

Procedure

A test of HIV prevention knowledge designed for teenagers was given to each sample of high school students who were being educated in these mandated and non-mandated schools. This testing was done to see if a difference in AIDS prevention knowledge existed between students receiving mandated HIV/AIDS prevention educational programs and those without mandated HIV/AIDS education

The HIV Prevention Behaviors Knowledge Test for Teenagers is multiple choice test containing thirty questions about HIV/AIDS prevention behavior knowledge. This was used as the testing instrument for this study. (See Appendix A) This test was designed by William Yarber and Mohammed Torabi from Indiana University and was published in 1991 by SEICUS Reports. The major emphasis of this test instrument is HIV prevention behaviors, and it was designed for a junior high school reading level.

The preliminary test originally contained fifty test items. After collecting data in the areas of reliability, validity, difficulty index, and a factor analysis only thirty items were included in the final test product. This test was originally given to a sample of 246 students ages 13 to 20

years of age. The mean test score for the norming sample was 17 correct out of a possible 30 with a standard deviation of 6.6. The reliability coefficient was .85 (alpha method) and .86 (Kuder-Richardson). Content validity and internal consistency of the test were checked through the table of specifications and an analysis of data (Yarber & Torabi, 1990/1991).

High school principals were contacted and gave their consent to test all eleventh and twelfth grade students in each school in order to use their test scores as samples in this study. Procedures were discussed and logistics were worked out. It was decided that parental approval would be obtained tacitly through letters to be sent to parents informing them about the testing procedure.

A week prior to testing, a letter was sent to parents of eleventh and twelfth grade students within the selected high schools. (See Appendix B) The letters were sent on school stationery by each school and were sent from the high school principal. If parents called to object to this testing, their son or daughter would have been excluded from the test. No parents called to object to their children being included in the testing procedure.

The testing took place in the students' home high schools. High school classrooms and a high school library were used to house student testing sessions. Students had been instructed earlier that they should report to a particular place within their school building.

The author of this study served as administrator and monitor of this test of HIV/AIDS knowledge. Each class was assembled at the beginning of a class period to take part in this study. A prescribed introduction was given to each group before taking this test . (See Appendix C)

Testing began with the test administrator asking for students to get quiet so testing could begin. The administrator stood at the front of the room to read introductory test instructions while students listened attentively to the verbal instructions. They were asked if they needed pencils, and test booklets were dispensed to students. Test booklets had the name of the school at the top and were numbered. Students were asked not to open their test booklets until instructed to do so.

The cover page that asked for demographic information was filled out including sex, grade, and both junior high and senior high grades attended at the present school. (See Appendix D) Concluding instructions about the test and testing procedure were given including the definition of the term "sexual fidelity." Students were asked if they had any questions. The few questions that were asked were routine and were answered to the students' satisfaction. The students were then asked to begin taking the test.

As testing began, the monitor moved to the side of the room to be unobtrusive, as well as, to be available to collect test papers as students left the room. Upon completion of the test instrument, students returned the test booklets to the test monitor and went on to their regular classes. In each case,

another teacher was present to handle any non-test related problems that arose. All four testing sessions were routine with nothing out of the ordinary occurring. All testing was completed within a twenty four hour period.

Each test was corrected and scored with one point given per correct answer. Although students were told to circle the letter of the correct answers, responses that were not completely circled or that were clearly indicated in another way were also accepted. The scores from each school were averaged together to get the mean score for students in that school.

Chapter 3

RESULTS

The results of this study was determined by a comparison of means of HIV/AIDS prevention knowledge scores of students in the two samples. A mean and standard deviation of total student scores were calculated for both of the non-mandated and mandated schools in this study. A comparison was made of these two sample means.

The higher the individual score on the HIV Prevention Knowledge Test for Teenagers, the greater the number of correct responses. The highest possible individual score was 30. The minimum score obtained among all sample subjects was 15 and the maximum was 30 which gave a range of 15 points. The range for the non-mandated sample was 16 points which was larger than the range of 9 points for the mandated sample. A range of 14 points was exactly the same for females and males that participated in the samples.

The mean score for students who have received mandated HIV/AIDS education was 25.79 with a standard deviation of 2.74. The non-mandated students' mean score was 24.41 with a standard deviation of 3.98. The total mean score for all students participating in this study was 25.1.

The girls involved in the study earned slightly higher scores than their male counterparts. Females sample subjects earned a mean score of 25.9 while male subjects had a mean score of 24.2.

The results of the comparison of mean HIV/AIDS knowledge scores between non-mandated and mandated education using a t-test of independent means indicated no significant difference ($p = 0.13$) between the two groups. Analysis of the data using the t-test for independent means revealed no significant difference ($p = .0.13$) between the behavior knowledge scores of teens in the study who attended non-mandated and mandated schools.

The null hypothesis is $H : u = u$ with the alternative hypotheses being $H : u < u$ The sampling distribution is the t distribution with df= N + N -2. The acceptance of significance is based on the alpha level of 0.05 ($a = 0.05$) in this two-tailed test of the null hypothesis.

Chapter 4

DISCUSSION

No significant difference was shown between the AIDS prevention knowledge of high school students who received mandated HIV/AIDS prevention education and those who attended a non-mandated school. This information could indicate a number of conclusions.

A state law, in theory, seems more powerful than a recommendation for a course of study (Fraser & Mitchell, 1988). To be passed as a law, policy goes through a process by those elected to represent the public. A law, if broken, is thought to mean punishment. Recommended education seems to be less powerful.

Regardless of the form of the policy, today's students are getting information about HIV/AIDS (Boswell et al. 1992; Newman, 1991; CDC, 1992). Students increased knowledge may be partly as a result of written materials that now carry information about HIV/AIDS. Current textbooks have information about AIDS in pertinent subject areas. Student publications, such as Scholastic Magazine, Weekly Reader, and others routinely include articles that help young students learn more about many aspects of HIV/AIDS.

Teachers are increasingly using lessons which include more information about HIV/AIDS (Gingiss & Engquist, 1994). Many teachers who include lessons on HIV/AIDS do so because of its benefit to students rather than their state's policy on this topic (Holtzman, et al., 1992). Many teachers are unaware of their state's policy about AIDS prevention.

Knowing exactly what an individual schools' health programs cover would be indicative of the basic information students at that school are receiving in the area of HIV/AIDS. Health seems to be the key area for teaching elementary and secondary students about AIDS prevention

The policy created to insure HIV/AIDS prevention education in schools appear to be less important than how the strategy is supported. School districts and their teachers need help in implementing a new subject area, such as HIV/AIDS (Gingiss & Engquist, 1994; NASBE, 1995).

Resources must be allocated to insure inclusion of HIV/AIDS education (NPTA, 1993). Materials are needed to help teach AIDS prevention effectively. A curriculum that reaches most grade levels is needed. This prepared curriculum must be found, purchased, and put into place. Videos, posters, charts, models, and resource books are also needed resources for successfully teaching prevention areas.

In order to teach an emotionally charged subject like HIV/AIDS prevention, it is important that teachers themselves have information and time to process that new knowledge (Fraser & Mitchell, 1988; Landry, 1989). They need enough time and information to feel comfortable working with students on the subject matter. They also need to see others model teaching AIDS prevention.

In comparing the results of this test with those of the students in its norming sample, it supports the studies that have noted that AIDS prevention knowledge among high school students is increasing

(Boswell et al., 1992). The mean of correct answers in the original study was 17. The mean correct for all students in this study was greater at 25.1. Twelve percent of the high school students in this study got scores of 29 and 30, with three students received perfect scores and four examinees missed one question.

There is much being written in professional journals about the effectiveness of specific AIDS prevention programs. This information should be helpful for the future of effective AIDS prevention education. The data received from these studies should give good information about the most productive methods of reaching different populations. Specific educational journals are publishing lessons about HIV/AIDS that have been developed by teachers. These lesson plans and specific ideas can be very helpful to educators.

The most glaring limitation to this study was sample size. The eleventh and twelfth grades students were selected for this study because they had already taken the classes that would have covered HIV/AIDS in their high schools. An increased sample size could have been obtained by either including more grades at the same schools or adding eleventh and twelfth grade students from a other schools.

The students in this study were from rural, very small schools. A similar study using student samples from both urban and suburban schools could be valuable, although a study conducted by Boswell et al. (1992) would indicate that a study in urban areas in unnecessary.

Boswell's study which tested HIV-related knowledge, attitudes, and behaviors in rural and urban adolescents found no difference when comparing for HIV knowledge.

A survey of teachers could give good information about providing HIV/AIDS prevention education, since they are the actual suppliers of this information. Teachers could be asked what they would perceive to be the best incentive for teaching this material. I suspect that purchased curriculum materials, videos, and teaching aids would be considered helpful by educators because of the limited time these busy professionals have for working in new areas.

Another research project that would be helpful in this area would be to measure instruction that is given in schools about HIV/AIDS. Then provide administrators or teachers with training, lesson plans, or both and measure the difference in instruction given or student knowledge.

This study found that there is no difference in AIDS prevention knowledge between high school students in non-mandated and mandated states. There is further information to be gathered that would contribute to the knowledge in this area. This information can be used to help policy makers as they attempt to keep the public informed and safe.

References

Acosta, V. M. (1992). Parents' perceptions of the appropriateness of AIDS education topics for their eighth grade school children. Journal of Health Education, 23(1), 45-50.

Ambron, S. R. (1985). Child development (pp. 393 - 456). San Francisco: Rinehart Press.

The Council for Exceptional Children. AIDS education: Resources for special educators. Reston, Virginia: Author.

Alyson, S. (Ed.). (1990). You can do something about AIDS. Boston, Massachusetts: The Stop AIDS Project.

American Foundation for AIDS Research. (1993). Highlights from Berlin: The IX international conference on AIDS. New York: Author.

American Red Cross. (1990). HIV infection and AIDS. Atlanta, Georgia: Center for Disease Control.

Association for the Advancement of Health Education. (1991). AIDS/HIV infection education within the school: Position statement. Reston, Virginia: Author.

Bartman, R. E. (1992). HIV/AIDS prevention education program. Jefferson City, Missouri: Missouri Department of Elementary and Secondary Education.

Boswell, J., Fox, E., Hubbard, B., & Coyle, L. (1992). A comparison of HIV-related knowledge, attitudes, and behaviors among adolescents living in rural and urban areas of a southern state. Journal of Health Education, 23(4), 238-243.

Britton, P. O., De Mauro, D. & Gambrell, A. E. (1994). Future directions: HIV/AIDS education in the nation's schools. New York: Sex Information and Education Counsel of the U.S.

Brown, L. K., Reynolds, L. A. & Brenman, A. J. (1994). Out of focus: Children's concepts of AIDS. Journal of Health Education, 25(4), 204-209.

Burger, J. E. (ed.). (1993). Responding to HIV and AIDS: A special publication for NEA members. Washington, DC: National Education Association Health Information Network.

Byrom, E. & Katz, G. (1991). HIV prevention and AIDS education: Resources for special educators. Reston, Virginia: The Council for Exceptional Children.

Cahill, K. M. ed. (1983). The AIDS epidemic. New York: St. Martin's Press.

Centers for Disease Control and Prevention. (1992). HIV instruction and selected HIV-risk behaviors among high school students--United States, 1988-1991. Journal of School Health, 62(19), 481-482.

Centers for Disease Control and Prevention. (1994). Facts about adolescents and HIV/AIDS. Atlanta, Georgia: Author.

Cherney, S. (1995). AIDS: A glance back, a look forward. World Health, 2, 18-19.

Department of Elementary and Secondary Schools. (1992). The Missouri school improvement program: Standards and indicators manual, pp. 1-6. Jefferson City, Missouri: Author.

Dixon, P. (1989). The whole truth about AIDS. Nashville, Tennessee: Thomas Nelson Publishers.

Dixon, (1994). HIV education for adolescents and preadolescents. Public Health Reports, 109(2).

Dorman, S. M., Small, P. A., & Lee, D. D. (1989). A cooperative learning technique for AIDS education. Journal of School Health, 59(7), 314-315.

Fraser, K. & Mitchell, P. (1988). Effective AIDS education: A policymaker's guide. Alexandria, Virginia: National Association of State Boards of Education.

Gambrell, A. E. & Haffner, D. (1993). Unfinished business: A SIECUS assessment of state sexuality education programs. New York: Sex Information and Education Council of the U.S.

Gingiss, P. L. & Engquist, K. B. (1994). HIV education practices and training needs of middle school and high school teachers. Journal of School Health, 64(7), 290-295.

Hall, J. L. (1989, March). A local school district implements a state mandated instructional program on AIDS prevention. Paper presented at the meeting of the American Educational Research Association, San Francisco, CA.

High HIV prevalence found among gay, bisexual youths. (1996, February, 11). Des Moines Register, p. 8A.

Holtgrave, D. R., Qualls, N. L., Curran, J. W., Valdiserri, R. O., Guinan, M. E., & Parra, W. C. (1995). An overview of the effectiveness and efficiency of HIV prevention programs. Public Health Reports, 110(2), 134-146.

Holtzman, D, Greene, B.Z., Ingraham, G. C., Daily, L. A., Dumchuk, D. G., & Kolbe, L. J. (1992). HIV education and health education in the United States: A national survey of local school district policies and practices. Journal of School Health, 62(9), 421-427.

Hubbs-Tait, L. & Garmon, L. C. (1995). The relationship of moral reasoning and AIDS knowledge to risky sexual behavior. Adolescence , 30(119), 549-564.

Iowa Department of Education. (1994). School rules of Iowa. Des Moines, Iowa: Author.

Johnson, L. (1991). Beyond knowledge and practice: A challenge in health education. Journal of Health Education, 22(1), 8.

Jones, H., Ellis, N., Tappe, M., & Lindsay, G. (1991). HIV related beliefs, knowledge and behaviors of ninth and eleventh grade public school students. Journal of Health Education, 22(1), 12-18.

Jones, R. C. (1993). The plague generation. The Science Teacher, 60(8), 34-41.

Kolbe, L. (1992). What about AIDS?. NEA Today, 10(9), 19.

Koop, C. E. (1986). Surgeon generals report on acquired immune deficiency syndrome. Washington, D.C.: U.S. Department of Health and Human Services.

Landry, G. L. (1989). AIDS in sports. Champaign, Illinois: Leisure Press.

Lindes, D. S., Sagel, S. D., & Serlin, D. M. (1995). Students teaching AIDS to students (STATS). Public Health Reports, 110(2), 209-210.

Lynch, A. (1991). Message from the president of the PTA. Journal of Health Education, 22(1), 9-10.

Mann, J. M. (1991). Global AIDS: Status of the pandemic. Journal of Health Education, 22(1), 6-7.

National Abortion and Reproductive Rights Action League. (1995). Sexuality education in America: A state-by-state review. Washington, DC: Author.

National Association of State Boards of Education. (1995). Someone at school has AIDS: A complete guide to education policies concerning HIV infection. Alexandria, Virginia: Author.

National Parent Teacher Association. (1989). How to talk to your teens and children about AIDS. Chicago, Illinois: Author.

National Parent Teacher Association. (1993). PTA resolution and position statement on HIV/AIDS. Chicago, Illinois: Author.

Novello, A. C. (1993). Surgeon general's report to the American public on HIV infection and AIDS. Atlanta, Georgia: Centers for Disease Control and Prevention.

Odets, W. (1995). The fatal mistakes of AIDS education. Harper's Magazine, 290(1740), 13-17.

Page, C. (1995). Adolescents, HIV/AIDS and other sexually transmitted diseases (stds). Washington, DC: Advocates for Youth.

Papalia, D. E. & Olds, S. W. (1987). A child's world: Infancy through adolescence (pp. 571-626). St. Louis, Missouri: McGraw-Hill Book Company.

People for the American Way. (1994). Teaching fear: The religious right's campaign against sexuality education. Washington DC: Author.

Pike, L. B. (1995). Talking with children about HIV/AIDS. Columbia, Missouri: University Extension of University of Missouri Columbia.

Popham, W. J. (1993). A new AIDS agenda. The American School Board Journal, 39-42.

Price, J. H., Everett, S. A., & Poureslami, M. (1995). Perceptions of HIV/AIDS: State directors of public health education and directors of AIDS. Health Values 19(5), 39-47.

Quackenbush, M. & Sargent, P. (1990). Teaching AIDS: A resource guide on acquired immune deficiency syndrome. Santa Cruz, California: ETR Associates.

Quinn, A. C. (1992). AIDS and HIV testing: Implications for health education. Journal of Health Education, 23(2), 95-99.

Robenstine, C. 1994. HIV/AIDS education for adolescents: School policy and practice. The Clearing House, 67(4), 229-232.

The Today Show. (1996, February 28). AIDS home testing kits. New York: Author.

Vedantam, S. (1995, August 27). Psychologists wonder: Why do we ignore risk? Des Moines Register, pp. A1, A3.

Weinstein, E., Rosen, E., & Atwood, A. (1991). Adolescent's knowledge of AIDS and behavior change: Implications for education. Journal of Health Education, 22(5), 313-319.

Wolfe, G. F. (1995). AIDS education: How can we make it more effective? Journal of Health Education, 26(3), 139-142.

Yarber, W. L. (1992). While we stood by... the limiting of sexual information to our youth. Journal of Health Education, 23(6), 326-334.

Yarber, W. L. & Torabi, M. R. (1990/1991). HIV prevention knowledge test for teenagers. SIECUS Report, 20(1), 46-50.

Appendix A

Demographic Information

(School Name)

Please circle the information that tells about you:

Sex: Male Female Grade: 11th 12th other

Grades that you have been a student at (name of school) :

7 8 9 10 11 12

Appendix B

Letter to Parents of Students to Be Tested

(date)

Dear Parents & Guardians:

The eleventh and twelfth grades students at (name) High School have been selected to be a part of study taking place on HIV/AIDS education. Students in these classes will be given a multiple choice test of their knowledge about HIV/AIDS within the next week. Students and their scores will not be identified individually. The scores for all students at our school will averaged, so that (name) High School will have only aggregate scores reported in the study.

We are contacting you in order to keep you informed.

Sincerely,

(Principal's name)

Appendix C

Introduction

(To be read to students prior to distributing the test instruments)

Hello. Your (junior/senior) class has been selected to participate in a study of high school students' knowledge about HIV, human immunodeficiency virus, and AIDS, acquired immunodeficiency syndrome. Your identity and your individual scores will not be a part of this study. The test scores from your school will be used together.

Does anyone need a pen or pencil before we continue? I will now pass out the test booklets. Please do not open the booklets or write on the booklets until instructed to do so.

(Pass out test booklets).

In a few minutes, you will take a multiple choice test about HIV/AIDS, but first you need to answer the questions on the sheet attached to the front of you test. At this time, please circle whether you are male or female and what grade you are in. Also circle all the junior high and high school grades that you have attended at (name of school). When you have completed this introductory page, please put your pencil or pen down and wait.

This test contains 30 multiple choice questions about HIV and AIDS. You will need to read the questions and circle the letter of the best answer to each question. Before you begin, turn you page to the beginning other test. It will look like this. (Hold up test booklet to the

correct page). Follow along as I read the note at the beginning of the test. (Point to where the note is, and read the note out loud.) Now look at question 4 on that same page. I want to explain the first two words "sexual fidelity." Sexual fidelity means: having sex with only one partner.

When you finish the test, you turn them into me. You may then go onto your class.

Are there any questions?

You may begin.

Only questions about the test instrument will be answered.

Questions about the study will be answered that the study is for a masters thesis.

If asked if they have to take the test, the answer will be that they do not have to take the test , but that it would be helpful since scores are needed for their school.

Appendix D

Demographic Information

Mormon Trail High School - Scores included in study

11th Grade	Males - 7	Females - 8
12th Grade	Males - 6	Females - 8

North Harrison High School - Scores included in study

11th Grade	Males - 7	Females - 8
12th Grade	Males - 5	Females - 9

Mormon Trail High School - Scores not included in study *

11th Grade	Males - 0	Females - 1
12th Grade	Males - 1	Females - 1

North Harrison High School - Scores not included in study *

11 Grade	Males - 0	Females - 1
12 Grade	Males - 3	Females - 0

* Scores were not included because students had not attended present high school for two years prior to the 95-96 school year.