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The relationship of an AIDS education program to college students’ attitudes towards AIDS, self-esteem and health locus-of-control

Phillips, Carla G., Ph.D.

The Ohio State University, 1990

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THE RELATIONSHIP OF AN AIDS EDUCATION PROGRAM
TO COLLEGE STUDENTS' ATTITUDES TOWARDS AIDS, SELF-ESTEEM
AND HEALTH LOCUS OF CONTROL

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By

Carla G. Phillips, B.S.N., M.S.

* * * * *

The Ohio State University
1990

Dissertation Committee:

P. Heit
M. Chen
P. Schwirian
K. Barrick

Approved by

Adviser

Department of Health Education
I Dedicate this Work to:

My Husband Stephen and

Children Stephanie and Matthew
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VITA

August 27, 1943 ............... Born - Glasgow, Kentucky

1964 ........................ Diploma, Mid-State Baptist Hospital School of Nursing, Nashville, Tennessee

1964-1973 ....................... Charge Nurse, Jackson County Hospital, Gainesboro, Tennessee and Emergency Department, Chillicothe Hospital, Chillicothe, Ohio

1973-1978 ....................... Assistant Head Nurse, Emergency Department Medical Center Hospital, Chillicothe, Ohio

1977 ........................... B.S.N., Ohio University, Athens, Ohio

1979 ........................... M.S. in Nursing, The Ohio State University, Columbus, Ohio

1979-Present  .................... Assistant Professor of Nursing, Ohio University, Athens, Ohio

PUBLICATIONS


FIELDS OF STUDY

Major Field: Health Education and Nursing

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CHAPTER 1
INTRODUCTION

Acquired Immune Deficiency Syndrome (AIDS) has reached epidemic proportions in the United States (Gaines, Iglar, Michal, Patton, 1988, The Buffalo News, 1988, MMWR VOL. 37 S-2, 1988). Young (1987) states unequivocally that "AIDS is, without a doubt, one of the most devastating infectious diseases the world has ever known" (p. 14). Ahia (1987) agrees that "AIDS has become a major health threat and ranks as one of the most serious communicable health problems which has confronted the human race" (p. 31).

While intravenous drug users and homosexual/bisexural males remain high risk groups, increasing numbers of people outside these groups have been diagnosed with AIDS (Young, 1987). Haverkos and Edelman (1988) note disturbing statistics and trends. "Between June 1981 and April 11, 1988, 59,287 cases of AIDS in the United States were reported to the CDC" (p. 1924). They further note that 2,392 cases of AIDS have been reported in heterosexuals with 1313 in females (p. 1924). "One thousand two hundred forty three (52%) of all heterosexual AIDS cases reported since 1981 were diagnosed and reported to the CDC between
January 1, 1987 and April 11, 1988" (p. 1924). They note that "Although AIDS is not exploding into the heterosexual population relative to other risk groups the increase in the numbers of heterosexual cases is proportional to increases in other risk groups. These increases are resulting in a doubling of heterosexual cases every 14-16 months" (p. 1927). Belfer, Krener and Miller (1988) note statistics from the CDC that reflect "As of November 30, 1987, 691 cases of AIDS in children younger than 13 were diagnosed. In the age range 13 to 19, 195 cases were diagnosed. More than 2,000 other children and adolescents had symptoms of AIDS but did not meet the CDC diagnostic criteria operative at that time (although they might meet the newly broadened criteria)" (p. 147). Young (1987) notes the changing demographics of AIDS stating "And in New York City, where for the last few years AIDS has been the leading cause of death for men aged 25-44, AIDS is now the leading cause of death in women aged 25-34, the second most frequent cause of death for women aged 35-39, and the third most frequent for women aged 20-24" (p. 14). Statistics from the CDC report 26,180 cases of AIDS identified in the U.S. in 1988 as of the 44th week of 1988 (MMWR Vol. 37/No. 44 p. 681). The State of Ohio alone reported 1040 cases of AIDS as of Nov. 1, 1988 (AIDS, ODH, 1988).
Rationale for the Study

The fact that AIDS is primarily a disease of young and young middle aged adults, and that the incubation period is several years, suggests that the virus is being contracted by many during adolescence (Belfer, et al. 1988, MMWR, Vol. 37/No. S-2). If the incidence of AIDS should follow the incidence of other sexually transmitted diseases in adolescents, then there will be a significant increase of AIDS in that population (DiClemente, Boyer, Mills, 1987). Moeller and Bachmann (1987) suggest that young people between 15 and 24 may become the next group to be at high risk for AIDS because of their IV drug use and heterosexual contacts. Price, Desmond, Hallinan, and Griffin (1988) cite Chilman in stating "....college students are vulnerable to this fatal viral infection for several reasons. First, college students do not believe AIDS can happen to them. Second, they are susceptible to peer pressure regarding sexual activity. Third, they are often willing to experiment with different sexual behaviors and fourth, they tend to have a higher number of sexual partners" (p. 16). Adolescent sexual practices and drug use create the potential for adolescents to become a high risk group for AIDS (Dorman, Rienzo, 1988). AIDS is a fatal disease with no effective treatment. Education about AIDS is the best means for stopping the spread of this infection (MMWR, Vol. 37/No.18. 1988). Turner, McLaughlin and Shrum (1988) state
that "Education represents the single best option for stopping the tide of the devastating epidemic of AIDS" (p. 6). Moeller and Bachmann (1987) agree that at this time "Education is the basic mode of prevention" (p. 21). "Anthony S. Fauci, M.D. of the National Institutes of Health, states that the vaccine of today is education" (Paxton & Susky, 1988, p. 40).

"It has been suggested by public health specialists that colleges and universities are in an ideal position to help reduce the spread of acquired immunodeficiency syndrome (AIDS) via education efforts; perhaps they are even obligated to do so" (Biemiller, 1987 p. 32). Health educators must meet the challenge to educate students about AIDS. Paxton and Susky (1988) state that "the task of health educators is to empower students, families, and friends with the information and insight to confront the epidemic realistically and effectively" (p. 42). Parents may be uncomfortable discussing drug use and issues of sexuality. Moeller and Bachmann (1987) suggest that such topics be dealt with by assisting young people to assume responsibility for their own bodies and in so doing enhancing their self-esteem.

Juhasz and Sonnenshein-Schneider (1980) suggest that several variables are necessary for responsible sexual decision making. They state that self-esteem is important in situational decision making which often include sexual
decisions. They note that, "the aspect of the self which is most important is self-esteem--the value one places on oneself" (p. 746-747). Health intervention programs, to be effective, should include psychosocial dimensions with self-esteem considered integral among these (Peterson, 1982 p. 69). Crouch and Straub (1983) have subdivided self-esteem into two types, basic and functional. They suggest that "functional self-esteem is considered changeable and may substantially exceed basic self-esteem" (p. 76). It could be expected that as a health education intervention an AIDS education program could increase college students' self-esteem.

One aim of health education programs for young people is the development of a sense of responsibility for one's own health and health related behavior (Parcel, Meyer, 1978). Locus of control is a construct that "has shown some promise in predicting and explaining specific health-related behaviors" (Wallston, Wallston, 1976, p. 217). Visher (1986) notes that "recent research suggests that the personality variable, locus of control, may have an important influence on many behaviors of the adolescent" (p. 184). Wallston and Wallston (1978) state that, "scales to measure locus of control may be used to evaluate health education programs. Health educators may want to focus on training internality" (p. 113). Recent studies have found that health education interventions could alter locus of control in young people.
Blasek (1983) found that after participating in a program of self-care instruction students believed that health outcomes were more dependent upon their own actions than other factors (p. 554). Locus of control and self-esteem have been noted as an area for research in adolescents (Bruhn, Parcel, 1982). "Persons who have a sense of control over their lives and who believe they have a reasonable amount of power and influence in the world tend to have a higher self-esteem than those who do not" (Couch & Straub, 1983, p. 72).

Petty and Cacioppo (1981) suggest that attitudes are an "important part of social interaction". They state that attitudes serve as "summaries of our beliefs". They further postulate that, "knowing our attitudes presumably helps others predict the kinds of behavior we are likely to engage in more accurately than almost any thing else we can tell them" (p. 8). In a descriptive study Dorman and Rienzo (1988) asked a group of university students to respond to questions designed to measure students' knowledge and attitudes about AIDS. Students were enrolled in health classes and were asked to rate responses to questions about AIDS on a "worry index". They concluded that students were somewhat worried about AIDS, however they had incomplete knowledge about how the disease is transmitted. Further, their misinformation seemed to create attitudinal bias against victims of AIDS. Gaines, et al. (1988) conducted a
study on the attitudes of a group of college students toward AIDS and people with AIDS. Their findings were consistent with those of Dorman and Rienzo. They found that students had widespread misconceptions and incorrect information regarding AIDS. The negative attitudes were exhibited by stigma toward people with AIDS and a willingness to exclude them from the job market. The researchers concluded that "Unless these attitudes are modified, factual information in educational programs will be of little value in altering the behavior of the public in dealing with the AIDS epidemic and realistically handling, in a humane manner, persons with AIDS" (p. 59).

Self-esteem, health locus of control, and attitudes are related concepts and can be affected by individuals' interaction with the environment. Petosa (1986) states that these are personal factors which should be addressed in programs of health promotion. He notes, "Personal factors are defined as attributes of individuals which influence decisions and behavior that impact on health status. While these attributes are relatively stable, they are amenable to change and are therefore potentially valuable health promotion targets" (p. 26). Self-esteem, locus of control, and attitudes have been identified as factors which affect health behavior. No studies were found which examined the effects of an AIDS education program on these constructs in college students.
Statement of the Problem

Is there a significant relationship between an AIDS education program, self-esteem, health locus of control and attitudes toward AIDS in college students?

Sub-problems

1. To compare group differences on self-esteem between groups of college students who participate in an AIDS education program and those who do not participate in the AIDS education program.

2. To compare group differences on health locus of control between groups of college students who participate in an AIDS education program and those who do not participate in an AIDS education program.

3. To compare group differences on attitudes toward AIDS between groups of college students who participate in an AIDS education program and those who do not participate in an AIDS education program.

4. To determine if there a significant relationship between an AIDS education program, self-esteem, health locus of control, and attitudes toward AIDS.

Research Hypotheses

1. College students who complete an AIDS education program will have higher self-esteem as measured by Coopersmith's Self-Esteem Inventory Adult Form than
those college students who do not complete an AIDS education program.

2. College students who complete an AIDS education program will demonstrate the belief that behavior is more responsible for health (IHLC) than fate, luck, chance, (CHLC) or powerful others (PHLC) as measured by scores on the Multidimensional Health Locus of Control Scale (Wallston & Wallston, 1978) than college students who do not complete the AIDS education program.

3. There will be a difference in attitudes toward AIDS among college students who complete an AIDS education program as measured by an AIDS attitude inventory (Gaines, et al., 1988) and those college students who do not complete an AIDS education program.

4. College students who complete an AIDS education program will have higher self-esteem as measured by Coopersmith's Self-Esteem Inventory Adult Form than prior to the program.

5. College students who complete an AIDS education program will demonstrate a greater belief that behavior (IHLC) is more responsible for his/her health than fate, luck, chance, (CHLC) or powerful others (PHLC) as measured by the Multidimensional Health Locus of Control Scale (Wallston & Wallston, 1978) than prior to the program.

6. College students who complete an AIDS education program will demonstrate a difference in attitudes toward AIDS
as measured by an AIDS attitude inventory (Gaines, et al., 1988) than prior to the program.

7. There will be a significant relationship between and AIDS education program, self-esteem, health locus of control, and attitudes towards AIDS in college students.

Null Hypotheses

1. There will be no significant difference in level of self-esteem as measured by the Self-Esteem Inventory Adult Form in college students who complete an AIDS education program and those who do not.

2. There will be no significant difference in health locus of control as measured by the Multidimensional Health Locus of Control Scale in college students who complete an AIDS education program and those who do not.

3. There will be no significant differences in attitudes toward AIDS as measured by an AIDS attitude inventory (Gaines, et al., 1988) among college students who complete an AIDS education program and those who do not.

4. There will be no significant difference in level of self-esteem as measured by the Self-Esteem Inventory Adult Form in college students prior to and after completion of an AIDS education program.
5. There will be no significant difference in health locus of control as measured by the Multidimensional Health Locus of Control Scale (Wallston & Wallston, 1978) in college students prior to and after completion of an AIDS education program.

6. There will be no significant difference in attitudes toward AIDS as measured by an AIDS attitude inventory among college students prior to and after completion of an AIDS education program.

7. There will be no significant relationship between an AIDS education program, self-esteem, health locus of control, and attitudes towards AIDS in college students.

Definition of Terms

Self-esteem—a "personal judgement of worthiness that is expressed in the attitudes the individual holds toward himself" (Coopersmith, 1967, p. 5).

Health locus of control—internal locus of health control—the degree to which an individual believes that his/her own behavior is responsible for health or illness (IHLC).

Chance health locus of control—the belief that an individual's level of health or illness is a function of luck, chance, fate or uncontrollable factors (CHLC).

Powerful others health locus of control—the belief that the degree of health or illness is determined by important
figures such as physicians, other health professionals, parents or friends (PHLC). (Rock, Meyerowitz, Maisto, and Wallston, 1987, p. 185-86).

**Attitude**—"A relatively enduring organization of beliefs predisposing one toward some preferential response. Attitudes have both cognitive and evaluative components; they are a state of mind or feeling about a certain subject, matter, or concern" (Ross & Mico, 1980, p. 155-156).

**Assumptions Of The Study**
1. AIDS is an important health threat to adolescents and young adults.
2. Humans are social beings who interact with the environment.
3. Health locus of control, self-esteem and attitudes toward AIDS can be altered through an AIDS education program as a health education intervention.

**Limitations Of The Study**
1. The study only included a convenience sample of college students from one regional campus of Ohio University.
CHAPTER II
REVIEW OF THE LITERATURE

This chapter will include the theoretical framework for the study. A review of the literature will be presented on symbolic interactionism, adolescence, AIDS, self-esteem, health locus of control, and AIDS education.

Symbolic interactionism provided the theoretical framework for this study. Littlejohn (1983) notes that symbolic interactionism is not one theory but a "theoretical perspective" under which other theories may be subsumed. He further notes that theories overlap and "cannot be viewed as a series of independent explanations of some phenomenon. Theories interrelate, overlap, and fall into patterns" (p. 45).

Symbolic interactionism has its beginnings in the work of George Herbert Mead. Although his work was published after his death, his contribution to this theoretical perspective was significant. Mind, Self and Society (1934), the first of a compilation of his works to be published is regarded as classic in providing the underpinnings of this theoretical perspective. There have been many others in a variety of disciplines who have contributed to the
theoretical framework. This review will discuss those primary contributors who have developed this perspective for understanding the development of the concept of self as learned through a process of interaction within the larger society/environment.

Jerome Manis and Bernard Meltzer (1978) defined seven integral propositions which reflect basic tenants of symbolic interactionism. Littlejohn (1983) notes that these provide "seven basic theoretical and methodological propositions from symbolic interactionism" (p. 45). The five most pertinent to this study are presented. They are:

1. The meaning component in human conduct: Distinctly human behavior and interaction are carried on through the medium of symbols and their meanings.

2. The social sources of humanness: The individual becomes humanized through interaction with other persons.

3. Society as process: Human society is most usefully conceived as consisting of people in interaction.

4. The voluntaristic component in human conduct: Human beings are active in shaping their own behavior.


William James (Gordon & Gergen, 1968) has proposed that the self is composed of the elements of the "I" and "me". The "I" is viewed as "the impulsive spontaneous, and unorganized energizing part of the self. The 'me' is seen as the incorporate other" (p. 40). The "I" is the "pure
ego" or thinker which is conscious and selective (Gordon & Gergen, 1968, p. 46). The "me" is then seen as providing restraints and direction. James further defines the "me" as having three parts-the material me, the social me and the spiritual me (Gorden & Gergen, p. 41). The "material me" includes persons' possessions beginning with his/her own body, clothes, family, home, etc. The "social me" consists of the recognition one gets from others in the society. The "spiritual me" is the entire collection of consciousness including feelings and perceptions (Gordon & Gergen, 1968). Charles Horton Cooley (Farrell & Swigert, 1975) states that self is a function and result of social interaction. He further states that, "the social self is simply an idea, or system of ideas, drawn from the communicative life, that the mind cherishes as its own" (p. 66). Cooley's famous "looking glass self" construct refers to the idea that there is no real concept of "I" until one interacts with others and forms images of himself based upon how he perceives others see him. The idea has three principal elements: "the imagination of our appearance to the other person; the imagination of his judgement of that appearance, and some sort of self feeling, such as pride or mortification" (Farrell & Swigert, p. 67, 68).

The self emerges as being that which makes each person unique. It is comprised of a set of ideas, values and experiences, arrived at through social interaction, in which
the individual becomes aware of himself as being with a history, present and possible future.

The identification of self begins in infancy. The child begins to have an awareness of self in response to the significant others in the environment. The child's attitudes are shaped by the timing and quality of the care received. If the character of that care is positive and loving the child will begin to develop trust and a belief in the worth of his own identity. The self, then emerges during interaction between an individual and his environment.

The body is the physical housing of the self. It is difficult to separate this physical entity from the inner self and thus it becomes a major factor in self identity. It is a part of the whole. James (Gordon & Gergen, 1968) believes the body to be the "innermost part of the material me in each of us" (p. 41). The inner being and the physical being combine, then, to form the self.

Horrock and Jackson (1972) see the steps of self development to be as follows:

1. The infant learns about his organism and the physical and social environment, and adapts himself to his environment.

2. The child cognitively arrives at ideas and beliefs providing meaning and interpretation of his self from actual and hypothetical interactions.

3. Concepts are covertly implied and overtly manifested through interactional behavior with others. (p. 5)
When the child learns to separate self from the environment another dimension is simultaneously added to the interactional process. Through the use of language the person is able to verbally distinguish self with terms that describe separateness such as, "me", "mine", and "I". The person is able to attach meaning to the appraisals of oneself and responses from others. The person is no longer an empty slate but has begun to form a self-concept.

The individual then is influenced by a personal environment, both the external environment and a physical, internal environment. The self-concept is developed and refined as the person interprets self through repeated responses from others in interactions. Although this begins in the infant as instinctual or reflexive responses, as the person matures and accrues more experiences the element of cognition emerges. Cognition is crucial in individual interpretations of self as one expands to interpret others. Thus, while the individual is developing self perceptions, attitudes and perceptions of others are also simultaneously developing. Gordon (Gordon & Gergen, 1968) offers this proposal of self. "The self is not a thing, it is a complex process of continuing interpretive activity-simultaneously the person's located subjective stream of consciousness (both reflexive and non-reflexive, including perceiving, thinking, planning, evaluating, choosing, etc.) and the resultant accruing structure of self conceptions (the
special system of self referential meanings available to this active consciousness)" (p. 116).

The process whereby the individual, from infancy, defines self through interaction with others is ongoing throughout the life span. Through this learned process a concept, a structure of self is formed.

Adolescence - Developmental Stages, Tasks, and Sexual Behavior

Adolescence is considered to encompass a period which includes prepubescence through the time that secondary sex characteristics appear and the person is relatively mature and ready to assume his/her place in society as a responsible citizen (Marlow, 1977). The time that it takes a person to reach this point may vary, therefore, no definite time frame can be assigned to adolescence. Morris (1982) notes that "the beginning and ending of the adolescent years are variable among individuals" (p. 94). Marlow (1977) and Morris (1982) believe adolescence generally includes ages 10 through 19. Hamburg (1985) notes that the length of adolescence has lengthened in society and encompasses ages 10 through 20. Hamburg further states that "Today there are three distinctive phases of adolescence--early, mid, and late" (p. 160). Havighurst (1972) proposed a set of developmental tasks for adolescence wherein the ages range from 11 to 22 years and over. The span of
adolescence has lengthened in the past few decades for several reasons. The onset of menarche in girls is becoming increasingly earlier (Howe, 1980; Moore et al., 1987; Semmens & Krantz, 1970). Large numbers of adolescents attend post secondary educational programs which prolongs adolescence (Peterson, 1982). Stevenson (1977) calls the period from age 18 to 30 young adulthood. It is clear that ages denoting adolescence as a developmental stage are arbitrary and may include ages 10 through 22 and over. Adolescence will be discussed here to include early through late adolescence. Adolescence is a time during the life span in which young people are no longer children but not yet adults (Moore, Van Arsdale, Glittenberg, Aldrich, 1987). It can be a confusing and frustrating period during which the adolescent attempts to define who and what he is and establish himself as an individual, apart from the parents. Rogers (1977) notes that adolescence, or the teen years, is "variously treated as a specific span of years, a state in development, a subculture, a state of mind, or a combination of these concepts" (p. 3). During this time significant biological maturational changes occur characterized by physical growth and changes in primary and secondary sex characteristics. Psychological changes also occur which include changes in feelings of identity, self esteem, and attitudes toward self and others. Siegel (1982) in studies on adolescent turmoil notes that, "it seems a reasonable
conclusion that the adolescent process is an interruption of peaceful growth and is normatively attended by anxiety, worry, and concerns regarding self-esteem, physical appearance, and body image" (p. 542).

Great variation exists in the rate of growth and physical changes during the adolescent period. Some adolescents may not have begun to experience the physical changes associated with puberty while others may have completed the process physically (Moore, et al., 1987). This suggests that there are wide variations in size and physical maturity among adolescents which may be accompanied by self consciousness and awkwardness concerning their body and a preoccupation with appearance (Biehler & Snowman, 1986).

Erickson (1968) identified the primary developmental task of adolescence as developing a firm sense of identity. He stated that, "To a considerable extent adolescent love is an attempt to arrive at a definition of one's identity by projecting one's diffused self-image on another and by seeing it thus reflected and clarified" (p. 132). He suggested that failure to establish a stable sense of one's identity could result in role confusion. During this period the adolescent attempts to define who he/she is or is becoming and how others see him/her. This is characterized by the development of a sense of stability in several dimensions of the lives of adolescents (Biehler & Snowman,
The dimensions of most concern to adolescents usually center around decisions of a sexual identity and career (Biehler & Snowman, 1986; Erickson, 1950; Marlow, 1977). Moore et al. (1987) state that "to develop a sense of identity, the adolescent looks for congruity between sense of self and appearance to others" (p. 40). While adolescents may appear self-assured and confident about their appearance, on the outside they may have inward doubts as to whether something is wrong (Moore et al. 1987; Stanwyck, 1983).

After a sense of identity has been developed the adolescent must be able to establish a sense of intimacy with other people as well as with himself. This intimacy includes sexual intimacy as well as intimacy and acceptance of one's self as well as others of both sexes (Marlow, 1977). During this period the adolescent attempts to separate and establish independence from the parents. However, this effort to remove oneself from parental influence does not mean that the young person is necessarily independent as the main support system shifts to the peer group. Adolescents come to view the peer group as the major source of rules and authority in their lives (Biehler & Snowman, 1986; Marlow, 1977; Moore, et al., 1987). Young people, during this developmental phase, feel the need to conform to the norms of their peer group as is evidenced by their dressing alike and often being hesitant to voice
minority opinions. The opinion that the adolescent forms of himself during this time may reflect the opinion of the larger society, in this case, the peers. Biehler and Snowman (1986) observe that adolescents "are likely to alter their own opinions to coincide with those of a group" (p. 125).

Juhasz (1983) suggests that the two major developmental tasks identified by Erickson are especially difficult to "come to grips with and to work through to successful resolution in the 1980's" (p. 18). She cites a variety of reasons for this difficulty including the many choices that young people are faced with today regarding careers and sexual role models. Miller and Simon (1980) state that "the contemporary adolescent must fashion an interpersonal sexual script from materials provided by a society that is nearly obsessed with the sexual possibilities of adolescence" (p. 390).

The establishment of a strong sense of personal identity is difficult for adolescents for a variety of reasons. Mercer (1979) identified six primary developmental tasks of adolescence. They are: 1) acceptance and achievement of comfort with body image; 2) determination and internalization of sexual identity and role; 3) development of a personal value system; 4) preparation for productive citizenship; 5) achievement of independence from parents; and 6) development of an adult identity (p. 10).
The rapid physical changes experienced during this period in the life span are well recognized (Erickson, 1968; Howe, 1980; Moore, et al., 1987; Thornburg, 1982). Litt (1982) and Mercer (1979) cite Simmon's research which suggests that because of rapid physical changes and concern about appearance, it has been found that young adolescents may experience a loss in self-esteem. A review of the literature by Adams (1977) suggests that physical appearance is a key factor in determining the way others react to a young person. Thornburg (1982) notes that "symbolic-interaction theory holds that one's 'self' results from the interaction of role-expectations and role performance among peers. As adolescents interact with one another, attitudes toward attractive and unattractive peers are communicated. Each individual's perception of these interactions causes some modification of his or her concept of self" (p. 67).

Schultz (1986) states "It is interpersonal relationships that comprise society and thus form our environment for individuals moving toward self-growth. The primary task of young adulthood is to attain intimacy and closeness to self and others, while overcoming feelings of isolation" (p. 17).

During the adolescent period the individual often experiences significant changes in social development and personality (Moore, et al., 1987). This is not surprising since adolescents are simultaneously experiencing upheavals
in their social, psychological and physical dimensions. Adolescents question their own and their families' ideas and values and often try new ones. During this period they move toward peers and away from family as the primary influence in their lives (Howe, 1980; Mercer, 1979; Moore et al. 1987).

Juhasz and Sonnenshein-Schneider (1980) state that "individuals are sexual beings from birth until death and sexual development and behavior are integral human processes" (p. 743). They further suggest that adolescence is one of the most important periods of development in that one of the critical developmental tasks is to deal with sexual feelings and emotions in such a way as to develop the self and, yet, be socially acceptable. Adolescents must struggle with their sexual feelings which may cause them to seek the support of their peers (Marlow, 1977). Adolescents seek information about sexuality from their peers and often receive misinformation (Manley, 1985; Onyehalu, 1983).

The average age of the onset of menarche in girls is during the 12th year of age (Juhasz, 1983; Moore, et al. 1987). The onset of puberty is, on the average, about two years later for boys (Marlow, 1977; Moore, et al. 1987). Juhasz (1983) notes that Erickson identified the developmental stages of intimacy versus isolation with "love as the outcome" as appropriate for young adulthood (p. 18). However, given the early age of puberty in adolescents there
is a span of several years when the young person has sexual feelings and is capable of reproduction before resolving this developmental stage. The adolescent is not yet mature enough psychologically or socially to form stable, lasting relationships, yet, has the physical ability to reproduce and sexual drives which require responsible decision making.

The magnitude of the problem of adolescent sexuality is evident when the trends of adolescent sexual behavior, attitudes, pregnancy and sexually transmitted diseases are noted. Adolescents generally are having pre-marital sexual intercourse earlier than adolescents a generation ago (Furstenberg, Lincoln, Menken, 1981). Zelnik and Kantner (1980) reported results of a study which indicated that around 70% of young single women reported having had coitus before age 19. Goodwin (1986) reports results of findings of the National Council of Negro Women (NCNW) that by age 19, 55% of both black and white unmarried women have had sexual intercourse. Needle (1977) notes research that suggests that the age of first intercourse is earlier than it was even in the late 1960s and that the incidence of pre-marital coitus is increasing. Ostrow, Offer, Howard, Kaufman and Meyer (1985) conducted a survey of two high schools in the Chicago area to determine sexual attitudes and behaviors of those students. The sample included 202 boys and 225 girls aged 15 and over. They found that "Fifty four percent of boys and thirty seven percent of the girls
reported having had sexual intercourse by their seventeenth birthday" (p. 30). The researchers further found that the students said they were not knowledgeable about birth control or sexually transmitted diseases. Few reported using birth control all of the time or even part of the time.

Sexual mores have changed in this society. Yankellovich (1974) sampled both college and non college bound young people about attitudes toward sex comparing findings with data collected in the 60's. He found that the young people did not believe casual sex, abortion and homosexuality morally wrong. The report "Flaming Youth" (1979) stated that two thirds of the 17-18 year old females and 90% of the males approved of oral sex and over half of them reported having practiced oral sex.

MacDonald (1987) states that "more than one million American teenagers become pregnant each year" (p. 377). In 1976 Fackler and Brandstadt reported that there were approximately 500,000 pregnancies among adolescents, a rate which had quadrupled from 1940 statistics. Current reports confirm the increased incidence of teenage pregnancies referred to by MacDonald. Kenney and Orr (1984) report that approximately "40% of today's 20-year old women have had at least one pregnancy while in their teens" (p. 491).

Sexually transmitted diseases (STD) are of critical importance to the adolescent population. The report of the
Governor's Task Force on Adolescent Pregnancy and Sexuality (1986) cites Newsweek in reporting that in the United States the health care costs of treating STDs in adolescents is in excess of 2 billion dollars annually. The adolescent population is believed to be that group at greatest risk for contracting STDs, as much as twice the risk as for the population over 20 years of age (p. 25).

Acquired Immune Deficiency Syndrome and its Relationship to Adolescents

Solomon and DeJong (1986) note that "Aids is both incurable and fatal" (p. 305). This fact alone makes it stand apart from the other STDs. AIDS is an anacronym for acquired immune deficiency syndrome. "It is a disease caused by the Human Immune Deficiency Virus, HIV--the AIDS virus" (Understanding AIDS, 1988). More specifically "--the human T-cell lymphotrophic retrovirus type III--is the etiologic agent of AIDS" (Etiology & Epidemiology of HTLV-III Related Dis. 1986). The virus is commonly referred to as the HIV virus. The term AIDS is used to describe three clinical manifestations of infection with the HIV virus. Persons who are infected with the HIV virus may be asymptomatic or have persistently enlarged lymph nodes and may test positive for the virus. AIDS related complex (ARC) is characterized by abnormal laboratory findings and symptoms which include fatigue, fever and weight loss. AIDS
is the final stage during which the infected person is susceptible to a variety of opportunistic infections, Karposi's sarcoma and exhibit abnormal laboratory findings indicative of AIDS (Etiology & Epidemiology, 1986; Leppert, 1987).

AIDS was first diagnosed in the United States in 1981 with documentation of four cases (Paxton & Susky, 1988). However, evidence exists to suggest that a virus, either identical to, or very like the virus responsible for AIDS was present in this country in at least one case as early as 1968 (Garry, et al., 1988). Initially, AIDS and or HIV infection was identified in certain population groups including homosexual and bisexual men and their heterosexual partners, hemophiliacs, intravenous drug users, prostitutes and immigrants from Haiti (Curren, Morgan & Hardy 1985; MMWR Vol. 36/18 1987; Paxton & Susky, 1988). Paxton and Susky note that these are considered to be "unpopular groups" within society (p. 39). Therefore, since AIDS was initially considered to be a disease affecting primarily homosexuals it was not considered to be a serious health threat to the general population.

The reported cases of AIDS do not reflect those persons who are infected with the HIV virus and are not diagnosed with AIDS. Young (1987) says, "But most disturbing is that cases meeting the clinical definition of AIDS are only the tip of the iceberg. PHS estimates that 1-1.5 million
Americans are infected with HIV. Although some of these persons may be manifesting symptoms of AIDS related complex (ARC), most of them do not currently show any outward signs or symptoms of HIV infection. Yet they can infect others" (p. 14). A recent study by the Hudson Institute, a non-profit public policy group, suggests that the actual numbers of persons infected with the HIV virus may be twice as high as predicted by the CDC. They state that "A best guess at the range of total infections as of year-end 1987 was from 1.9 million to 3 million persons, with the likeliest range between 2.2 million and 2.6 million" (The Buffalo News, 1988). HIV infection and AIDS are most common in young to early middle year adults. (MMWR Vol. 36/no. S-2 p. 18, 1987).

The incubation period between time of infection and symptomatology is not known. It is believed that the mean incubation period for AIDS as a result of blood transfusions may be more than six years (Etiology & Epidemiology, 1986). Belfer, et al. (1988) cite Rees in stating that "The full incubation period of AIDS is not known. The development of AIDS among those infected by HIV blood transfusions suggests a 15-year mean incubation and a high incidence of disease among carriers of the virus" (p. 1147). Curran, Morgan and Hardy (1985) note that the incubation period for AIDS may be seven years or longer. It is thought that the incubation period for sexually transmitted AIDS may be from 3 to 10
years (Etiology & Epidemiology, 1986, p. 8). Young people may contract the virus during adolescence and not demonstrate symptoms of the disease until they are in their twenties (DiClemente, Boyer & Mills, 1987).

It is generally agreed that adolescents are at high risk for contracting the AIDS virus. This conclusion is based on the high incidence of STDs in that population group (Bell and Holmes, 1984; Cates and Rauh, 1985). AIDS is currently the 7th leading cause of death among Americans age 15-24 and deaths in that group increased 100 fold between 1981 and 1987 (Kolberg, 1988).

Price et al. (1988) conducted a study in college students to assess their perception of the threat and seriousness of AIDS in relation to other major causes of death in young people. They state that, "It should be noted that few subjects, regardless of sex or race, perceived themselves susceptible to the health problems under investigation in this study" (p. 17). A survey was conducted on a group of sexually active adolescents ages 14-19 in San Francisco. The survey was followed up by telephone or personal interviews one year later. It was found that the adolescents were knowledgeable about modes of transmission of STDs and that the subjects reported placing high value on the use of condoms to protect against STDs. However, after one year the females reported not intending to insist that their partners use condoms and the males
reported a decrease in their intention to use condoms. Further, the subjects continued to have multiple sex partners. These findings were surprising given the fact that there is a high incidence of AIDS in San Francisco with much media and school information about the AIDS epidemic. The researchers concluded that it is not sufficient to provide information alone to adolescents about the risks and prevention of STDs. They believe that even though adolescents may believe that condoms decrease the risk of STDs they do not feel vulnerable to contracting STDs (Kegeles, Adler & Irwin, 1988). Lyons, Sheridan and Larson (1988/1989) note that knowledge is only one domain in educating people about AIDS. They suggest that there are personal and psychological aspects that include perceptions of personal risk, and attitudes about sexual practices and orientations. Paxton and Susky (1988) note that educators must "Recognize that abstinence and celibacy are rarely acceptable for most persons. Offer an explicit plan for sexual responsibility which protects against HIV transmission" (p. 42).

Self-Esteem, Development and Relevance to Adolescents

The development of a positive sense of self worth is essential if the adolescent is to develop a stable sense of identity. The difficulty, inherent in the adolescent process, in developing a positive sense of self is apparent.
Rapid changes occurring in virtually every domain of young persons' lives, reliance on peers who are experiencing the same confusions establishes a milieu in which it is difficult to develop a strong sense of self-esteem. It is generally recognized that adolescents often feel pressure from peers to engage in sexual activity (Mercer, 1979; Weinstein, 1984). Coopersmith (1967) noted that children with medium to high self-esteem are more likely to be able to resist social pressures. It is not uncommon for young people to experience some loss of self-esteem during adolescence (Peterson, 1982).

The importance of self-esteem has been well documented. Coopersmith (1967) conducted a study of children and their mothers in an attempt to determine how self-esteem is developed and what various levels of self-esteem meant in several aspects of childrens' lives. He found that children of parents who had a high degree of acceptance for their children had higher self-esteem than those parents who showed a lower level of acceptance of the child. He also found that persons' with medium or higher self-esteem were "most likely to resist social pressures" (p. 54). This finding is of significant importance to the adolescent who is faced with and dependent upon peer influences daily. This peer influence often includes pressure to engage in sexual activity.
For adolescents who have parents who are accepting and supporting, the development of a high self-esteem may well occur. However, contemporary adolescents may well come from broken homes where parental support is not available. Others have parents or significant others who may be less than accepting. Evidence suggests that self-esteem may develop somewhat steadily throughout the life span (Dusek & Flaherty, 1981). However, studies have demonstrated that self-esteem can be altered through feedback from others in society, particularly persons regarded as significant or important to the young person. The feedback may occur in brief encounters or over a sustained period of time (Gergen, 1965; Videbeck, 1960). Crouch and Straub (1983) state that basic self-esteem is established early in life while functional self-esteem is developed later in life through interaction with the larger society. Reasoner (1983) concurs in noting that the self-concept grows through interaction and feedback from others. Gergen and Marecek (1976) note that, "the availability of others' self-esteem may be essential for a sense of social well being" (p. 7). Gilbert (1983) notes that, "the social setting provides day-to-day feedback and can be a powerful influence on self regard" (p. 29). Stanwyck (1983) believes that while self-esteem is fairly stable it can be modified, at least at a cognitive level.
A program to promote self-esteem was developed by an elementary school in California in cooperation with Dr. Coopersmith. Reasoner (1983) states that, "children not only increased short term motivation and self-confidence, but the environment seemed to have a lasting effect on their behavior" (p. 51). He further notes that the environment in schools are not conducive to raising self-esteem as feedback from friends, parents, teachers or lack of success may create a sense of inadequacy in the child. Mullenkamp and Sayles (1986) note that self-esteem is learned and state that "this learning process revolves around the interaction of the individual with the social environment, referring primarily to the family of origin, and including significant others as they vary across the individual's life span" (p.334). Cox (1985) postulates that, "human beings demonstrate a need to experience themselves as competent and self-determining in their interaction and adaption to the environment" (p. 178).

Erickson (1968) notes that during the teen years, "an optimal sense of identity, on the other hand is experienced merely as a sense of psychosocial well-being. Its most obvious concomitants are a feeling of being at home in one's body, a sense of knowing where one is going, and an inner assuredness of anticipated recognition from those who count" (p. 165). Reasoner (1983) suggests that recognizing students' strengths and giving positive feedback can
positively influence self-esteem. He believes that young people need to feel trusted, a sense of belonging and be helped to develop a concern for the welfare of others.

Research has begun to document the relationship of self-esteem, health and positive health practices. Wright (1986) conducted a study to determine moral development, locus of control and self-concept in institutionalized substance abusing adolescents. The treatment was designed to increase moral development in substance abusing adolescents. He found no significant difference in pre-test scores on locus of control and moral development in the two groups. However, posttest scores revealed a significant difference in self-concept with the substance abusing adolescents demonstrating scores which indicated poorer self-concept. Antonucci and Jackson (1983) conducted a survey of adults concerning self-esteem, health measures and demographic data. They found that adults with the highest self-esteem considered themselves healthy while identified health problems resulted in lower self-esteem. Women experiencing health problems reported lower self-esteem than men with health problems. While adolescents usually experience generally good health it is interesting to note that Litt (1982) reports on Locksley and Douvan's findings that adolescent girls are more likely than boys to experience some loss in self-esteem. Mullenkamp and Sayles (1986) conducted a study of adults identifying the
relationship between self-esteem, social support and positive health practices. Self-esteem and social support were found to have a significant effect on lifestyle. They note that both theoretical formulations and empirical evidence point to the interrelatedness of a nurturing social environment and feeling of self-worth as influencing positive health practices (p. 335). These findings have significant implications for health education as is noted by Gilbert (1983) who states "one of the goals of the health care professional, therefore, should be to facilitate greater self-esteem in all people and, thereby, uplift the quality of human life" (p. 29).

Juhasz and Sonnenshein-Schneider (1980) note that situational decision making ability is important for adolescents to make sound judgments about sexuality. They state that self-esteem is an important factor in situational decision making. Stanwyck (1983) suggests that when young people with low self-esteem come to the adolescent process they may have difficulty putting experiences into their proper perspective and, therefore, may have difficulty establishing satisfying heterosexual relationships.

Multidimensional Health Locus of Control and Health Related Decision Making

The locus of control construct is based upon social learning theory as proposed by Rotter. A major postulate of
this theory is that the study of the interaction of a person with the environment is critical in studying personality (Rotter, 1955). The theory is based on the major tenants that: 1) for a behavior to occur consistently an individual must perceive that behavior to be associated with some reinforcement and; 2) the reinforcement must have some value, either positive or negative, to the person (Rotter, Chance & Phares, 1972). From the theory, Rotter developed the notion that over time people develop attitudes about the degree to which their behavior produces reinforcements (internal control) or whether the individual believes the reinforcements are more a function of luck, chance or other powerful persons (external control) (Rotter, 1966).

The concept of locus of control was originally developed as a unidimensional I-E concept. However, Levenson (1974) was instrumental in further refining the concept into three dimensions: internal, powerful others, and chance.

This review focused primarily on studies of locus of control and self-esteem in children, adolescents and young adults. The results of studies using the locus of control construct have been mixed.

A study on a large sample of fifth and sixth grade students investigated health related past, current, and future intended health behaviors. These included smoking, alcohol and marijuana use. They found little relationship
between locus of control, and health behavior and intentions. However, higher self-esteem was found in children who practiced fewer of the negative health behaviors and those who stated they intended not to do so in the future (Dielman, Leech, Lorenger, Horwath, 1984).

A group of substance abusing adolescents were exposed to a three day wilderness challenge program to determine the effects of the experience on locus of control. It was found that after the program the group scored more internal than the control group.

Currie, Perlman and Walker (1977) conducted a study on demographic correlates of marijuana usage and the relationship of locus of control and marijuana usage in college students, school students and youths no longer in school. Although the correlation of locus of control and marijuana usage was very low in college students, for the sample as a whole, young people with internal locus of control were less likely to use the drug than were externals. Wright's (1986) study which evaluated moral development, locus of control and self concept in chemically dependent and nondependent adolescents revealed no difference in pre-test scores in the two groups on locus of control.

Blazek and McClellan (1983) conducted a study of fifth grade children to ascertain the effects of a program in self-care instruction on locus of control. A pre-test,
posttest control group design was used. They concluded that "participation in self-care instruction can increase the extent to which children view health outcomes as being due to their own actions" (p. 555).

Visher (1986) conducted a descriptive study of the relationship between the use of contraceptives and locus of control in adolescents. She found that adolescents with a more internal orientation were consistent contraceptive users. Grant (1982) in her study of sex information and locus of control in the development of autonomy in young adolescents came to three major conclusions; a course in sex education is more effective in students' acquisition of knowledge than casual learning; a sex education course may make students stronger decision makers who are less affected by peer pressure and that sexual attitudes and the development of the total person is highly related. Catania, McDermott and Wood (1984) note that, "few studies have examined the explanatory power of the locus of control concept in sexual (excluding reproductive) contexts" (p. 310).

No studies were found that examined the relationship of an AIDS education program as a health education intervention with self-esteem, multidimensional health locus of control and attitudes toward AIDS in college students. Parcel (1978) states, "If an internal locus of control is a necessary factor for children to be able to assume
responsibility for certain types of behavior, then it would be essential that health education programs provide learning activities that would reinforce an internal locus of control" (p. 158).

**AIDS Education in Adolescents**

Educating the public is generally recognized as the only means, presently available, of stemming the AIDS epidemic (Aggleton & Homans, 1987; Jenness, 1986; Solomon & DeJong, 1986; Weinstein, 1988/1989). The need for AIDS education is well documented. The Centers for Disease Control have targeted population groups for education about AIDS as a means of prevention. College aged students are among those targeted groups. The CDC developed Guidelines for Effective School Health Education to Prevent the Spread of Aids (1988) and included suggested content for school curricula from elementary through senior high school. Although the college population was a targeted group for education about AIDS, no suggested content for college classes was included in the document.

Price et al. (1985) surveyed 250 adolescents in Ohio about their level of knowledge of AIDS. Most students were not able to correctly identify all groups at risk for AIDS and did not understand modes of transmission. The students who correctly answered most of the questions were only able to answer 47% correctly. Only about one-fourth of the
students responded that they were worried about contracting AIDS.

DiClemente et al. (1986) conducted a study in San Francisco high schools regarding student's knowledge, belief of personal vulnerability, and their perceptions regarding the need for AIDS education in the high schools. A large percentage of the students identified sexual relations and sharing a needle with a drug abuser as modes of transmission of AIDS. However, around 25% of them believed shaking hands with someone infected with AIDS could transmit the disease or were unsure whether or not it could. Over half knew that using a condom could decrease the risk of contracting AIDS but about three-fourths thought there might have been a new vaccine developed for treating AIDS. While these students were concerned about AIDS 61.5% thought they were "not the kind of person" to get AIDS.

Strunin and Hingson (1987) surveyed adolescents in Massachusetts and found that over half were not worried that they would get AIDS and 61% did not believe they would ever contract AIDS. Half indicated that they had discussed AIDS with their parents and nearly all (96%) of the adolescents indicated they had heard of AIDS. The adolescents attitudes are noteworthy. Over 23% believed that people with AIDS should not be allowed to attend school and, of the 4% who had known someone with AIDS, 11% of them believed that
person was contagious and, therefore, did not see that person as frequently.

Simkins and Kusner (1986) surveyed 212 college-age students. Only about 25% of the young people indicated that they were concerned about AIDS and that their sexual behavior had been changed because of that concern.

Friedman, Des Jarlais and Sotheran (1986) surveyed knowledge level about AIDS in methadone maintenance patients in Manhattan. All of the patients knew of AIDS and 93% knew that AIDS could be transmitted through intravenous drug use. Friedman et al. (1986) reported on a study done by Selwyn and others in New York City of 146 methadone maintenance patients and 115 incarcerated drug abusers. In 1985 nearly all of the subjects knew AIDS could be transmitted through sharing needles, however, many also believed AIDS could be transmitted by sharing a drinking cup.

While most people have heard of AIDS there appears to remain a lack of knowledge about transmission of the AIDS virus, misconceptions and biases about AIDS, and a sense by young people that they are invulnerable to the disease.

AIDS education must include more than information. Weinstein (1988/1989) states "A host of psychosocial factors, among them peer pressure, poor self image and self concept, sometimes inhibit effective use of the information" (p. 22).
Peterson (1982) suggests that issues of sexuality in adolescents differ from other health related lifestyle behaviors such as smoking and drug use in that the goal is not to suggest lifelong abstinence but to "either postpone this experience or learn how to be responsible sexual partners" (p. 238). Sharpe (1988) suggests that the just "say no" approach to adolescent behavior problems is unrealistic. She notes that "If adolescents are to cope in today's world, they will need a repertoire of skills" (p. 49).

In reporting on the MATHTECH research of adolescent sexuality education programs Kirby (1983) cites programs ranging from "six hours, semester programs, conferences, programs for young people alone and with their parents, peer education programs, both school and non-school programs, and both educational and clinic approaches" (p. 12). Long, Higgins and Brady (1988) state that, "teens who have had sexual education are more likely to act responsibly in sexual encounters rather than be carried away by emotion" (p. 112). In reviewing the MATHTECH programs Kirby (1983) reported the preliminary major results of the studies. He noted that students reported an increased awareness of the need for the use of contraceptives, increased knowledge, self understanding, self respect and decision making abilities regarding sexuality and clarified values.
A study by Taylor (1983) explored attitudes about sexuality in college students at two universities in separate geographical locations. The pre-test posttest control group design was used for students enrolled in human sexuality courses in both universities. The study demonstrated that attitudes about sexuality did change in the experimental groups with no change in attitudes in the control group. Both Kirby (1983) and Taylor (1983) note that courses in sex education have been more successful in increasing knowledge than changing attitudes about sexuality. Long et al. (1988) state that "education of the teen during these very vulnerable years is essential to the development of a healthy sexual attitude" (p. 111). Tones (1986) notes that health education, "...may bring about changes in belief or attitudes and facilitate the acquisition of skills" (p. 6).

The review of the literature points out that adolescence is a complex period during the life span with changes occurring in the physical, social, and psychological dimensions of the young person's life. The threat of AIDS is real and calls for sound decision making by these young people in regard to sexual and other risk behaviors. Self-esteem, locus of control and attitudes toward AIDS emerge as important concepts to be investigated in relation to AIDS education.
CHAPTER III
METHODOLOGY

Design of the Study

The purpose of this study was to ascertain if there is a significant relationship between an AIDS education program and self-esteem, health locus of control, and attitudes towards AIDS in college students. The design of the study, selection of subjects, treatment, conditions of testing and data analysis are described in this chapter.

Study Design

The design utilized in this study is the nonequivalent control group design. This is design 10 in Campbell and Stanley (1966) (See Figure 1).

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Figure 1- Nonequivalent control group design

\(0\) = Observation on the dependent variables of self-esteem, health locus of control, and attitudes towards AIDS.

\(X\) = AIDS education program
This design was appropriate for this study as subjects were "naturally assembled collectives" in a classroom (Campbell & Stanley, p. 47). This quasi-experimental design is like the "true pre-test/posttest experimental design except for the lack of randomization" (Fors & Devereaux, 1979, p. 28). The design controls for threats to internal validity except for regression and interaction of selection and maturation. It poses threats to external validity of interaction of testing and X, Interaction of Selection and X and reactive arrangements. Multiple X interference was not a threat to external validity as there was only one treatment.

Selection of Subjects

The sample for this study consisted of a convenience sample of college students on a regional campus of Ohio University. Intact classes were used with the cooperation of the administration and faculty of the campus. The criterion for selection of classes was only that they be at the freshman or sophomore level and the professor agreed to allow the time for students to participate in the study. The courses used for the study were freshman or sophomore level zoology, sociology, psychology, educational psychology, and anthropology classes. The AIDS education program was taught in the zoology and sociology courses to obtain the desired sample size of at least 30 subjects. The
remainder of the courses were used to obtain the sample for the comparison group. Participation in the study was voluntary although no students were known to refuse to participate. Students who participated in the program were given bonus points from the instructors of record in all but one course.

Description of Sample

The sample included students from one regional campus of Ohio University. Intact classes were used for both the experimental and comparison groups. Persons over the age of 24 were not included in the study. The sample included 92 college students between the ages of 18-24. Of the 48 subjects in the 0-19 age range, 31 were female (64.6%) and 17 (35.4%) were male. In the 44 students in the 20-24 age range, 29 (65.9%) were female and 15 (34.1%) were male. The students in the sample were overwhelmingly single. Only 6 students were married and all were in the 20-24 age group accounting for 13.6% of that age group. Of those married, 4 were female accounting for 6.7% of the total female sample population and two were male, accounting for 6.3% of the total male sample population. One married student was in the experimental group (2.2%) and 5 were in the comparison group (10.9%).

Coincidently, both the experimental and comparison groups each contained 30 females (65.2%) and 16 (34.8%)
males with 46 subjects in each group. Sixty-nine students (75%) of the sample were 20 years of age or younger. Eighty-three (90.2%) were 22 years or younger with only nine students (9.7%) being 23-24 years of age. The mean age for the sample was 19.85 years of age.

Coopersmith Self Esteem Inventory

The Coopersmith Self Esteem Inventories (SEI) include three questionnaires. The original form was the School Form which consisted of 50 items and is intended for use with children between the ages of 9 and 15. The adult form is intended for use with persons aged 16 and older. It consists of items which were adapted from the School Short Form of the Coopersmith Self Esteem Inventories. The correlation between the Adult Form and the School Short Form "exceeds .80 for three samples of high school and college students (N=647)" (Coopersmith, 1986, p. 2). Among the uses suggested for the SEI are those of program evaluation and clinical and research studies.

The SEI Adult Form consisted of 25 items to which the respondent was to answer "like me or unlike me". Administration time for the SEI was approximately 10 minutes. Scoring keys were available and it was strongly advised that they be used, however, it was not required. A Total Self Score was obtained by summing the correct answers and multiplying the total raw score by 4. The total
possible score was 100. No definite criteria were established for low, medium, and high self-esteem. "The means have generally been in the range of from 70 to 80 with a standard deviation of from 11 to 13" (Coopersmith, p. 8). It was suggested that position in the group may be a means of determining levels of self-esteem with the upper quartile being "considered indicative of high self-esteem, the lower quartile generally as indicative of low self-esteem, and the interquartile range generally as indicative of medium self-esteem" (Coopersmith, p. 8). The SEI inventories have been used extensively with both children and adults across many cultural and socioeconomic groups and have been found to be valid and reliable instruments. The information presented here will only include the reliability studies done with the SEI on college students and is taken from the SEI manual. In a study of 453 college students given the short form the inter-item correlation was found to be around .13 (Coopersmith, p. 12). Another study demonstrated the test-retest reliability of the short form for a group of 103 college students with one year between tests. "Coefficients are .80 for males and .82 for females" (Coopersmith, p. 13). The Adult Form of the SEI was administered to a group of college students (N=226) who were students in a community college or state university in California. The mean age of the students was 21.5 and a range of ages of 16-34. Cronbach alpha reliabilities ranged from .78 to .85. There
were no significant differences noted in school or gender. There were differences noted in age which approached statistical significance. The students no longer in their teens showed somewhat higher self-esteem than the younger students. In this study, the reliabilities were .8452 on the pre-test and .8699 on the posttest.

**Multidimensional Health Locus of Control Scales (MHLC)**

The original health locus of control instrument (HLC) developed by Wallston et al. (1976) was a unidimensional measure of health locus of control. Based on Levenson's work that suggested that there were three dimensions of locus of control the instrument was revised to include multidimensions of the concept.

Using the eleven items from the HLC, new items were added which were believed to reflect three dimensions of health locus of control. They were: internality (IHLC), powerful others (PHLC) and chance (CHLC) externality (Wallston, et al., 1978). The 70 new items were added to Levenson's I, P, & C scale items, a shortened 10 item version of the Marlowe-Crowne Social Desirability scale and two items regarding health status. Items from the MHLC were chosen based on data from 115 subjects who completed booklets of pooled items.
Using specific criteria for item selection two forms of the scale were developed. Items were paired according to meaning and assigned to either form A or B in an attempt to construct equivalent forms of eighteen items each. Alpha reliabilities were lower, (.673 to .767) for the two forms. When taken together as 12 item scales the alpha reliabilities were significantly higher (.84 to .86) (Wallston & Wallston, 1981, p. 195). The three dimensions did not significantly intercorrelate. The correlational values for the combined forms were IHLC (50.409), PHLC (40.965) and CHLC (31.035). The scales were each highly correlated with its "theoretical counterpart on Levenson's scales" (Wallston & Wallston, 1978). In this study, reliabilities were as follows: IHLC pre-test .7676; IHLC posttest .8189; CHLC pre-test .6284; CHLC posttest .5772; PHLC pre-test .5444; PHLC posttest .5029.

Two essentially equivalent forms of the MHLC were designed for use in studies which require pre-test posttest procedures. Using different forms reduces the possibility of respondents remembering items from the first test. Later research has raised the question as to whether the forms are truly equivalent. Each form consists of 18 items. A Likert scale is used for the MHLC with choices ranging from strongly disagree which is scored as one to strongly agree which is scored as six (Wallston & Wallston, 1978,
p. 162). For purposes of this study the form A was used for both the pre-test and posttest.

The validity of the construct of MHLC appears to be greater when the health locus of control is seen as a dependent variable than when it is used as a predictor of behavior. (Wallston & Wallston, 1981).

**AIDS Inventory**

The authors of the AIDS inventory reviewed relevant literature and interviewed college students to develop an initial list of questions which were then developed into a questionnaire. The questionnaire was reviewed by a panel of experts who were asked to add additional items or delete unnecessary items. On the basis of the review of the 25 health educators three items were added and two eliminated. The final tool consists of 42 items which are rated on a five point Likert scale from strongly agree to strongly disagree. The instrument was administered to two groups of college students N = 274 and 214 respectively. The inventory was administered to college students enrolled in health classes in the spring and fall quarters. The students in the health classes had received no AIDS education in those classes prior to administration of the tool. Conbach's alpha was used to establish reliability of the instrument during the first administration. "The
overall alpha coefficient of reliability was 0.8492" (Gaines, et al., 1988, p. 55).

The AIDS Inventory was designed to be used as item by item attitude inventory. This study was concerned with an overall attitude towards AIDS. To obtain an overall attitude towards AIDS, the scale on 13 items was reversed to more accurately reflect a comprehensive attitude on a continuum from one to five with five representing the more positive attitude towards AIDS. The possible summative scores ranged from a low of 42 to a high of 210. Reliabilities for the instrument were .8217 on the pre-test and .8772 on the posttest. The items were reversed for scoring purposes on the following items: 1, 6, 8, 10, 11, 12, 16, 18, 22, 23, 31, 35 and 37. Eleven of the items were knowledge based so that the higher score represented a more correct answer. Items 11 and 16 are attitudes or opinions in which a higher score represented a more positive attitude.

Conditions of Testing

Students were told they were being asked to participate in a research study on the topic of AIDS. Consent forms were signed by each subject (Appendix A). Pre-tests were administered to classes on the last regularly scheduled class period before the AIDS education program. The AIDS education program was taught in consecutive class periods
for one hour twice each week during the third and fourth weeks of the quarter.

In addition to data collection on each of the three dependent variables of self-esteem, multidimensional health locus of control, and attitudes towards AIDS demographic data were collected from the subjects. The form was developed by the researcher and included: (1) social security number for purposes of coding data, (2) age, (3) marital status, and (4) sex. The form was the top sheet on the packet of materials that contained the instruments used to measure the three dependent variables.

Treatment

The treatment was an AIDS education program developed by the researcher. Course descriptions, objectives and course outline can be seen in Appendix B. The decision as to program content was guided by the literature as it related to the sample population, AIDS, self-esteem, multidimensional health locus of control and attitudes towards AIDS. No commercially developed program was found which addressed the three dependent variables in this study in a college population. Some information and case studies were taken from Quackenbush and Sargent (1988). The other situation studies were developed by the researcher (Appendix C). The AIDS education program consisted of four one hour sessions. Included in the program was information about
AIDS, modes of transmission and myths about AIDS. In class exercises such as case studies aimed at developing self-responsibility for one's own health and a respect for the health of others in regard to behaviors that might possibly transmit the AIDS virus were used. Role play was used as a strategy for analyzing possible situational responses from the perspective of high and low levels of self-esteem.
Teaching methods included lecture, films, role play, case study, situation analysis and class discussion.

Data Analysis

The t-statistic was used to test null hypotheses one through six. A multivariate analysis of variance was used to test hypothesis seven. Two groups of 46 subjects each were measured on three dependent variables over time. One group, the treatment group, received the intervening treatment program. The second group received no treatment. Both groups were measured prior to the treatment procedure and again three weeks following the first group's completion of the treatment program.

The hypotheses were tested for overall significance of the dependent variables by groups and occasions. In all analyses the level of significance was at the .05 alpha level.

Hypotheses one, two, and three deal with between group differences on each of the three dependent variables. T-
tests for independent samples were calculated. Independence of groups was assured by the administration of tests (instruments) to intact classes. Hypotheses four, five, and six address pre-test and posttest differences of the experimental group on each of the three dependent variables. T-tests for dependent samples were calculated.

A primary statistical assumption for the t-test and multivariate analysis of variance is the "assumption of normality" (Gravetter & Wallnau, 1988, p. 230). They suggest that this assumption will be satisfied if the sample is relatively large (n > 30). In this study, both the experimental and comparison groups consisted of 46 subjects. The second statistical assumption underlying the t-statistic for independent samples and multivariate analysis of variance is the homogeneity of variance assumption. Tests were run to determine compliance with this assumption.
CHAPTER IV
ANALYSIS OF THE DATA

The t-statistic was used to test null hypotheses one through six. A multivariate analysis of variance was used to test hypothesis number seven. The hypotheses were tested for significance of the three dependent variables by groups and occasions. A 0.05 level of significance was employed as the confidence interval for testing the null hypotheses. The two hypotheses that deal with the treatment effect for each dependent variable in the experimental group and between group differences are discussed together. Therefore those hypotheses are presented in pairs, namely hypotheses H1 and H4, H2 and H5, H3 and H6.

Between Group Differences on Self-Esteem (H1)

The first hypothesis stated that college students who completed an AIDS education program would have higher self-esteem as measured by Coopersmith's Self-Esteem Inventory Adult Form than those college students who did not complete an AIDS education program. Results of data analysis indicated that the mean posttest score for the experimental group was $\bar{X} = 72.87$ as compared to a mean
posttest score of $\bar{X} = 70.17$ for the comparison group. The mean scores and t-values for groups and occasion on the Coopersmith Self-Esteem Inventory can be seen in Table 1. Although the score for the experimental group was slightly higher, statistical analysis revealed no significant difference between posttest scores of the two groups ($t = 0.60, p > .05$). Therefore, the null hypothesis was not rejected. The research hypothesis was not supported. Levels of self-esteem did not differ among college students who completed an AIDS education program and those who did not complete the program.

Table 1

Coopersmith Self-Esteem Inventory

Table of Means and t-Values by Group and Occasion

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Posttest</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>70.78</td>
<td>72.87</td>
<td>-1.47</td>
</tr>
<tr>
<td>Comparison</td>
<td>69.30</td>
<td>70.17</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td></td>
<td>0.60</td>
<td></td>
</tr>
<tr>
<td>p &gt; .05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Within Group Difference on Self-Esteem (H4)

Hypothesis H4 stated that college students who completed an AIDS education program would have higher levels
of self-esteem as measured by the Coopersmith Self-Esteem Inventory Adult Form than prior to the program. The mean scores for the experimental group were $\bar{X} = 70.78$ on the pre-test and $\bar{X} = 72.87$ on the posttest. While the mean scores increased slightly from the pre-test to the posttest the gain was not statistically significant. Statistical analysis revealed that there was no significant difference between the means of the pre-test and posttest scores for the experimental group ($t = -1.47$, $p > .05$) (see Table 1). The null hypothesis is not rejected as a true statement for this population. Therefore the research hypothesis is not supported. For this sample the treatment did not appear to affect the experimental group's level of self-esteem.

**Between Group Differences on Attitudes Towards AIDS (H3)**

Hypothesis H3 stated that there would be a significant difference in attitudes towards AIDS among college students who completed an AIDS education program and those college students who did not complete an AIDS education program. Subjects completed a 42 item 5 point Likert scale AIDS Inventory which measured attitudes towards AIDS. A higher score indicated a more positive attitude towards AIDS. The range of possible summative score on the AIDS Inventory was 42 to 210. The mean score on the posttest for the experimental group was $\bar{X} = 160.46$ while the mean for the
comparison group was $\bar{X} = 153.44$. The mean scores and t-values for groups and occasions can be seen in Table 2.

Table 2

**Aids Attitude Inventory**

Table of Means and t-Values by Group and Occasion

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Posttest</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>152.59</td>
<td>160.46</td>
<td>-4.93*</td>
</tr>
<tr>
<td>Comparison</td>
<td>156.35</td>
<td>153.44</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td></td>
<td></td>
<td>2.05**</td>
</tr>
</tbody>
</table>

* $p<.001$
** $p<.05$

Statistical analysis revealed that there was a significant difference in attitudes towards AIDS among students who completed the AIDS education program and those who did not ($t = 2.05, p<.05$). The null hypothesis was rejected as a true statement about the means of this population providing support for the research hypothesis. The treatment appeared to influence subjects' attitudes towards AIDS. Levels of attitudes towards AIDS appear to differ among groups who completed the AIDS education program and those who did not.
Within Group Differences on Attitudes Toward AIDS (H6)

Hypothesis H6 stated that college students who completed an AIDS education program would demonstrate a difference in attitudes towards AIDS than prior to the program. Mean pre-test score for the experimental group was $\bar{X} = 152.59$ as compared to a mean posttest score of $\bar{X} = 160.46$. Statistical analysis indicated that students who completed the AIDS education program differed significantly after completion of the program as evidenced by $(t = -4.93, p < .001)$ (see Table 2). The null hypothesis was not rejected as a true statement about this population, therefore, the research hypothesis was supported.

This is the only study in which the AIDS Inventory has been used as a summative scale. Therefore, the mean scores by group and occasion for each of the 42 items on the AIDS Inventory can be seen in Appendix E.

Between Group Differences on Multidimensional Health Locus of Control (H2)

The locus of control dependent variable consists of three subscales. Each of the subscales were analyzed in order to test hypotheses two and five. The mean scores and t-values for each of the subscales by group and trial are shown in Tables 3, 4, and 5.
Table 3

**Mean Scores Internal Health Locus of Control (IHLC)**

Table of Means by Group and Occasion

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Posttest</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>20.04</td>
<td>25.96</td>
<td>0.14</td>
</tr>
<tr>
<td>Comparison</td>
<td>20.87</td>
<td>25.71</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td></td>
<td></td>
<td>0.24</td>
</tr>
<tr>
<td>p &gt; .05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4

**Mean Scores Chance Health Locus of Control (CHLC)**

Table of Means by Group and Occasion

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Posttest</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>17.93</td>
<td>17.89</td>
<td>0.06</td>
</tr>
<tr>
<td>Comparison</td>
<td>16.98</td>
<td>17.33</td>
<td></td>
</tr>
<tr>
<td>t</td>
<td></td>
<td></td>
<td>0.63</td>
</tr>
<tr>
<td>p &gt; .05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hypothesis H2 stated that college students who completed an AIDS education program would demonstrate the belief that behavior is more responsible for health (IHLC) than fate, luck, chance (CHLC) or powerful others (PHLC) as measured by scores on the Multidimensional Health Locus of Control Scale (MHLC) than college students who did not complete the AIDS education program. The mean posttest scores for the experimental and comparison groups are $X = 25.96$ and $X = 25.71$ respectively for the IHLC subscale. The posttest scores for the two groups on the CHLC subscale are $X = 17.89$ for the experimental group and $X = 17.33$ for the comparison group. The PHLC subscale revealed mean posttest scores of $X = 18.29$ for the experimental group and $X = 17.24$ for the comparison group. It can be seen that there is very little difference in the subscale scores between the two groups. Statistical analysis revealed no significant
differences in IHLC between the experimental and comparison groups (t = 0.24, p>.05). There were no significant differences on the CHLC (t = 0.63, p>.05) or PHLC (t = 1.21, p>.05). The null hypothesis is not rejected as a true statement for this population while the research hypothesis was not supported. The experimental and comparison groups do not appear to differ on locus of control when the treatment effect is considered.

Within Group Differences on Multidimensional Health Locus of Control (H5)

Hypothesis H5 stated that college students who completed an AIDS education program will demonstrate a greater belief that behavior is more responsible for his/her health (IHLC) than fate, luck, chance (CHLC) or powerful others (PHLC) than prior to the program. The mean pre-test score for the experimental groups was \( \bar{X} = 17.93 \) while the mean posttest score was \( \bar{X} = 17.89 \). Statistical analysis revealed that there was no significant difference in pre-test and posttest scores of the experimental group on the IHLC scores (t = 0.14, p>.05), CHLC scores (t = 0.06, p>.05) or PHLC (t = 1.15, p>.05). The null hypothesis was not rejected as a true statement for this population thus the research hypothesis was not supported. For this study, the treatment did not appear to influence the experimental group's health locus of control.
Relationship of AIDS Education Program to Self-Esteem, Health Locus of Control, and Attitudes Towards AIDS (H7)

Hypothesis H7 states that there would be a significant relationship between an AIDS education program and the three dependent variables of self-esteem, health locus of control, and attitudes towards AIDS. A multivariate analysis of variance was used to determine the treatment effect on the dependent variables when considered together. Posttest scores on each of the three dependent variable were considered between subjects with the two levels of the AIDS education program, that is, the experimental group who received the treatment and the comparison group who did not receive the treatment program. Statistical analysis revealed no significant interaction effects ($F = .326, p > .05$) (See Table 6). The null hypothesis was not rejected as a true statement for this population, therefore, the research hypothesis was not supported.
Table 6

**Multivariate Analysis of Variance of the Relationship of AIDS Education Program to Self-Esteem, Health Locus of Control and Attitudes Towards AIDS**

<table>
<thead>
<tr>
<th>Group</th>
<th>Wilks Lambda</th>
<th>Multiple F</th>
<th>Hypothesis DF</th>
<th>Error DF</th>
<th>Significance of F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.93436</td>
<td>1.18026</td>
<td>5.00</td>
<td>84.00</td>
<td>.326</td>
</tr>
</tbody>
</table>

p > .05

**Demographics**

Table 7 shows the mean scores on the Coopersmith SEI for group and occasion, sex, marital status and age group. In this study, males showed a slightly higher mean score than females. Subjects in the 20-24 age group demonstrated higher mean scores than subjects in the 0-19 age range.

Table 8 contains mean scores for each of the three subscales on the Multidimensional Health Locus of Control for group and occasion, sex, marital status and age group. There were no significant differences in mean scores for any of the demographic variables on any of the three subscales on the MHLC in this population of students.
Table 7

Demographics of Coppersmith's Self Esteem Inventory
Group Means by Item, Sex, Marital Status, and Age

<table>
<thead>
<tr>
<th>N=46</th>
<th>Group</th>
<th>Sex</th>
<th>Marital Status</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0-19 20-24</td>
</tr>
<tr>
<td></td>
<td>X E</td>
<td>X C</td>
<td>Female Male</td>
<td>Married Single</td>
</tr>
<tr>
<td>Pre-Test</td>
<td>70.78</td>
<td>69.30</td>
<td>68.53</td>
<td>72.88</td>
</tr>
<tr>
<td>Post-Test</td>
<td>72.87</td>
<td>70.17</td>
<td>70.47</td>
<td>73.50</td>
</tr>
</tbody>
</table>

Table 8

Demographics of Multidimensional Health Locus of Control
Group Means by Item, Sex, Marital Status, and Age

<table>
<thead>
<tr>
<th>N=46</th>
<th>Group</th>
<th>Sex</th>
<th>Marital Status</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0-19 20-24</td>
</tr>
<tr>
<td></td>
<td>X E</td>
<td>X C</td>
<td>Female Male</td>
<td>Married Single</td>
</tr>
<tr>
<td>IHLC</td>
<td>Pre-Test</td>
<td>26.04</td>
<td>25.87</td>
<td>25.62</td>
</tr>
<tr>
<td></td>
<td>Post-Test</td>
<td>25.96</td>
<td>25.71</td>
<td>25.77</td>
</tr>
<tr>
<td>CHLC</td>
<td>Pre-Test</td>
<td>17.93</td>
<td>16.98</td>
<td>17.48</td>
</tr>
<tr>
<td></td>
<td>Post-Test</td>
<td>17.89</td>
<td>17.33</td>
<td>17.98</td>
</tr>
<tr>
<td>PHLC</td>
<td>Pre-Test</td>
<td>17.51</td>
<td>17.17</td>
<td>17.55</td>
</tr>
<tr>
<td></td>
<td>Post-Test</td>
<td>18.29</td>
<td>17.24</td>
<td>18.05</td>
</tr>
</tbody>
</table>
Mean scores on the AIDS Inventory by item, on the pre-test and occasion, sex, marital status and age group are shown in Table 9. Posttest mean scores on the AIDS Inventory and the demographic variables can be seen in Table 10. While there were slight differences by item for the demographic variables, no significant amount or pattern of differences were noted in this study.

The results of the analysis of the data for the subjects who participated in the study were discussed in this chapter. The t-statistic and multivariate analysis of variance were used to statistically analyze the data.
<table>
<thead>
<tr>
<th>Question</th>
<th>Group</th>
<th>Sex</th>
<th>Marital Status</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=46</td>
<td>$\bar{X}_1$</td>
<td>$\bar{X}_C$</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>1.</td>
<td>4.59</td>
<td>4.57</td>
<td>4.58</td>
<td>4.56</td>
</tr>
<tr>
<td>2.</td>
<td>4.50</td>
<td>4.74</td>
<td>4.60</td>
<td>4.66</td>
</tr>
<tr>
<td>3.</td>
<td>2.76</td>
<td>2.67</td>
<td>2.90</td>
<td>2.38</td>
</tr>
<tr>
<td>4.</td>
<td>2.74</td>
<td>3.01</td>
<td>3.00</td>
<td>2.69</td>
</tr>
<tr>
<td>5.</td>
<td>3.96</td>
<td>3.98</td>
<td>4.17</td>
<td>3.59</td>
</tr>
<tr>
<td>6.</td>
<td>4.70</td>
<td>4.67</td>
<td>4.62</td>
<td>4.81</td>
</tr>
<tr>
<td>7.</td>
<td>4.26</td>
<td>4.35</td>
<td>4.32</td>
<td>4.28</td>
</tr>
<tr>
<td>8.</td>
<td>4.65</td>
<td>4.70</td>
<td>4.62</td>
<td>4.78</td>
</tr>
<tr>
<td>9.</td>
<td>4.22</td>
<td>4.07</td>
<td>4.03</td>
<td>4.34</td>
</tr>
<tr>
<td>10.</td>
<td>4.50</td>
<td>4.46</td>
<td>4.50</td>
<td>4.44</td>
</tr>
<tr>
<td>11.</td>
<td>3.87</td>
<td>3.85</td>
<td>3.83</td>
<td>3.91</td>
</tr>
<tr>
<td>12.</td>
<td>3.22</td>
<td>3.35</td>
<td>3.20</td>
<td>3.44</td>
</tr>
<tr>
<td>13.</td>
<td>4.26</td>
<td>4.28</td>
<td>4.45</td>
<td>3.94</td>
</tr>
<tr>
<td>14.</td>
<td>2.93</td>
<td>2.65</td>
<td>2.85</td>
<td>2.69</td>
</tr>
<tr>
<td>15.</td>
<td>3.63</td>
<td>3.59</td>
<td>3.42</td>
<td>3.97</td>
</tr>
<tr>
<td>16.</td>
<td>4.26</td>
<td>4.26</td>
<td>4.25</td>
<td>4.28</td>
</tr>
<tr>
<td>17.</td>
<td>2.50</td>
<td>2.30</td>
<td>2.50</td>
<td>2.22</td>
</tr>
</tbody>
</table>

Scale 1 = Strongly agree  * Items reversed
2 = Agree
3 = No opinion
4 = Disagree
5 = Strongly disagree
<table>
<thead>
<tr>
<th>Question</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Sex</th>
<th>Marital Status</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
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Scale 1 = Strongly agree  * Items reversed
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Scale 1 = Strongly agree  * Items reversed
2 = Agree
3 = No opinion
4 = Disagree
5 = Strongly disagree
Table 10

AIDS Inventory Demographics
Posttest Means by Item, Sex, Marital Status, and Age

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Scale 1 = Strongly agree  * Items reversed
2 = Agree
3 = No opinion
4 = Disagree
5 = Strongly disagree
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Scale 1 = Strongly agree  
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3 = No opinion  
4 = Disagree  
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* Items reversed
Table 10 (continued)

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Scale 1 = Strongly agree
2 = Agree
3 = No opinion
4 = Disagree
5 = Strongly disagree

* Items reversed
CHAPTER V
METHODOLOGICAL CONSIDERATIONS, SUMMARY OF FINDINGS AND RECOMMENDATIONS

This chapter will contain a discussion of relevant methodological considerations, a summary of findings and conclusions and demographic data for this study. The two hypotheses that address the treatment effect on the three dependent measures are presented in pairs, that is, H1 and H4, H2 and H5, and H3 and H6. Implications and recommendations for further research are included.

Methodological Considerations

Methodological strengths and limitations of the study will be addressed. A quasi-experimental non-equivalent control group design, was used in this study. Stanley and Campbell (1963) note the usefulness of this design particularly in educational research. While the lack of randomization may be considered a weakness the design was appropriate for this study as it was necessary to use intact classes for the experimental and comparison groups. The posttest was administered three weeks after the last class of the AIDS education program to decrease any possible
effect of the pre-test. A variety of freshman and sophomore level general education courses including zoology, sociology, psychology and anthropology were used to obtain the sample in the study.

Four possible weaknesses of the study have been identified. First, the study was conducted on one regional campus of Ohio University, therefore, the subjects were very homogeneous. The subjects in the sample may not be representative of the total population of college students in the 18-24 year age range. Secondly, the students were given extra points in the course by the instructors in all but one class, therefore, the students may have participated in the study simply to receive the extra credit. Thirdly, the program consisted of four one hour sessions which may have been an inadequate time frame in which to realistically expect to alter the concepts of self-esteem and multidimensional health locus of control. Fourthly, the instruments used to measure the three dependent variable were stapled together and given to the subjects as a packet. Two instruments, the AIDS Inventory and the MHLC are both on Likert scales with the AIDS Inventory having a five point scale with one being strongly agree while the MHLC was based on a six point scale with one being strongly disagree. The two tools were inadvertently placed in the packet in consecutive order with the AIDS Inventory followed by the MHLC then the SEI. While the differences in the instruments
were pointed out to the students it can not be determined with absolute certainty that the subjects responded to the MHLC as intended. However, the means for each of the subscales on the MHLC were very close to the normative data for that instrument.

The AIDS Inventory may have posed a methodological problem. Previous research using this instrument had used descriptive statistics, that is, percentages for each of the 42 items on the tool. This study was concerned with an overall attitude towards AIDS as opposed to an item by item attitude about AIDS. Therefore the scale was reversed on 13 items to more accurately reflect a comprehensive attitude based on a continuum from one to five with the higher number representing a more positive attitude towards AIDS. The range of possible summative scores was from a low of 42 to a high of 210 connoting a less positive to more positive attitude towards AIDS. The .8217 pre-test and .8772 posttest reliabilities of the AIDS Inventory for this study were very similar to the overall alpha coefficient of reliability established in previous use of the instrument (Gaines, et al., 1988). This finding should be interpreted with caution since this is the only study in which the instrument was used as a summative scale. Further research with the instrument is needed to establish reliability when used as a summative scale to obtain an overall attitude towards AIDS. It is important to note that there are
knowledge items imbedded in the AIDS Inventory. Validity of the instrument as purely an attitude inventory should be determined through future research. The primary criterion used by the researcher to determine the items on which to reverse the scores was that they were knowledge items on which the most correct answer was a one or strongly agree. That accounted for 11 of the 13 items on which the scores were reversed. The other two, items 11 and 16, are attitudes or opinions on which the more positive attitude was reflected by a lower score and thus was reversed so that the higher number reflected a more positive attitude.

Admittedly, the criterion and decision as to which items on which to reverse the scores were arbitrary. While the utility of the instrument is greatly increased with the ability to obtain an overall attitude about AIDS more definite criteria should be applied in determining which items should have the scores reversed and the decision supported through further research with the instrument. Two questions on the survey were particularly troublesome due to the way the items were phrased. Item 3 states, "I would not continue a relationship with someone I loved if he/she had AIDS." Subjects repeatedly asked the researcher if that meant a sexual relationship, a friendship or a relationship with a family member. They were told, in every case, that they had to interpret the statement for themselves. However, it seems clear that the kind of relationship, that
is sexual, platonic or kin would influence the response to that item. Item 31 states that "Babies with AIDS who have not been toilet trained can transmit AIDS through their feces." It is difficult to determine the most preferred response to that item. The literature suggests that while unlikely, it is possible for a care giver to contract the AIDS virus when coming into contact with feces if the feces should contain blood and precautions, such as wearing gloves, are recommended. It is the recommendation of this researcher that if the AIDS Attitude Inventory is to be a sound measure of attitudes toward AIDS, substantial review, revision and testing be conducted on the instrument.

SUMMARY OF FINDINGS AND CONCLUSIONS

Between Group Differences on Self-Esteem H1

The research hypothesis that college students who completed an AIDS education program would have higher self-esteem than college students who did not complete the AIDS education program was not supported. While evidence exists that suggests that self-esteem develops fairly steadily throughout the life span (Dusek & Flaherty, 1981) research has demonstrated that self-esteem can be altered through feedback from society particularly persons who are significant to the young person (Gergen, 1965; Videbeck, 1960). While Gergen (1965) and Videbeck (1960) suggest that this may occur with brief encounters no studies were found
in which self-esteem was measurably increased with as few as four one hour sessions. The conclusion that the failure to measurably affect self-esteem is a result of the length of the program should be approached with caution. It should be considered that the program was developed by the researcher and little guidance existed in the literature as to strategies to enhance self-esteem in other than extended interaction with young people. While strategies were employed to provide the students with positive feedback (Reasoner, 1983) the possibility exists that other teaching approaches coupled with a longer time frame might have yielded different results.

Within Group Differences on Self-Esteem H4

The research hypothesis that college students who completed an AIDS education program would have higher self-esteem as measured by Coopersmith's SEI than prior to the program was not supported. Although self-esteem increased slightly in the experimental group the increase was not significant. Although it is well documented in the literature that self-esteem can be modified (Gergen, 1965; Reasoner, 1983; Stanwyck, 1983; Videbeck, 1960) that contention was not supported in this study. The length of the program and appropriateness of teaching strategies may be relevant variables in this case as it was in H1 although only students who attended all the sessions were included in
the study. It is recommended that further research be conducted extending the length of the program to determine if self-esteem is increased. It should be noted that the students were from a conservative, Appalachian culture. Further, the regional campus on which the study was conducted is a non-residential campus which means that most of the students live with their family of origin. The literature (Coopersmith, 1967; Mullencamp & Sayles, 1986) suggests that family of origin may be an important influence in self-esteem. It is important to note that although the mean scores of the SEI did not change significantly, the sample population reflected mean scores that were consistent with the normative data of college students in this age range on the SEI. It is recommended that the study be replicated on a residential campus where the sample will consist of a more heterogeneous group of college students.

Between Group Differences on Multidimensional Health Locus of Control H2

The research hypothesis that college students who completed an AIDS education program would demonstrate the belief that behavior (IHLC) was more responsible for health than fate, luck, chance, (CHLC) or powerful others (PHLC) as measured by MHLC than college students who did not complete the AIDS education program was not supported. Although the sample had higher mean scores on the IHLC than either the
CHLC or PHLC subscales the between group posttest scores were not significant. The mean scores of the sample were consistent with the normative data for the MHLC. The program included exercises which called for the students to appraise the consequences of risk related behaviors. Situations were presented to the students and they were asked to present recommendations and solutions that reflected responsibility for their own and other's health. These strategies are consistent with Wallston and Wallston's (1978) suggestions that health education programs can influence health locus of control and that programs should focus on the concepts of self responsibility involving people in choices that affect them. While the notion that human beings are responsible for their own health related behavior was ongoing throughout the AIDS education program, the possibility exists that the teaching methods/strategies were inappropriate to increase IHLC in this study.

Within Group Differences on Multidimensional Health Locus of Control H5

The research hypothesis that college students who completed an AIDS education program would demonstrate a greater belief that behavior (IHLC) is more responsible for his/her health than fate, luck, or chance (CHLC) or powerful others (PHLC) as measured by MHLC than prior to the program was not supported. In addition to the possible weakness in
the content and strategies of the AIDS education program discussed with H2 other factors may have influenced this finding. As has been mentioned, the four one hour sessions may have been insufficient to alter the construct of locus of control. Research has supported the contention that internality can be increased in both children (Blazek & McClellan, 1983) and young adults (Leggett & Tilden, 1981). However, no information was found in the literature that discussed the recommended length of programs to enhance internal health locus of control. One possible weakness of the study was stated to be the fact that students were given a small amount of extra credit for participating in the study. It is possible that students were not psychologically committed to the program and therefore not motivated to engage in personal change. Due to the fact that time constraints are a reality in many settings where health education programs occur, it is useful to try and determine whether health locus of control can be influenced within those constraints. It is recommended that further research address the health locus of control construct with teaching methods that have been documented to be appropriate for training college students to increase their internal locus of control. This should occur experimenting with both the variables of length of program as well as teaching strategies in that population.
Between Group Difference on Attitudes Towards AIDS

The research hypothesis that there would be a difference in attitudes toward AIDS among college students who completed an AIDS education program and those who did not complete an AIDS education program was supported. This finding is consistent with research by Taylor (1983) in which attitudes about sexuality were changed in the experimental group with no change in attitudes in the control group. However, it is widely accepted (Kirby, 1983; Taylor, 1983) that courses in sex education in particular have been more successful in increasing knowledge than changing attitudes about sexuality. Tones (1986) supports the idea that health education programs may change attitudes. Because the students came from a variety of educational systems throughout the service area of the regional campus, it was not known whether the students had been exposed to AIDS education in the past. To establish a common knowledge base in the experimental group, the early portion of the AIDS education program was devoted to knowledge about AIDS particularly modes of transmission. Research by Petty and Cacioppo (1981) in a study of university students suggests that lack of knowledge and misinformation about AIDS was found to create an attitudinal bias toward people with AIDS. This could suggest that an increase in knowledge clarified attitudes that had been developed based on misinformation about transmission of the
AIDS virus. A more likely explanation is that the case studies which posed ethical dilemmas for the students coupled with films in which actual AIDS patients speak from their perspective and the class discussion combined to alter attitudes toward AIDS. That the experimental group showed a significantly more positive attitude toward AIDS than the control group would suggest that the finding may have been due to the treatment effect. A replication of the study with other groups of college students is recommended to support the findings of this study.

Within Group Differences on Attitudes Toward AIDS H6

The research hypothesis that college students who completed an AIDS education program would demonstrate a difference in attitudes towards AIDS than prior to the program was supported. Dorman and Rienzo (1988) found in a descriptive study of college students that the students were somewhat worried about AIDS. Other research (DiClemente, et al., 1986; Price et al., 1985) suggests that students were not overly concerned about AIDS and did not believe they "were the kind to get AIDS." However, the possibility exists that the students in the study considered the risk of AIDS significant enough to merit attention. This consideration may have provided motivation enough to facilitate personal change in attitudes. At least two students in the experimental group reported to the
researcher that they had themselves tested for AIDS as a result of the program. It is possible that the course content and teaching strategies inadvertently focused more on attitudinal issues than self-esteem or health locus of control. It is plausible that attitudes are more amenable to change than self-esteem and health locus of control. Although the posttest was administered three weeks after the last class of the AIDS program, the change in attitudes observed in the study may not be lasting. Given that the changes observed may not be lasting over time and the obvious methodological considerations of the AIDS Inventory, the finding in this study that attitudes toward AIDS was significantly changed should be interpreted with caution. Further research is indicated to support this finding.

Relationship of AIDS Education Program on Self-Esteem, Health Locus of Control, and Attitudes Towards AIDS

The research hypothesis that there would be a significant relationship between an AIDS education program and the three dependent variables of self-esteem, health locus of control, and attitudes towards AIDS was not supported. A multivariate analysis of variance was used to test the hypothesis. Posttest scores on each of the three dependent variables were considered between subjects with the two levels of the AIDS education program. It is recommended that, if this study is replicated, a
multivariate analysis of variance be calculated using change scores for each dependent variable and two levels of the AIDS education program.

**Demographics**

The demographics of sex, marital status and age revealed some differences among subjects. In both experimental and comparison groups, males scored slightly higher than females on the SEI. This is consistent with Litt's (1982) discussion of Locksley and Douvan's findings that adolescent girls are more likely than boys to experience loss in self-esteem. The subjects in the 20-24 year age group scored higher than the subjects in the 0-19 year age group. This finding is not surprising as the literature suggests that younger adolescents are more likely to experience loss of self-esteem.

The subjects in the 20-24 year age group scored slightly higher on the IHLC than the 0-19 year age group. The difference was not significant. The demographic variables of sex and marital status revealed no significant differences on any of the other MHLC subscales.

No significant differences were found on the 42 items of the AIDS Inventory related to sex, marital status or age. This suggests that those variables had little effect on health locus of control or attitudes towards AIDS in the sample population in this study.
Recommendations

Implications for further research have been identified based on the findings of this study. Research should be conducted to substantiate the validity and reliability of the AIDS Inventory as an accurate measure of attitudes towards AIDS. The usefulness of the scale using descriptive statistics for item analysis is questionable. The validity and reliability of the AIDS Inventory as a summative scale to measure attitudes toward AIDS should be established. If careful analysis fails to firmly establish the tool as a valid and reliable instrument another tool should be considered to measure attitudes towards AIDS.

It is recommended that the study be replicated on a residential campus of a university to determine if a more heterogeneous population of students affects the outcomes. If the findings of such a study are consistent with the results of this study, other variables should be considered. The sample population in this study was overwhelmingly white. However, the possibility exists that racial/ethnic background could influence the responses to the dependent variables. It is recommended that future studies include that attribute variable. Further research should be conducted in an attempt to establish if length of an AIDS education program affects the variables addressed in this study. This is particularly important as it is seldom feasible to have the luxury of an entire academic term for
an AIDS education program or any other program of health education. If it is found that self-esteem and MHLC can be influenced within a minimal time frame, the usefulness of such a finding could have far reaching implications for programming in health education.

Further research on teaching strategies specific to enhancing self-esteem and an internal health locus of control is needed. It is recommended that the research examine whether known strategies such as positive feedback in enhancing self-esteem and encouraging responsible choices and decision making in developing an internal health locus of control can be effectively adapted to short programs such as the one in this study.
APPENDIX A

CONSENT FORM
CONSENT FORM

I understand that I am volunteering to participate in a research study in AIDS education. I understand that I may withdraw from the study at any time and that such withdrawal will have no influence on the grade that I will receive for the course or bring about any other penalty. I understand that I will be asked to answer some questions in writing on two occasions. I understand that my name will not appear in any of the results and I will be known to the researcher by a number only. The data will be confidential and will be destroyed after analysis. I understand that the collective results of the study may be published.

If there are any questions, please contact the researcher, Carla Phillips, at 775-9404.

_________________________________________ date
student

_________________________________________
social security number

_________________________________________ date
researcher
APPENDIX B

ACQUIRED IMMUNODEFICIENCY SYNDROME EDUCATION PROGRAM
ACQUIRED IMMUNODEFICIENCY SYNDROME EDUCATION PROGRAM

Description: The purpose of this program is the study of Acquired Immune Deficiency Syndrome. Modes of transmission of the AIDS virus and prevention of HIV transmission will be examined. Concepts related to reducing risk behaviors such as self-esteem, responsibility for one's own and others' health and attitudes related to AIDS will be explored.

Program Objectives:

Upon completion of this program, the student will:

1. Correctly recall the three primary modes of transmission of the AIDS virus. (knowledge)

2. Correctly distinguish between myths and facts about AIDS. (knowledge, attitudes)

3. Appraise consequences of risk related behaviors. (MHLC)

4. Propose solutions to situations which reflect responsibility for own and other's health. (MHLC, self-esteem.)

5. Formulate policies about AIDS which reflect factual information. (attitudes)

6. Have participated in an exercise which illustrates the influence of one's opinion of self on risk taking behaviors. (self-esteem)

Teaching Methods: lecture, case studies, films and role play
Session 1:  
A. Definition of AIDS  
1. HIV infection  
2. ARC  
3. AIDS  
B. Modes of Transmission  
1. Transmission largely preventable  
2. Sexual intercourse (anal, oral, vaginal)  
3. Shared use of needles for I.V. drug use  
4. Transfusion of blood/blood products infected with HIV virus (blood now screened).  
5. Other potentially risky bodily fluids (feces, urine)  
C. Epidemiology  
1. Who gets the AIDS virus  
2. Incubation period

Session 2:  
A. Review from session one  
B. Preventing AIDS  
1. Condom usage  
2. Cleaning needles—not using or sharing needles  
3. Abstinence  
C. Risk taking behaviors  
1. Individual control over exposure to HIV virus  
2. Responsibility - whose?  
3. Decision making  
   a. self-esteem  
   b. self responsibility  
   c. responsibility toward others  
FILM: The AIDS Antibody Test

Session 3:  
A. Setting policy about AIDS  
1. FILM: AIDS-Wise, No Lies  
2. Group in class assignment: Students will work in groups to respond to four fictional situations related to AIDS which require policy decisions
Session 4:  

A. Case study - Evelyn and Harold (from "Teaching AIDS" Quackenbush and Sargent (1988)

B. Role play - Harold and Evelyn (from "Teaching AIDS" Quackenbush and Sargent (1988)  
Two perspectives:
1. Approach from perspective of low self-esteem
2. Approach from perspective of high self-esteem
3. Analyze difference responses in class discussion.
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These consist of pages:

97-100
You are the owner, manager of a large apartment complex in a town of fewer than 50,000 people. The complex has a pool, exercise room and sauna. Two males have expressed the wish to rent one of the apartments which will become empty within one month. They tell you that one of the men has AIDS and they need an apartment on the ground level of the building. What will you do?
WRITE A RESPONSE TO THIS SITUATION, KEEPING IN MIND THE NEED TO PROTECT THE CIVIL RIGHTS OF ALL PARTIES INVOLVED. WORK WITH MEMBERS OF YOUR GROUP IN DEVELOPING A RESPONSE TO THE SITUATION. CHOOSE A SPOKESPERSON FROM THE GROUP WHO WILL SHARE THE GROUP'S DECISION WITH THE CLASS. IS THERE A NEED TO DEVELOP A POLICY TO COVER THIS AND SIMILAR SITUATIONS? IF SO, DEVISE THE POLICY.

You are the chief housing officer at a small, prestigious private college. The college depends largely on donations from alumni for financing. The tuition at the college is very expensive. Many of the students at the college are children of alumni of the college. A person in the admissions office of the college informs you that an incoming student has AIDS. What will you do?
MEMBERS OF THE CLASS WILL ROLE PLAY TWO SITUATIONS. EACH WILL BE PORTRAYED FROM TWO PERSPECTIVES.

Evelyn and Harold are people in their mid-twenties who are single and sexually active. They begin dating. It seems likely, after a few dates, that they will begin to have a sexual relationship. Evelyn managed to practice safer sex with her last boyfriend, John, by suggesting they use a condom and spermicidal jelly as their birth control method. Harold however, has had a vasectomy. Evelyn is also aware that Harold sees himself as a very masculine man, and that he does not like homosexuals. She is worried about how he will react if she brings up her wish to practice safer sex because of her concerns about AIDS.

A. What do you think Evelyn should do in this situation?

B. How might Evelyn bring up the topic of safer sex?

C. How might Harold react if she says she wants to practice safer sex?

D. Imagine that Evelyn has had a past relationship with a bisexual man. She suspects she may have been exposed to the AIDS virus, and part of her concern in her relationship with Harold is to protect him. Do you think she could tell Harold about this? What might happen if she did?

SITUATION 1: ROLE PLAY TO ADDRESS THESE QUESTIONS FROM THE PERSPECTIVE OF EVELYN WITH A LOW SELF-ESTEEM WHO BELIEVES SHE IS VERY LUCKY TO HAVE A RELATIONSHIP WITH HAROLD.

SITUATION 2: ROLE PLAY TO ADDRESS THESE QUESTIONS FROM A PERSPECTIVE OF EVELYN WITH A HIGH SELF-ESTEEM.

From: Quackenbush and Sargent (1988).
Evelyn and Harold are people in their mid-twenties who are single and sexually active. They begin dating. It seems likely, after a few dates, that they will begin to have a sexual relationship. Harold managed to practice safer sex with his last girl friend, Kelsey, by suggesting they use a condom with spermicidal jelly as their birth control method. Evelyn, however, has had a tubal ligation and has led Harold to believe she has no interest in their using condoms during intercourse.

A. What do you think Harold should do in this situation?

B. How might Harold bring up the topic of safer sex?

C. How might Evelyn react if Harold says he wants to practice safer sex?

D. Imagine that Harold and Evelyn talk about safer sex, and Evelyn says she is absolutely not interested in Harold using a condom, that this is why she had a tubal ligation in the first place.

E. Imagine that Harold has had a past relationship during which he might have been exposed to the AIDS virus and part of his concern in his relationship with Evelyn is to protect her. Do you think he should tell Evelyn about this? What might happen if he did?

SITUATION 1: ROLE PLAY THIS SITUATION TO ADDRESS THE QUESTIONS AND FROM THE PERSPECTIVE OF HAROLD WITH A LOW SELF-ESTEEM WHO THINKS HE IS A VERY LUCKY MAN THAT EVELYN IS GOING OUT WITH HIM.

SITUATION 2: ROLE PLAY THIS SITUATION TO ADDRESS THE QUESTIONS AND FROM THE PERSPECTIVE OF HAROLD WITH A HIGH SELF-ESTEEM
APPENDIX D

INSTRUMENTS
AIDS INVENTORY

Josephine Gaines, Ed.D., Mary Michal, M.D.
East Tennessee State University

DIRECTIONS: Put your social security number in the top right hand corner of the first page of the AIDS inventory. This is not a test. There are no wrong or right answers to any of the statements. Answer each item as honestly as you can.

These are statements of belief about health and the illness AIDS. Rate each item on a scale of (1) Strongly Agree; (2) Agree; (3) No Opinion; (4) Disagree; (5) Strongly Disagree. Circle your response to each question.

1. People who have multiple sexual partners are more likely to have AIDS. 1 2 3 4 5
2. All people who have AIDS are homosexuals. 1 2 3 4 5
3. I would not continue a relationship with someone I loved if he/she had AIDS. 1 2 3 4 5
4. Anal sex is against the laws of God. 1 2 3 4 5
5. Children who are HIV infected should be excluded from school. 1 2 3 4 5
6. Having sex with persons who are intravenous drug user increases the risk of contracting AIDS. 1 2 3 4 5
7. People who have AIDS are immoral. 1 2 3 4 5
8. Prostitutes may be a source of contracting AIDS. 1 2 3 4 5
9. Donating blood may increase the donor's chances of contracting AIDS. 1 2 3 4 5
10. Pregnant women who have AIDS can transmit it to fetus. 1 2 3 4 5
These are statements of belief about health and the illness AIDS. Rate each item on a scale of (1) Strongly Agree; (2) Agree; (3) No Opinion; (4) Disagree; (5) Strongly Disagree. Circle your response to each question.

11. The increase in AIDS in the U.S. will lead to more conservative sexual behavior. 1 2 3 4 5
12. AIDS is more frequent in urban areas. 1 2 3 4 5
13. I would disown a family member who had AIDS. 1 2 3 4 5
14. It is dangerous for hospital workers to care for AIDS patients. 1 2 3 4 5
15. It is hazardous to use the same toilet facilities as those used by AIDS victims. 1 2 3 4 5
16. The government should be putting more money into research to develop a vaccine against AIDS. 1 2 3 4 5
17. I would not share an apartment with a person who has been exposed to the AIDS virus. 1 2 3 4 5
18. AIDS is a major health problem in our society. 1 2 3 4 5
19. We should not waste tax money on people with AIDS 1 2 3 4 5
20. All people who have AIDS die. 1 2 3 4 5
21. All gay males are carriers of HIV infection. 1 2 3 4 5
22. Casual contact with persons who might be at risk to develop AIDS does not place others at risk of getting the illness. 1 2 3 4 5
23. The transmission of AIDS requires the exchange of body fluids, such as the exchange that occurs in intimate sexual relationships or an exposure to the blood from infected persons. 1 2 3 4 5
24. AIDS is transmitted by mosquitoes. 1 2 3 4 5
25. Anyone practicing anal sex deserves to get AIDS. 1 2 3 4 5
These are statements of belief about health and the illness AIDS. Rate each item on a scale of (1) Strongly Agree; (2) Agree; (3) No Opinion; (4) Disagree; (5) Strongly Disagree. Circle your response to each question.

26. All persons who have been exposed to AIDS will get the disease. 1 2 3 4 5

27. Health personnel, such as physicians, dentists and nurses, who are HIV infected should not be allowed to practice. 1 2 3 4 5

28. AIDS can be transmitted through tears. 1 2 3 4 5

29. AIDS can be transmitted through contact with saliva (i.e. kissing). 1 2 3 4 5

30. Children with AIDS who drool can transmit AIDS. 1 2 3 4 5

31. Babies with AIDS who have not been toilet trained can transmit AIDS through their feces. 1 2 3 4 5

32. AIDS victims who are teachers, and others who deal with children, should be removed from their jobs. 1 2 3 4 5

33. Babies who are infected with the AIDS virus should be excluded from day care centers. 1 2 3 4 5

34. All AIDS victims should be strictly quarantined to halt the spread of the condition. 1 2 3 4 5

35. AIDS can be transmitted through breast feeding. 1 2 3 4 5

36. If a parent gets AIDS, the children should be removed from the home. 1 2 3 4 5

37. Condoms can help prevent AIDS. 1 2 3 4 5

38. AIDS is God's way of punishing homosexuals. 1 2 3 4 5
These are statements of belief about health and the illness AIDS. Rate each item on a scale of (1) Strongly Agree; (2) Agree; (3) No Opinion; (4) Disagree; (5) Strongly Disagree. Circle your response to each question.

39. Oral sex is against most state laws.  

40. Students who have been exposed to AIDS should be dismissed from college.  

41. Students exposed to AIDS should be excluded from eating places on campus.  

42. I would not live in a dormitory with someone suspected of having been exposed to AIDS.
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These consist of pages:

Questionnaire 110-111
APPENDIX E
AIDS INVENTORY TABLE OF MEANS
BY GROUP AND OCCASION
Table

AIDS Inventory Table of Means by Group and Occasion

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<thead>
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<th>Questions</th>
<th>Experimental Pre</th>
<th>Experimental Post</th>
<th>Comparison Pre</th>
<th>Comparison Post</th>
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Scale 1 = Strongly agree  * Items reversed
2 = Agree
3 = No opinion
4 = Disagree
5 = Strongly disagree
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<td>28. AIDS can be transmitted through tears</td>
<td>3.37</td>
<td>3.43</td>
<td>3.72</td>
<td>3.59</td>
</tr>
<tr>
<td>29. AIDS can be transmitted through contact with saliva (i.e. kissing)</td>
<td>3.02</td>
<td>3.70</td>
<td>3.46</td>
<td>3.15</td>
</tr>
<tr>
<td>30. Children with AIDS who drool can transmit AIDS</td>
<td>3.15</td>
<td>3.70</td>
<td>3.72</td>
<td>3.52</td>
</tr>
<tr>
<td>31. Babies with AIDS who have not been toilet trained can transmit AIDS through their feces</td>
<td>3.09</td>
<td>3.11</td>
<td>3.20</td>
<td>3.41*</td>
</tr>
<tr>
<td>32. AIDS victims who are teachers and others who deal with children, should be removed from their jobs</td>
<td>2.80</td>
<td>3.37</td>
<td>3.48</td>
<td>3.11</td>
</tr>
<tr>
<td>33. Babies who are infected w/ AIDS virus should be excluded from day care centers</td>
<td>3.02</td>
<td>3.17</td>
<td>3.35</td>
<td>3.20</td>
</tr>
<tr>
<td>34. All AIDS victims should be strictly quarantined to halt the spread of the condition</td>
<td>3.11</td>
<td>3.63</td>
<td>3.35</td>
<td>3.33</td>
</tr>
<tr>
<td>35. AIDS can be transmitted through breast feeding</td>
<td>3.46</td>
<td>3.83</td>
<td>3.33</td>
<td>3.15*</td>
</tr>
<tr>
<td>36. If a parent gets AIDS the children should be removed from the home</td>
<td>3.65</td>
<td>3.98</td>
<td>4.02</td>
<td>4.04</td>
</tr>
<tr>
<td>37. Condoms can help prevent AIDS</td>
<td>4.57</td>
<td>4.76</td>
<td>4.78</td>
<td>4.53*</td>
</tr>
<tr>
<td>38. AIDS is God's way of preventing homosexuals</td>
<td>3.78</td>
<td>3.83</td>
<td>3.85</td>
<td>3.68</td>
</tr>
<tr>
<td>39. Oral sex is against most state laws</td>
<td>3.35</td>
<td>3.41</td>
<td>3.37</td>
<td>2.94</td>
</tr>
<tr>
<td>40. Students who have been exposed to AIDS should be dismissed from college</td>
<td>3.78</td>
<td>3.94</td>
<td>4.11</td>
<td>4.04</td>
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<tr>
<td>41. Students exposed to AIDS should be excluded from eating places</td>
<td></td>
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### Table (continued)

<table>
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<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
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<tr>
<td>42. I would not live in a dormitory with someone suspected of having AIDS</td>
<td>2.96</td>
<td>3.30</td>
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</table>

Scale 1 = Strongly agree  
2 = Agree  
3 = No opinion  
4 = Disagree  
5 = Strongly disagree  
* Items reversed
APPENDIX F

LETTERS OF PERMISSION
Ms. Phillips,

you have my permission to use the AIDS Inventory.
Sorry for the delay.
I retired & do not get to the office often.
Good luck!

Josephine Gaines
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**SHIP TO:**

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COLUMBUS OH 43201

---

<table>
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<td>CSEI MANUAL</td>
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<tr>
<td>1707</td>
<td>CSEI ADULT FORM SCORING KEY</td>
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<tr>
<td>1713</td>
<td>CSEI ADULT FORM DELTA PK/25</td>
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PACKING LIST
To: Fellow Health Researcher  
From: Kenneth A. Wallston, Ph.D.

Thank you for your interest in the Health Locus of Control Scales. Please excuse this form response, but I have so many inquiries requiring similar replies that I have found this to be an efficient means of disseminating information.

You have my permission to utilize Form A or B of the MHLC scales in any health related research you are doing. My only request is that you keep me informed of any results you obtain using the scales. In that way I hope to continue to serve as a clearinghouse for information about the scales.

We are currently in the process of developing Form C of the MHLC scales, an instrument which can easily be made specific to any existing medically-related condition which your subjects might have (e.g., diabetes, cancer, high blood pressure, migraine headaches, arthritis, chemical dependencies, etc.). We have used Form C as an "Arthritis Locus of Control Scale" and are generally pleased with its psychometric properties. If you think such an instrument would be helpful in your research and if you are willing to share your data back with us, we would be pleased to make it available to you.

We have put many of the studies that have been done with the HLC/MHLC scales on a computerized database coded into 22 different fields. Thus, should you or any other investigator wish to know "how many studies have been done using Form A with an N > 100 with male subjects predicting smoking behavior?," we have the capability of searching the database and seeing which studies fit that description. There is a charge of $25 for each search and report that we do; however, we will refund $20 if the search comes up with nothing useful.

If you wish to be added to our mailing list or want additional material, please complete and return the enclosed interest questionnaire. For some items there is a small charge to cover duplication and postage. I hope to periodically send updated information related to the use of these scales as it becomes available.

If you have more specific questions, don't hesitate to contact me. Please remember to send me information on any use you make of these scales. I have included a usage questionnaire to facilitate your doing so. I look forward to hearing from you.

2/89
REFERENCES


Centers For Disease Control (1988). *MMWR, 37*/44.

Centers For Disease Control (1988). Guidelines for effective school health education to prevent the spread of AIDS. *MMWR, 37-S2*.


