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The Effects of AIDS Education on Knowledge and Health Care Beliefs of Nursing Students

Catherine Taliaferro Earl
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THE EFFECTS OF AIDS EDUCATION ON KNOWLEDGE AND
HEALTH CARE BELIEFS OF NURSING STUDENTS

By

Catherine Taliaferro Earl

A THESIS

Submitted to
Grand Valley State University
in partial fulfillment of the requirements
for the degree of

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1990

Thesis Committee Members

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ABSTRACT

THE EFFECTS OF AIDS EDUCATION ON KNOWLEDGE AND
HEALTH CARE BELIEFS OF NURSING STUDENTS

By

Catherine Taliaferro Earl

The purpose of this study was to investigate the effects of AIDS education on knowledge and health care beliefs of nursing students. There were two hypotheses tested. Hypothesis one: nursing students presented with factual information about AIDS have more knowledge about AIDS than nursing students without AIDS instruction. Hypothesis two: strength of health care beliefs related to AIDS susceptibility, seriousness, benefits, barriers, and health motivation of students with AIDS instruction differ from those without AIDS instruction.

The study was conducted using a pretest-posttest quasi-experimental design. The sample included 29 second term nursing students enrolled in the nursing curriculum of an associate degree program. AIDS knowledge and health care beliefs were measured before and after factual information about AIDS was given to the experimental group. Hypothesis one was not supported. AIDS knowledge of the experimental group was not different from that of the control group ($p > .05$). On the posttest, the two groups were not significantly different on four health care beliefs: seriousness, benefits, barriers, and health

motivation ($p > .05$). A significant difference between the two groups with the susceptibility belief was found at the posttest ($p < .05$).

DEDICATION

This research is dedicated to my parents, Catherine and Tom Taliaferro, for teaching me the importance of education. My parents have influenced how I value learning and stressed the importance of sharing knowledge. The guidance my parents gave me has influenced how I teach and has helped me to become a dedicated nursing instructor.

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Table of Contents

List of
Tables.....ix

List of
Figures.....x

List of Appendices.....xi

CHAPTER

1 INTRODUCTION.....1

 Problem Statement.....4

 Purpose.....4

2 LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK.....6

 Literature Review.....6

 Conceptual Framework.....19

 Summary.....28

 Research Hypotheses.....29

 Definition of Terms.....29

3 METHODOLOGY.....32

 Research Design.....32

 Sample and Setting.....32

 Instruments.....33

 Psychometric Analysis of Instruments.....37

 Procedure.....40

4 RESULTS.....43

 Data Analysis Preparation.....43

 Descriptive Statistics.....43

 Analysis to Test the Research Hypotheses.....48

 AIDS Knowledge.....48

 AIDS Health Care Beliefs.....49

5 DISCUSSION/IMPLICATIONS/CONCLUSIONS.....	58
Discussion.....	58
Limitations and Strengths of the Study.....	62
Implications.....	65
Conclusions.....	69
References.....	72

Table	List of Tables	Page
1.	Internal Consistency for the AIDS Health Care Belief Subscales.....	39
2.	Demographic Characteristics of Experimental and Control Groups.....	44
3.	Socio-demographic Characteristics for Experimental and Control Groups.....	45
4.	Comparison of Experimental and Control Groups With Respect to PreAIDS Knowledge and PreAIDS Health Care Beliefs.....	47
5.	Analysis of Covariance on Posttest AIDS Knowledge Scores.....	49
6.	Analysis of Covariance for AIDS Health Care Belief Items.....	52
7.	Mean and Standard Deviation of AIDS Health Care Beliefs by Experimental and Control Groups.....	53
8.	Frequency of Two Groups Responding to Five Miscellaneous Health Care Belief Items on Pretest and Posttest.....	55
9.	Competency in Caring for an AIDS Patient.....	56

List of Figures

Figure	Page
1. Health Belief Model.....	24

List of Appendices

Appendix	Page
A. General Information Questionnaire.....	79
B. AIDS Knowledge Questionnaire.....	80
C. AIDS Health Care Belief Scale.....	84
D. AIDS Health Care Beliefs Factor Analysis.....	88
E. Verbal Script.....	91
F. Permission to Use the Knowledge Questionnaire From Wertz and Associates.....	92
G. Permission to Use the Knowledge Questionnaire From Dawson and Associates.....	93
H. Permission to Use the Health Care Belief Scale...	94

CHAPTER I
INTRODUCTION

AIDS, acquired immunodeficiency syndrome, is a complicated health concern which has surfaced in this century. About one to one and one half million of the total population of approximately two hundred forty million Americans currently are infected with the AIDS virus, and, consequently, are capable of infecting others (Morbidity and Mortality Weekly Report [MMWR], 1988). By 1991, there will be an estimated 68.63 persons with human immunodeficiency virus (HIV) per 100,000 population, with a mortality rate of 25.74 deaths per 100,000 people. The fiscal impact of AIDS is high with an estimated cost of \$ 8.5 billion by 1991 (Scitovsky, 1987) which goes far beyond present-day health care coverage.

The mass excitement, alarm and terror of AIDS is similar to that exhibited by society in 1665 when the Great Plague of London occurred in which all people avoided those stricken with the plague. However, the fear and stigma of AIDS are far greater due to the negative perceptions of the way of life of some of its victims. In one study alone, AIDS patients were found to be the most negatively evaluated and most rejected group (Katz, Parisi, & McEvaddy, 1987) by health care personnel.

Experts claim that the best solution to control AIDS

is to develop a vaccine. This is a time consuming task. Authorities predict a vaccine for AIDS will not be discovered by chance and that one may not be procurable for another 5-20 years. Until a vaccine is developed the best approach to the control of AIDS is prevention. Education is a key to achieving this. Health care providers must be committed to developing more positive attitudes toward victims of AIDS in order to promote quality patient care. AIDS has captivated an audience of a variety of people because of its severe consequences which has resulted in high mortality rates. Professionals in the health care arena, in particular nurses, are in close contact with those at risk for AIDS. The population at risk, homosexual and bisexual males and intravenous drug users may be subject to bias and distortion in their health care. Transmission of AIDS is on the rise, causing a growing number of complications.

Research has shown that: 1) responses of medical staff to victims of AIDS influences how well these clients will adapt to their illness (Katz, Hass, Parish, Astone, & McEvaddy, 1987), 2) emotional concerns and fears exist among nurses who care for these patients (Katz et al., 1987), 3) negative attitudes about AIDS can be caused by inadequate knowledge (Lawrence & Lawrence, 1989), 4) nursing students prefer not to care for AIDS patients (Lester & Beard, 1988), and 5) low levels of knowledge

about AIDS exist (Gordon, Willoughby, Levine, Gurel, & Neill, 1987; Lawrence & Lawrence, 1989; Price, Desmond, & Kukulka, 1985).

It has also been demonstrated that the effects of anxiety may modify work performance of a nursing staff (McConnell, 1984). Because "One's attitude toward an object...will determine how the individual will react to that object when he encounters it" (Schiff, 1970, p. 6), this study of nursing students knowledge and health care beliefs about AIDS is necessary to promote quality patient care. Arguments for increased education as a necessity for improving attitudes in caring for AIDS patients exist.

Due to the paucity of research about AIDS a need for facilitating knowledge regarding AIDS as well as an understanding of attitudes in the development of the caring perspective within the preprofessional and professional nurse role has surfaced. Of major importance in this study is the relationship between knowledge and beliefs.

The design selected for this study was chosen in order to alter points of view while developing further understanding and beliefs regarding AIDS. Current prospectives on student nurses' knowledge about AIDS is a forerunner in the process of developing quality patient care.

It is hoped that data gleaned from this research will begin to offer strategies to promote accurate knowledge and

positive health care beliefs and diminish those that impede health care delivery to these patients.

Problem Statement

Those in the health care profession as well as the general public lack knowledge about the disease AIDS. What knowledge they do have has been found to be inaccurate. Negative attitudes towards AIDS victims is prevalent in the health care profession (Katz et al., 1987; Kelly, St. Lawrence, Hood, Smith, & Cook, 1988). Consequently, quality patient care is in jeopardy. It is necessary to assure accurate knowledge in educating about AIDS in nursing schools. More specifically, this study focuses on the questions: 1) Do nursing students presented with factual information about AIDS have more knowledge about AIDS than nursing students without AIDS education? 2) Is there a difference in strength of AIDS health care beliefs of nursing students with AIDS instruction and nursing students without AIDS instruction?

Purpose

The purpose of this study is twofold: first, to examine if nursing students presented with factual information regarding AIDS through lecture have more knowledge about AIDS than nursing students without a lecture regarding AIDS; second, to determine if there is a difference in the strength of AIDS health care beliefs held by nursing students with AIDS instruction and nursing

students without AIDS instruction. In addition to adding to nursing's body of knowledge about AIDS, a recommendation for curriculum adjustment could be developed based on the findings of this study. The results of this study may also have an impact on nurses, nursing education, and patient care, and offer nursing students an opportunity to explore their health care beliefs in regard to AIDS. This study also contributes to the extension of the Health Belief Model by providing evidence of its utilization with nursing students.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Literature Review

There are many elements concerning the AIDS issue that can be analyzed. The key elements for this study are knowledge and health care beliefs about AIDS. Studies regarding these issues have been conducted with selected target populations. This review of literature will cover the disease AIDS, along with physical, mental, and social aspects of AIDS; perspectives of health care workers' knowledge, attitudes and beliefs about AIDS; and studies conducted with a general lay population as a target group.

The Disease AIDS

The disease AIDS has been widely discussed. The literature has focused on descriptions of the prognostics (Fauci & Lane, 1984; Jaffe, Gregman, & Selik, 1983; Pinching, 1984), its epidemiology (Henderson, 1984; Dowdie, 1983; MMWR, 1988); and precautions to take (MMWR, 1987; LaCamera, 1984). AIDS is characterized by deficiencies in the body's host response with clinical manifestations of neoplastic disease and opportunistic infection (Cohen, 1984).

The AIDS virus attacks a person's immune system and damages his/her ability to fight other disease. Individuals infected with the AIDS virus sometimes but not always develop all signs and symptoms of the AIDS syndrome.

A person may remain well and have no symptoms of illness, but, even so, is able to infect others through homosexual and heterosexual activities or by sharing intravenous drug equipment. There is no known treatment available to cure individuals infected with AIDS, despite continuous medical attempts to find one.

Until a treatment can be developed, education is of critical importance in controlling the disease. Fifty percent of those people who develop symptoms of AIDS live about one and one half years after their symptoms are diagnosed and approximately twelve percent of AIDS victims have survived for more than three years (Centers for Disease Control [CDC], 1988).

A milder form of the disease known as Aids Related Complex (ARC) is a condition caused by the AIDS virus in which a person tests positive for AIDS infection and has a specific set of clinical symptoms. These symptoms may include: swollen lymph nodes, unexplained fever, and weight loss.

Psychosocial Impact of AIDS

In addition to the magnitude of the morbidity and mortality associated with AIDS there are significant psychosocial concerns that have resulted from the AIDS issue. Serious political and social ramifications have surfaced both from fears of transmission and from the initial appearance of the syndrome among stigmatized

minorities. Psychological concerns have arisen among health care workers due to prejudice and fears of contagion. These issues have added to the psychological burdens of patients with AIDS and to those with related conditions who are at high risk of developing AIDS. According to Holland and Tross (1985) how well the client with AIDS will adapt to the disease is related to four key factors: (1) impact of the disease, (2) central nervous system complications, symptoms, and events, (3) psychological distress, and (4) responses of medical staff (1985). As part of the medical team, nursing has a significant impact on the client's course of the disease AIDS through the type of care provided. Massie and Barbuto (1984) found that a critical factor in quality of care is the attitude and responses of staff to the patient.

Nichols (1985) found that the intensified prejudice towards the victims of AIDS is related to sexual taboos from the past still influencing modern society. This prejudice causes additional psychosocial problems. Understanding various psychosocial reactions to AIDS offers opportunities for social progress and personal growth. Cassens (1985) reports that injudicious "expert" pronouncements and sensational stories in the media heighten the fear of persons at risk for the disease as well as the fear and prejudice of the general community. Misconstrued information and plaguing negative attitudes

are potent stimuli for research.

In San Francisco, a study of highschool students' knowledge, attitudes and beliefs about AIDS was conducted by DiClemente, Zorn, and Temoshok (1986). The investigators found that there was marked variability in knowledge across informational items in data obtained from 1,326 adolescents. Over three fourths of the adolescents reported being afraid of getting AIDS and over half the adolescents surveyed would rather contract any other disease than AIDS. No information on reliability of the instrument used in this study was reported.

Results from a similar study with adolescents regarding knowledge about AIDS conducted by Strunin and Hingson, (1987) support this previous study. Adolescents were found to be misinformed or confused about AIDS and AIDS transmission.

Knowledge, Fears, Beliefs, Attitudes, and Behavior About AIDS in Nursing Students

Despite the importance of the health care provider to possess knowledge about AIDS, there are only two studies specifically examining "nursing students" comprehension or beliefs about the disease. Although there have been studies involving "students" reported including "medical students" knowledge and attitudes about AIDS, only a few of these studies have included nursing students as part of their sample. While nursing students have been the subject

of many areas in research, few generalizations can be drawn about knowledge and beliefs about AIDS because of the lack of pursuit in this area of research. Most recently studies have addressed nurses' knowledge about AIDS, knowledge, fears, beliefs, and other attitudes regarding AIDS with nursing students as a target population, and knowledge and attitudes about AIDS in nursing and nonnursing groups.

Lester and Beard (1988) studied nursing students' knowledge, fears, beliefs, and other attitudes regarding AIDS. The questionnaire used in this study was derived from questions written by the nursing students. The alpha coefficient for the questionnaire was .60. Content validity of the questionnaire was established by a panel of nurse experts comprised of both nursing faculty and infection control nurses. Lester and Beard (1988) reported that there was an association between a) those who were acquainted with AIDS patients and b) those who had cared for AIDS patients. Students demonstrated less fear of caring for AIDS patients if just acquainted with AIDS patients than if they actually cared for an AIDS patient. Some students were afraid they might contact AIDS during routine patient care, and would carry the virus home. Some students were more afraid of AIDS than any other disease and were not willing to care for patients with AIDS. Other students would rather quit their jobs than care for

patients with AIDS. Results also indicated that 96% of the students felt that AIDS patients were entitled to the same care as any other patient but 49% preferred not to care for AIDS patients. Thirty-six percent thought nursing students should not be assigned to care for AIDS patients. Most of the students (70.6%) received their information about AIDS from the media while less information was received from nursing journals.

Wiley, Health and Acklin (1988) surveyed nursing students attitudes about AIDS and found that more than half felt that health care workers should be allowed to refuse to treat HIV-seropositive patients. "A decade ago it would have been difficult to imagine such responses from nursing students" (p. 245).

Knowledge and Attitude About AIDS in Nurses

Haughey, Scherer, and Yow-Wu (1989) conducted a study regarding nurse's knowledge about AIDS. Reliability analysis of the knowledge items resulted in a Cronbach's alpha of .74. The mean score on an index of knowledge was slightly less than 70%. Respondents were most knowledgeable about the transmission of AIDS and least knowledgeable about issues pertaining to treatment and care. Nurses who had cared for patients with AIDS scored significantly higher overall than those without experience. According to the authors, data gleaned from this research showed evidence of the need to provide

continuing education programs for nurses to prepare them to meet the needs of the increasing AIDS crisis.

Blumenfield, Smith, Milazzo, Seropian, and Wormser (1987) examined the attitudes of nurses working with AIDS patients. Their study reported the results of a ten-question anonymous survey given to nurses. Two thirds of the responding nurses reported that they had friends or family who expressed concern about associating with hospital personnel who have contact with AIDS patients. One half of the nurses believe that AIDS can be transmitted to hospital personnel because of contact with patients despite precautions. It is clear from this study that nursing personnel caring for patients with AIDS have emotional concerns and fears in regard to their work with these patients. Blumenfield et al., (1987) found that the basis of these concerns may not always conform with recent medical knowledge about this illness. No information on the reliability or validity of the questionnaire used in this study was reported.

Reed, Wise, and Mann (1984) surveyed nurses' attitudes regarding their care of the victims of AIDS and assessed possible anxiety secondary to this care. A 21 item questionnaire was developed by the authors. A limitation of their study was that only 267 or 18% completed questionnaires were returned. Basic facts that emerged from this study included: a) fear of contracting AIDS,

and b) nurses knowledge about AIDS was considered to be "a reasonable amount". No information on reliability or validity of the instrument was reported.

Recently, a study conducted by Kelly, St. Lawrence, Hood, Smith, and Cook (1988) found that nurses react with much more attitudinal negativity toward a patient labled as having AIDS than toward an identically described patient with leukemia. No information on the reliability or validity of the instrument were reported.

A study conducted by Cohen, Durham, and Smith (1984) revealed statistically significant differences in AIDS knowledge among the groups of nurses who rated themselves with positive, negative or neutral attitudes towards persons with AIDS. Nurses with positive attitudes achieved the highest AIDS fact scores. The lowest were achieved by those who rated their attitudes as negative while the neutral responses were in between (an "average" score on the instrument).

There are studies of health care professionals which included nursing students and nurses in their sample. Reviews of these studies are presented in the next section.

Knowledge, Attitudes, and Behavior of Health Care Providers Regarding AIDS

Wertz, Sorenson, Liebling, Kessler, and Heeren (1987) studied knowledge and attitudes of AIDS of health care

providers regarding AIDS before and after educational programs. Forty-nine percent of the providers included in the study were nurses. Five percent of their sample were nursing students. Wertz and associates found that, after educational programs, the accuracy of knowledge was improved and the health care provider felt more comfortable providing care to persons with AIDS. After the AIDS educational program, there was a significant improvement in accuracy of knowledge about preventing infection control ($p < .05$). After the educational program, provider attitudes shifted to a more positive level ($p < .001$) on six of the nine attitude questions.

The results of this study suggested: (a) a need for education at all levels of the health care system, (b) the possibility of significant changes in knowledge and attitude, and (c) the need to recognize that providers at different levels of responsibility come to educational programs with different knowledge and attitudes. In addition this study contends that as long as "provider beliefs are reminiscent of popular beliefs about syphilis earlier in the century, . . . it will be impossible to ensure a decent level of care. The care of persons with AIDS cannot be entrusted to people who believe that AIDS is transmitted by doorknobs, handshakes, or being in the same room" (Wertz et al., 1987, p. 253). In this same study, a one month follow up assessment on knowledge of participants

was conducted with a volunteer group. They found that postprogram changes in knowledge and attitudes were retained. However, the use of a volunteer group could lead to biased findings. Also, the volunteers could have reviewed and read additional material about AIDS within the one month that elapsed before testing again. There was no information reported on the reliability and validity of the instrument used in this study.

Gordin, Willoughby, Levine, Gurel, and Neill (1987) surveyed knowledge, attitudes and professional behavior of staff regarding AIDS in a large urban hospital. They found that suboptimal professional behavior and attitudes about AIDS may be caused by inadequate knowledge, especially in the aspects of the way AIDS is transmitted. Extreme anxiety in dealing with AIDS patients was noted by 25% of employees. Knowledge regarding AIDS was demonstrated to be a predictor of positive attitudes, appropriate professional behavior and lower anxiety in dealing with AIDS patients. Staff with a higher level knowledge regarding AIDS were more willing to volunteer to work on a unit with AIDS patients. There is no reported data on reliability or validity of the instruments.

In a study describing knowledge and attitudes about AIDS in nursing and non-nursing groups, Lawrence and Lawrence (1989) showed that nursing students' attitudes are more similar to the attitudes of non-nursing students than

of professional nurses. This study showed that people's attitudes about AIDS could be changed by increasing their knowledge levels. Nursing students showed more increase in knowledge and more significant changes in attitudes following AIDS education than liberal arts college students. In this study, the AIDS knowledge and attitudes test was developed by the researchers. The researchers reported evidence of reliability and validity of the instrument.

In a study conducted by Katz, Hass, Parisi, Astone, and McEvaddy (1987) AIDS patients were depicted very negatively by both lay people and health care personnel. This study concerning lay people's and health care personnel's perceptions of cancer, AIDS, cardiac, and diabetic patients, included a population of college students, nurses, medical students, and chiropractic students. The perception of the characteristics of people with four types of disease were measured with an instrument which was adapted from a scale developed by Osgood, Suci, and Tannenbaum (1957). Reliability coefficients for internal consistency of the scales ranged from .64 to .79. Katz et al., reported that people with AIDS were generally the most negatively evaluated and most rejected group. All four types of subjects rated AIDS patients as the group most lacking in hope. All types of subjects distanced themselves more from AIDS patients than from any other type

of patient, tending to reject those with AIDS even as casual friends.

In the same study, correlates of attitudes towards patients were measured (that might expect to be associated with fear). Six disease beliefs were included which pertained to (1) the disease's painfulness, (2) fatality, (3) treatability, (4) preventability, (5) one's personal vulnerability to contracting it, and (6) the extent to which it was medically understood. All types of subjects from this study believed AIDS entailed the least chance of recovery and the greatest likelihood of death as an outcome. AIDS was considered to be the least understood and most deadly, yet subjects perceived this disease as the one they were least at risk of contracting.

Less knowledge of AIDS and fewer health resources may increase the risk of AIDS among Blacks and Latinos, according to Flaskerud and Nyamathi (1989). In general, according to this study of Black and Latina Womens' AIDS related knowledge, attitudes, and practices, black women had more knowledge of AIDS than Latina women and more positive attitudes. These findings suggest the need for separate, culturally relevant education programs.

Summary

The research studies to date that examined the knowledge and attitudes about AIDS have yielded mixed results. However, for the most part, findings show that

many subjects have minimal knowledge about AIDS and that fear of contagion is a theme throughout those surveyed. Despite the mass media focus on the increasing numbers of AIDS cases and call for education regarding AIDS, many people are still misinformed about AIDS. Working directly with AIDS patients helps our knowledge base, however, "education is our primary defense against AIDS" (Foster, 1987 p. 311). Several studies have shown that AIDS education leads to a more positive attitude toward patients with AIDS (Gordin et al., 1987; Lawrence et al., 1989; Wertz et al., 1987).

A descriptive study by Bowles & Carwein (1988) demonstrated that few schools of nursing have existing guidelines for working with people with AIDS for both student assignment to AIDS clients and students who are HIV antibody positive or diagnosed as having AIDS. In addition, many have no plans to develop guidelines and uncertainty abounds in the resolution of these issues. According to the authors, a survey of 242 NLN accredited Baccalaureate Nursing Schools clearly indicates there is a need for assessment of the attitudes, fears, and knowledge level of students regarding AIDS. This includes the need for assessment of faculty attitudes, fears, and knowledge level of AIDS and treatment of faculty who may be HIV antibody positive or are diagnosed as having AIDS.

Negative attitudes of health care professionals

regarding AIDS prevails. The scant amount of research conducted regarding AIDS reveals a need for addressing knowledge and attitudes about AIDS as a high priority. The AIDS issue concerns health care professionals as well as lay persons in every society. Nursing students knowledge and attitudes about AIDS has been found to be similar to other health care professionals. That is, a lack of knowledge and a negative attitude prevails. The decrease in the number of students entering into the nursing profession has been blamed, in part, on the disease AIDS.

Conceptual Framework

The Health Belief Model is the conceptual framework for this study. The Health Belief Model (HBM) was developed in the early 1950's by Hochbaum, Kegeles, Leventhal, and Rosenstock, as a theoretical framework for explaining the likelihood of individual's undertaking a recommended preventative health action. It was originally tested in a tuberculosis screening program and since then has been widely researched (Becker et al., 1976; Haynes, Sackett, & Taylor, 1976). The constructs of the original model have been empirically tested to examine both preventive and illness behaviors (Becker et al., 1977; Champion, 1984).

The HBM was developed by social psychologists with theories rooted in psychology, sociology and social learning. Many of the HBM studies have been carried out in

these disciplines and pertain to matters of health prevention and promotion. Since nursing is intimately associated in these areas as well as adherence to medical regimens, the HBM is a conceptual tool that can be very useful to identify health care beliefs about AIDS.

Originally the model hypothesized that persons will not seek preventive care unless they have minimal levels of motivation and knowledge, view themselves as vulnerable and the condition threatening, see the interventions as beneficial, and see few difficulties in following the recommended action (Becker, 1974; Mikhail, 1981). The following are the primary concepts of the Health Belief Model as it was first developed (Rosenstock, 1974; 1985; Becker, 1974):

1. perceived susceptibility is the vulnerability to a disease and its consequences.
2. perceived seriousness is the negative impact the disease could have on a person's life.
3. perceived benefits will come as a result of following a set of health recommendations that will reduce the threat or severity of the disease.
4. perceived barriers are the costs that are associated with following the health recommendations are outweighed by the benefits.

The four concepts have been tested individually and in combination as predictors of health related behaviors. In

addition to the four original concepts, Becker (1974) suggested health motivation be used as part of the HBM as it refers to a generalized state of intent that results in behaviors to maintain or improve health. Rosenstock (1985) suggested adding a concept of self-efficacy to the health belief model. The concept of self-efficacy is described as the conviction that a person is capable of carrying out the health recommendation. Self-efficacy was conceptualized in the development of social learning theory by Bandura (1977). The concept of self efficacy, however, was not incorporated into the framework for this study.

Modifying factors involved in the Health Belief Model consist of interpersonal variables which includes demographics, sociopsychological, and structural variables such as knowledge about the disease and prior contact with the disease. In studying maternal influence on preventive behavior, Steele and McBroom (1972) found that level of education of the dominant female in the household correlated highly with the degree of preventive behavior. Level of knowledge depicts events which lead to positive or negative attitudes toward taking recommended preventive health action.

Rosenstock (1985) views the HBM as a comprehensive conceptual framework which attempts to explain patient compliance as well as approaches for changing patient compliance. The HBM has the ability to identify those

areas that may inhibit adherence to a medical regimen.

The HBM suggests that people learn to expect that certain behaviors lead to a valued outcome. These outcomes may be positive or negative. With illness, the value placed on the outcome depends upon the person's perceptions of how a disease will affect the future.

Using the HBM empirically, the concepts have been measured a number of ways. In many studies, only one or two concepts have been examined such as assessing patients' perception of severity of the complications of diabetes (Given, Given, Gallin, & Condon, 1983). Becker & Maiman (1975) focused on the perceived susceptibility to disease, while Brownell, Heckerman, Westlake, Hayes and Monti (1978) focused on barriers and benefits of carrying out a therapeutic regimen. Few studies have measured all the primary concepts (Harris, Linn, Skyler, & Sandifer, 1987).

The Health Belief Model provides a paradigm for exploring the relationship between knowledge and health beliefs taken by individuals in nursing education. The framework for this study suggests that if the nursing student is introduced to facts about the disease AIDS this will change their health care beliefs, that is, their perceived susceptibility, seriousness, benefits, barriers, and health motivation in regard to AIDS. This change will also influence the likelihood of taking preventive action in the use of universal precautions as a benefit in

preventing contracting AIDS. In studying maternal influence on preventive behavior, Steele and McBroom (1972) found that level of education of the dominant female in the household correlated highly with the degree of preventive behavior. Level of knowledge depicts events which lead to positive or negative attitudes toward taking recommended preventive health action.

The Health Belief model encompasses five concepts explaining the rationale for nursing students to practice preventive action when faced with the disease AIDS (see Figure 1). The first factor is the factor of perceived susceptibility to disease X, that is, a student's own estimated subjective probability that he or she will encounter a specific health problem, in this case, AIDS. According to Mikhail (1981), the individual's perception of personal susceptibility to a disease has been found to be positively related to the taking of a wide variety of preventive health actions. Inducing a high perceived severity can occur when the individual is given specific instructions on how to cope with the threat or reduce danger. Therefore, if nursing students are given specific instruction on how severe the disease AIDS is they are more likely to be willing to follow universal precaution procedures.

The second factor is the perceived seriousness of disease X, in this case, AIDS. This can be deduced by the

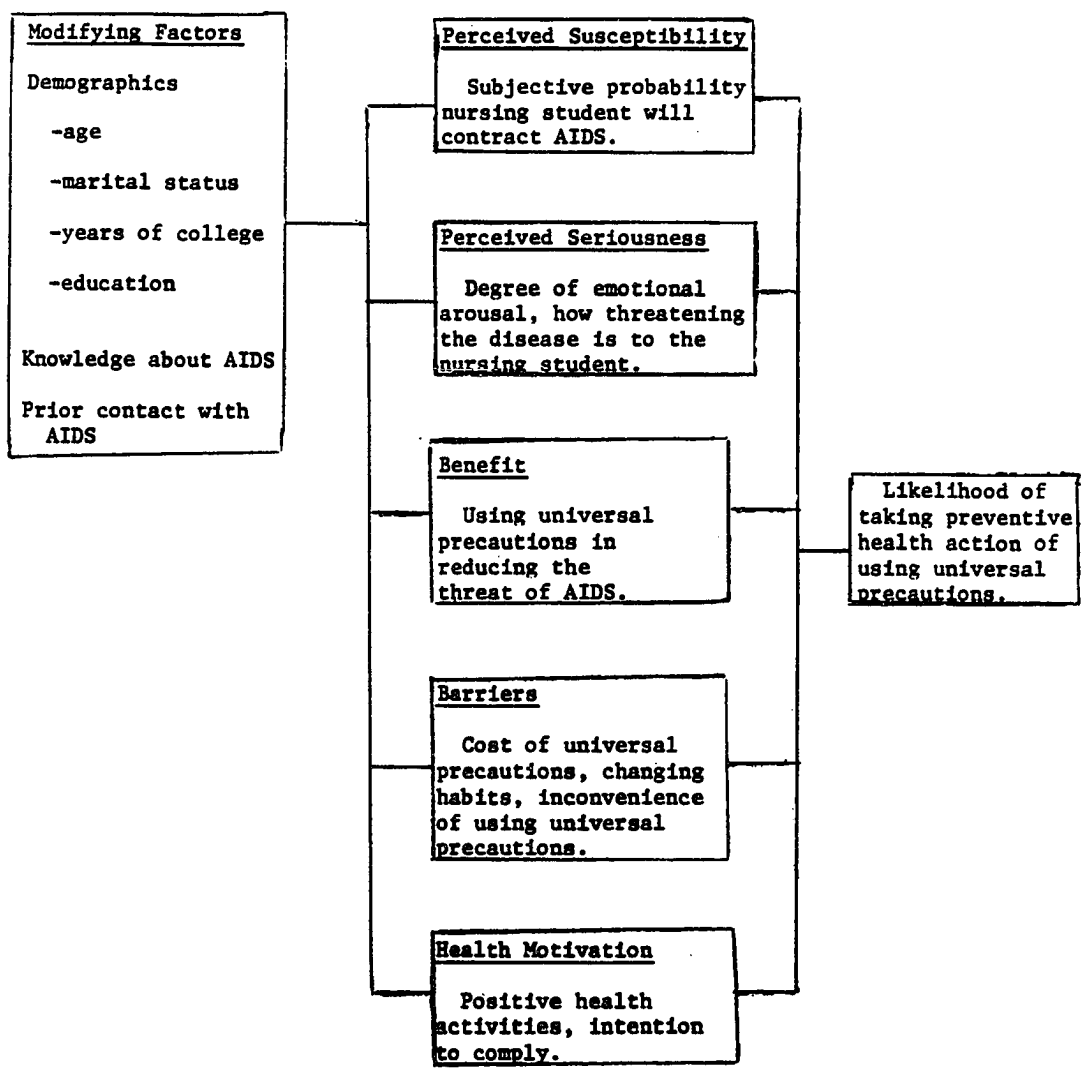


Figure 1

HEALTH BELIEF MODEL ADAPTED FROM
BECKER ET AL., 1974 AND KASL, 1974

degree of emotional arousal that thoughts of AIDS can cause or by the entanglement that a student believes a given health condition would constitute. This may also include the bearing this health problem would have on the student's work, family life, or social relationships and commitments. Perceived seriousness is an important factor in influencing behavior (Aho, 1979).

The third factor is the perceived benefits of the use of universal precautions in preventing contraction of AIDS. That is, beliefs about the effectiveness of recommended preventive actions which appear to be important determinants of health protecting behavior.

Fourth is perceived barriers. Beliefs about the barriers or costs associated with taking an action. An action was thought to be more likely where, in the presence of a threat, in this case contracting AIDS, the use of universal precautions was seen as efficacious and possible at a tolerable cost. Barriers to action in the use of universal precautions include all perceived impediments to its use, cost, inconvenience, and location of equipment. Lastly, the fifth factor, health motivation, is the desire to attain or maintain a positive state of health.

Currently, the implementation of universal precautions has been in effect in most health care settings throughout the country. Universal precautions requires all health-care workers to routinely use appropriate

precautions to prevent skin and mucuous membrane exposure when contact with blood or other body fluids of any patients is anticipated. Gloves, protective eyewear, and gowns are to be worn during certain procedures, requiring extra supplies, and changes in routine, which may be considered to be costly and an inconvenience. Emergency room nurses report that they do not use universal precautions because it takes too much time to don protective equipment and they fear loss of dexterity (CDC, 1987). The annual cost of universal precautions does not reflect the positive effects of universal precautions. The estimated annual budget projection for implementation of universal precautions on a surgical unit is \$48,914.94 (Pobanz, 1989).

Research has supported a significant positive relationship between perceived benefits and preventive behavior (Becker, Drachman, & Kirscht, 1974; Becker et al., 1977; O'Connell, Price, Robert, Jurs, & McKinley, 1985; Rutledge, 1987; Haefner & Kirscht, 1970). In these studies where an attempt was made to measure the effect of perceived barriers on preventive actions, the majority showed a significant relationship, with greater barriers resulting in fewer preventive actions (Pender, 1982). For example, the perceived benefit of the preventive action included in universal precautions of wearing gloves is supported by some research studies

(Korniewicz, Laughon, Butz, & Larson, 1989; Lowe, 1987; Miller, Collier, & Griffith, 1972). The knowledge of this is likely to cause the student nurse to use this preventive health action.

Mikhail (1981) reported that people were more likely to comply with health recommendations when they believed the recommended action was effective in preventing, detecting, or treating the disease and thus reduce its threat to them. Universal precautions is a preventive method of addressing the AIDS issue thus the benefit of its use is not contracting AIDS. The barrier involved in this study is the possible blocks that influence people to engage in performing universal precautions. Inconvenience, cost or changing habits are blocks to using universal precautions and may result in contracting the disease AIDS.

Tirrell and Hart (1980) examined the relationship of health beliefs and knowledge to exercise compliance in patients after a coronary bypass. The findings indicate that the greater the number of perceived barriers, the lower was the level of compliance (1980). Perceived barriers involved in working with the AIDS patient could affect the quality of patient care.

Champion (1987) conducted a study assessing the relationship of breast self-examination to five health belief model variables: susceptibility, seriousness, benefits, barriers, and health motivation. They were

measured by scales previously tested for validity and reliability. Results from multiple regression and discriminant analyses showed that barriers, knowledge, and susceptibility were important variables explaining frequency of breast self-examination.

It has been shown that there are positive associations between attitudes, health beliefs and behavior. On the other hand it has also been shown that attitudes and beliefs are frequently inconsistent with behavior (Green, 1970). Data gleaned from research on attitude behavior consistently supports that attitudes are important keys to understanding behavior. It is agreed by some researchers that the failure of some of the past empirical investigations to support this may be due to a gap between research and theory (Peterson & Dutton, 1975).

Summary

In summary, certain variables are believed to influence taking preventive action. According to the Health Belief Model, health behaviors are more likely to occur if an individual feels susceptible to a specific condition and feels the condition is serious. In addition, the individual must perceive benefits to a specific action while perceiving few barriers. Finally, being concerned about health and feeling a sense of control over health outcomes is related to a specific behavior. Since its development in 1950, the Health Belief Model has been the

basis for research regarding behaviors for the maintenance of health, prevention of disease, and detection of disease in an asymptomatic state (Becker, Drachman, & Kirscht, 1972; Becker et al., 1976; Hersey, Morton, Davis, & Reichgott, 1980; Hochbaum, 1956; Leavitt, 1979). Most studies have supported a relationship between health behaviors and variables included in the Health Belief Model (Janz & Becker, 1984).

Research Hypotheses

Hypothesis one: Nursing students presented with factual information about AIDS have more knowledge about AIDS than nursing students without AIDS instruction.

Hypothesis two: Strength of health care beliefs related to AIDS susceptibility, seriousness, benefits, barriers, and health motivation of student nurses with AIDS instruction differ from those without AIDS instruction.

Definition of Terms

Operational definitions of the Health Belief Model concepts are adapted from Becker et al., (1977) and Rosenstock (1966). AIDS health care beliefs include a set of perceptions a student holds about a) susceptibility to AIDS, b) the seriousness of AIDS on life, c) the benefits of using universal precautions in reducing the threat of AIDS, d) the barrier of performing universal precautions, and e) health motivation (Becker, Drachman, & Kirscht, 1974). AIDS health care beliefs are determined by the AIDS

Health Care Belief Scale.

Perceived susceptibility: an individual's own estimated subjective probability that he or she will contract AIDS.

Perceived seriousness: the degree of emotional arousal created by the thought of the disease AIDS or by how threatening the condition AIDS is to the person.

Perceived benefits: the relative subjective effectiveness of the use of universal precautions in reducing the threat of AIDS.

Perceived barriers: possible blocks that influence a nursing student to engage in performing universal precautions. Barriers are the negative components of an anticipated behavior which is undertaken to prevent disease, maintain health, and cure or lessen undesirable consequences of AIDS. The negative aspects might involve problems such as cost of universal precaution equipment, changing habits, or a need for a new pattern of behavior in performing universal precautions, the inconvenience involved in using universal precautions.

Health motivation: A state of concern about general health matters, which results in positive health activities and willingness to seek and comply with orders that are believed to decrease disease.

AIDS instruction: Information about AIDS instructed in the classroom setting at an associate degree program in

nursing. Thirty minutes of lecture regarding explanation of the AIDS virus, transmission of the AIDS virus, types of HIV infection that exist, testing for AIDS, treatment for AIDS, psychosocial aspects, and legal aspects of AIDS.

AIDS Knowledge: Factual material possessed by the respondent in regard to AIDS presented in lecture material in the classroom at an associate degree nursing program as determined by the scores on the AIDS Knowledge Questionnaire.

Nursing students: Students enrolled in an associate degree program in nursing who are in their second term of the program.

CHAPTER III

METHODOLOGY

Research Design

A quasi-experimental nonequivalent control group pretest posttest design was used (Cook & Campbell, 1979). The students were grouped according to clinical assignments. A questionnaire was used to collect data from nursing students enrolled in a second term nursing course in an associate degree nursing program. The AIDS Knowledge and Health Care Belief Scale were administered to the experimental group before and after AIDS instruction. The experimental group received a lecture regarding AIDS; the control group did not receive a lecture about AIDS until after the research study was completed.

Sample and Setting

The target population for this study was thirty student nurses enrolled in an associate degree nursing program in the Midwest United States. One nursing student failed to take the posttest and therefore was withdrawn from the study. The sample selection was one of convenience consisting of two independent groups of second term nursing students who were willing to participate in this study. The criteria used for the subjects were: enrolled in a second term nursing course, Nursing Care of Adults I, had not had a formal lecture in the nursing curriculum regarding AIDS, and a willingness and consent to participate in the study. The

sample size included twenty nine of thirty nursing students enrolled in Nursing Care of Adults I.

The nursing students were divided into experimental and control groups by clinical assignments which were made at the beginning of the term. Included in the sample were both males and females of various ages, marital status and educational backgrounds. There were eighteen students in the experimental group, eleven in the control group.

In this program, nursing students had taken courses which included: (a) Human Anatomy, Human Physiology, Introductory Psychology, Composition, Introduction to Nursing, and Introduction to the Nursing Role. None of these courses had a formal lecture regarding AIDS. All students had been introduced to universal precautions at the beginning of the first term in the nursing curriculum.

Instruments

The following instruments were used in this study: (a) General Information Sheet, (b) AIDS Knowledge Questionnaire, and (c) AIDS Health Care Belief Scale.

General Information Questionnaire

The first section entitled "General Information" contained demographic information. Items included were: gender, age, education, marital status, and a question regarding the type of education, if any, the students had acquired regarding AIDS. This information was collected to support the equivalency of the two groups

(see Appendix A).

AIDS Knowledge Questionnaire

The second questionnaire, "AIDS Knowledge Questionnaire", contained 38 questions about knowledge of AIDS (see Appendix B). These questions were developed by the researcher using two sources: the "Health Interview Survey Aids Knowledge and Attitudes" from the National Center for Health Statistics developed by Dawson, Cynamon, and Fitti (1987) and, from the "AIDS Action Committee Survey" developed by Wertz, Sorenson, Liebling, Kessler, and Heeren (1987).

In the AIDS Knowledge Questionnaire, for items one through twelve, subjects ranked their level of agreement with each statement as "very likely" (3), "possible but unlikely" (2) to "very unlikely", (1). For items thirteen through twenty one, subjects ranked their level of agreement with each statement as "always necessary", (3) "sometimes necessary", (2) and "rarely necessary", (1). Items 22, 23, 24, were multiple choice questions given a score of 1 for the correct response, and 0 for the incorrect response. Item # 24 was a question related to the subject's evaluation of competency in caring for a patient with AIDS. For items twenty-five through thirty-eight, subjects responded to statements as true or false. The responses were coded with a score of 2 indicating "false" and a score of 1 indicating true. For all these items in the questionnaire, one point was given for each correct response and no points for an

incorrect response. Total possible score range was 0 to 37. The same questionnaire was used for both pretest and posttest.

Status of the reliability and validity for the portion of the knowledge instrument, items #1-24 adapted from Wertz and associates, has not been reported. Likewise, reliability and validity of items # 25-38 adapted from Dawson and associates has not been established. According to Dr. Dawson, "a number of other researchers have used this instrument, and no one has reported any problems with it" (personal communication, 1988). The knowledge questionnaire used by Dawson and associates was a national survey distributed over a five month period. Data were collected from August through December, 1987. Estimates in the five month survey were based on approximately 15,000 persons. Dawson's AIDS questionnaire was designed to provide baseline estimates of public knowledge about attitudes to measure changes in knowledge and attitudes over time. The discussion of reliability and validity will follow under the psychometric analysis section.

AIDS Health Care Belief Scale

Functional properties of the health belief model consisted of five concepts which were measured by an "AIDS Health Care Belief Scale". This scale was adapted from the "Breast Self Examination Scale" which was developed by Victoria Champion (1984). The scale contained 46 statements

regarding health care beliefs about AIDS. This instrument measured beliefs about susceptibility, seriousness, benefits, barriers, and health motivation. The AIDS Health Care Belief Scale included six questions regarding susceptibility, twelve questions about seriousness, six questions pertaining to benefits, ten questions related to barriers, and seven questions related to health motivation. In the AIDS Health Care Beliefs Scale subjects ranked their level of agreement on a six point Likert scale responding to each statement with "strongly agree" (6) "agree" (5) "slightly agree" (4) "slightly disagree" (3), "disagree" (2) and "strongly disagree" (1). Total possible scores of susceptibility range from 6-36, for seriousness 12-72, for benefits 6-36, for barriers 10-66 and for health motivation 7-42 respectively.

In addition to the 41 items which measured the subconstructs of the health belief model, a miscellaneous section, items 42-46 was included. These items were adapted from Wertz and associates (1987). The miscellaneous questions included five AIDS health care belief questions. These items did not fit in a category to be included in the AIDS health beliefs section but were considered to provide vital information in the context of this study. These items were scored with subjects ranking level of agreement on a six point Likert scale responding to each statement with "strongly agree" (6) "agree" (5) "slightly agree" (4) "slightly disagree (3), "disagree" (2) and "strongly

disagree" (1).

In Champion's instrument Cronbach alpha was computed to test internal consistency of the five subscales. Champion reported Cronbach alpha for susceptibility was .78; for seriousness, .78; for benefits, .61; for barriers, .76; and for health motivation, .62. Champion (1984) reported "strong evidence for construct validity by substantiating the independence of five constructs as used in the Health Belief Model" (p. 83).

Psychometric Analysis of Instruments

Using pilot study data, psychometric analysis of the AIDS Knowledge Questionnaire and AIDS Health Care Belief Scale was performed. To evaluate internal consistency of the AIDS Knowledge Questionnaire the Kuder-Richardson formula 20 was used. For the AIDS Health Care Belief Scale, Cronbach's alpha was determined.

Initial reliability coefficients for both the AIDS Knowledge Questionnaire and the AIDS Health Care Belief scale were computed. Items demonstrating low correlations with their respective scales were deleted and internal consistency coefficients were recomputed. When further deletion began to decrease the alpha coefficient, scales were considered to be at maximum reliability. From the total of forty-five knowledge items, seven were rejected due to low correlations with the total score. This left thirty-eight knowledge items in the analysis. The reliability coefficient for internal

consistency for the AIDS knowledge questionnaire was .62.

To establish content validity of the AIDS Knowledge questionnaire, a social worker who worked with AIDS clients in the community and four baccalaureate prepared nurses who worked with AIDS clients in Hospice were asked to complete the questionnaire. In addition, a faculty member with a doctorate in the health sciences field was asked to complete the questionnaire. Based on the answers from these experts the content was examined and correct responses were agreed upon.

From a total of 42 items, 41 items were selected from the Health Care Belief Scale using the same criteria as followed for the knowledge questionnaire. The internal consistency of each of the subscales was evaluated to establish reliability. The reliability coefficients for each of the five subconstructs of the Health Care Belief Scale ranged from .72 to .85 (see Table 1).

The remaining 41 Health Care Belief items of the revised scales were pooled and subjected to factor analysis. A principal component factor technique with iteration was used. The orthogonal rotation of the extracted factors was done by the Varimax procedure. For the factor analyses for this project Kaiser's criterion of eigen values greater than or equal to one was used in delimiting the number of factors in the solution.

Table 1

Internal Consistency for the AIDS Health Care Belief
Subscales (N=112)

Subscale	No. of items	Cronbach Alpha
Susceptibility	6	.79
Seriousness	12	.85
Benefits	6	.72
Barriers	10	.84
Health Motivation	7	.73

A factor loading of .35 for each item was used as an arbitrary criterion. For the purpose of this study, factor analysis was done to examine whether the AIDS Health Care Belief Scale indeed had five factors representing five constructs of the Health Belief Model. Factor analysis confirmed all five factors: a) susceptibility, b) seriousness, c) benefits, d) barriers, and e) health motivation. With the exception of two barrier items, all items related to a specific concept loaded under the respective scales as expected. The two barrier items which loaded under the susceptibility factor were a) I do not understand universal precautions guidelines well, b) I don't know enough about universal precautions to be able to perform it.

Factor loadings ranged from .34 to .79 (see Appendix D).

Procedure

In May, 1989, a pilot study consisting of all students (n=112) officially enrolled in the nursing curriculum in nursing courses other than the one targeted for Fall term 1989, was conducted before the formal research study was initiated. Participation criteria were the same as those used for the research sample. The purpose of the pilot study was to determine the feasibility of the data collection plan and obtain reactions to the instruments being used. Based on the findings from this pilot study, necessary revisions were made. As stated earlier, data from the pilot study were also used to evaluate reliability and validity of the AIDS Knowledge Questionnaire and AIDS Health Care Belief Scale.

In November, 1989, all 30 potential subjects initially met in the classroom to attend a scheduled lecture. Of the 30 available nursing students, one was unable to participate in the study due to illness resulting in a total sample size of 29. At the beginning of class, a brief explanation of the purpose of the study was given (see Appendix E). Subjects were assured verbally and in writing of the anonymity and confidentiality of their responses and that they could withdraw from the study at any time. The (a) General Information Sheet, (b) AIDS Knowledge Questionnaire and (c) AIDS Health Care Belief Scale, were then distributed and completed in the classroom.

The subjects were asked to place the last four digits of their social security number on the questionnaire. The subjects were told verbally that the completion of the questionnaire indicated their consent to participate. This statement was also written in the "General Information" section of the questionnaire. After the questionnaire was completed it was collected. The subjects were asked to leave the classroom as they turned in their questionnaire and to return to the classroom after everyone had completed the questionnaire for further instructions. After the subjects returned to the classroom, those assigned to the same two clinical groups were asked to stay for the lecture on AIDS, the other two groups were asked to leave the classroom.

Two weeks after their lecture on AIDS a posttest using the AIDS Knowledge Questionnaire and AIDS Health Care Belief Scale was again administered at the beginning of class to all nursing students by the same investigator. After the questionnaires were completed, the students who had the AIDS lecture were dismissed. The control group then received the AIDS lecture. The posttest was given to examine if nursing students presented with factual information by lecture about AIDS have more knowledge about AIDS than nursing students without an AIDS lecture; and, to determine if there was a difference in the AIDS health care beliefs held by nursing students before and after instruction about AIDS. The

researcher remained available to answer questions while the subjects completed the questionnaire.

CHAPTER IV

RESULTS

Data Analysis Preparation

In preparation for computer analysis, data were entered into a coding sheet as appeared on the data collection record. Data analysis for this study was performed using descriptive statistics for comparison of the two groups, and analyses to test the research hypotheses.

Demographic Characteristics of Subjects

There were 28 females and one male who participated in the study. The mean age of the total subjects was 26.5 years, the standard deviation was 5.9. The mean number of years of college was 3.5, with a standard deviation of 1.55. There were 22 students without any type of college degree, two students with an associate degree, one student with a bachelor of arts degree, and four students with bachelor of science degrees. For marital status the frequency was calculated. The category "never married" and "not presently married" was collapsed to "not married". There were 10 married and 19 not married participants.

Comparison of the Two Groups in Respect to Demographic Variables

To support the equality of the experimental and control groups the variables of age, years of college, education, marital status, preknowledge and prehealth care beliefs

about AIDS were compared. The t-test was used to compare the two groups with respect to age, years of college, preAIDS knowledge and preAIDS Health Care Beliefs. When the variances of two groups are unequal, results from the t-test with the "separate formula" were used (Munro, Visintainer, & Page, 1986). To evaluate education, Chi square was computed.

The mean and standard deviation of age and years of college attended by the two groups are shown in Table 2.

Table 2

Demographic Characteristics of Experimental and Control Groups

Demographic Characteristics	Experimental (n=18)		Control (n=11)		t	df	p
	M	SD	M	SD			
Age	26.9	6.9	26.0	4.9	.43	27	.674
Years of College	3.6	1.5	3.3	1.6	.49	27	.633

The t-test result shows no significant difference between the groups in mean age, $t(27) = .43$, $p > .05$. The two groups were not significantly different from each other in mean years of college attended, $t(27) = .49$, $p > .05$.

There were a few students from each group with

associate and baccalaureate degrees. There were four students in the experimental group who were married, fourteen who were "never" or "not now" married. There were

Table 3

Socio-demographic Characteristics for Experimental and Control Groups

Demographic Characteristics	Experimental (n=18)	Control (n=11)
<u>Type of Degree^a</u>		
None	15	7
Associate D.	1	1
Bachelors D.	2	3
<u>Marital Status^a</u>		
Married	4	6
Never Married	10	4
Not Now Married	4	1
<u>Classmate Notes^b</u>		
No	16	6
Yes	2	5

a Chi square test was not performed because of small cell size.

b $\chi^2 = 4.4$, (n = 11), p < .05.

six students in the control group who were married, five students who were "never" or "not now" married. These results show no difference between experimental and control subjects on the variables (see Table 3).

Any education the two groups received regarding AIDS before the lecture were reported on ten "information" items. The Chi-square analysis showed no significant differences between groups except on the "getting information about AIDS from classmate notes" item, $X^2 (1, n = 11) = 4.4, p < .05$. In the control group, 45% received information from "classmate notes" even before the experimental group had the lecture, while only 11% of the experimental group reported having done so (see Table 3).

Comparison of the Two Groups With Respect to PreAIDS Knowledge and PreAIDS Health Care Beliefs

Means and standard deviations of AIDS knowledge and AIDS health care beliefs for both experimental and control groups are shown in Table 4. The results of the t-test indicated that the experimental and control groups did not differ significantly on preAIDS knowledge. As shown in Table 4, nursing students already had a substantial amount of AIDS knowledge prior to the instruction. The mean score at pretest for the experimental group was 27.1, the mean score for the control group was 28.2.

Descriptive Statistics for PreAIDS Health Care Beliefs

The means and standard deviations for PreAIDS Health Care Beliefs of the two groups are shown in Table 4. The t-test results indicated no significant difference between groups on all five preAIDS Health Care Beliefs ($p > .05$).

Table 4

Comparison of Experimental and Control Groups With Respect to PreAIDS Knowledge and PreAIDS Health Care Beliefs

Variables	Group				t	p
	Experimental (n=18)		Control (n=11)			
	M	SD	M	SD		
<u>PreAIDS Knowledge</u>	27.1	3.7	28.2	3.2	-.88	.38
<u>PreAIDS H.C. Beliefs</u>						
Susceptibility	12.2	4.8	13.2	7.2	-.43	.67
Seriousness	47.2	9.1	50.6	8.4	-1.02	.31
Benefit	30.6	3.7	29.8	3.7	.59	.56
Barrier	48.7	9.1	48.6	11.6	.03	.97
Health Motivation	25.0	5.1	25.4	6.3	-.20	.84

In summary, the experimental and control groups were homogeneous for all demographic variables examined. The two

groups were also not significantly different from each other with respect to preAIDS knowledge and preAIDS Health Care Beliefs.

Analysis to Test the Research Hypotheses

Hypothesis one and two were tested with Analysis of Covariance (ANCOVA). Test results were considered significant only if the computed alpha level of probability was .05 or less.

Hypothesis One

Hypothesis one: Nursing students presented with factual information about AIDS have more knowledge about AIDS than nursing students without AIDS instruction.

For hypothesis one the pretest score of AIDS knowledge was used as a covariate to control for the effect of this variable on the dependent variable. The ANCOVA result showed that there was no significant difference between the two groups on PostAIDS knowledge after controlling the effect of preAIDS knowledge, $F(1, 26) = 20.876, p > .05$, one tailed (see Table 5). Thus, this research hypothesis was not supported.

Although AIDS knowledge scores of the control group remained the same at posttest, the mean postAIDS knowledge score of the experimental group was greater than the pretest score. The mean posttest score of the experimental group was 13.5, and the posttest score for the control group was 10.8. However, this difference was not

statistically significant, $t(27) = -.85, p = .403$.

Table 5

Analysis of Covariance on Posttest AIDS Knowledge Scores

Source of Variation	df	MS	F	p ^a
Between groups	1	6.419	.733	.200
Covariate	1	182.775	20.876	.000
Within groups	26	8.755		

^aOne tailed test

Hypothesis Two

Hypothesis two: Strength of Health Care Beliefs related to AIDS susceptibility, seriousness, benefits, barriers and health motivation of student nurses with AIDS instruction differ from those without AIDS instruction.

For hypothesis two the pretest score of AIDS health care beliefs was used as a covariate to control for the effect of this variable on the dependent variable, post AIDS health care beliefs. There was no significant difference between the two groups in four of the five health care beliefs at the posttest after controlling the effect of preAIDS beliefs: seriousness, benefits, health motivation, and barriers (see Table 6). However, for the

health care belief construct susceptibility, there was a significant difference ($p < .05$). Thus, the research hypothesis was rejected for seriousness, benefits, health motivation, and barriers but accepted for susceptibility. It should be noted that the prelecture scores of susceptibility for the experimental and control groups were not significantly different from each other, $t(27) = -.43, p > .05$ (Table 4). While the posttest score of the control group showed a decrease of 2.4 from pretest to posttest, the posttest score of susceptibility of the experimental group was increased by 1.3 (see Table 7). Thus, it appears that the difference in the posttest scores between experimental and control groups may be explained partly by the decrease in the susceptibility score of the control group.

Miscellaneous Health Care Beliefs

In addition to examining AIDS health care beliefs, five miscellaneous beliefs about AIDS were studied. For both experimental and control groups these five beliefs did not change significantly from pretest to posttest ($p > .05$) (see Table 8). In terms of Question # 42, "I have sufficient knowledge to protect myself from getting AIDS", 15 (83%) of the experimental and control groups indicated that they have enough knowledge before the AIDS lecture. After the AIDS lecture, these statistics remained the same for both groups (see Table 8). It appears that students

feel they have enough knowledge to protect themselves from AIDS according to the response from Question # 42 and this was not affected by the lecture.

Before the lecture, students in both the experimental and control groups indicated that hospital workers should be required to work with AIDS patients (Question # 43). However, after the lecture, the experimental group was not as strong in this belief with a drop from 12 (67%) who thought they should be required to work with AIDS patients before the lecture to 9 (50%) of the students afterwards. It is important to note that, over the same period of time, their colleagues in the control group dropped from 7 (64%) who indicated that personnel should be required to work with AIDS patients to only 4 (36%) taking this position afterward. However, as noted in Table 8, these changes are not statistically significant ($p > .05$). While the reasons for this change in attitude are not known, it would appear that the lecture may have slowed or moderated the change in the experimental group.

For question # 44, "If I had my choice I would choose to work with people with AIDS in preference to most other types of patients", 13 (72%) of the experimental group and 11 (100%) of the control group on the pretest would not choose to work with people with AIDS in preference to most other types of patients. On the posttest, 11 (61%) of the

Table 6

Analysis of Covariance for AIDS Health Care Belief Items

Source of Variation	df	MS	F	p
<u>Susceptibility</u>				
Between Groups	1	60.960	7.632	.010
Covariate	1	462.130	57.858	.000
Within Groups	26	7.987		
<u>Seriousness</u>				
Between Groups	1	100.478	2.280	.143
Covariate	1	1268.265	28.775	.000
Within Groups	26	44.075		
<u>Benefit</u>				
Between Groups	1	0.003	0.001	.981
Covariate	1	152.987	30.701	.000
Within Groups	26	4.983		
<u>Barrier</u>				
Between Groups	1	12.187	0.363	.552
Covariate	1	1635.320	48.678	.000
Within Groups	26	33.595		
<u>Motivation</u>				
Between Groups	1	0.446	0.074	.788
Covariate	1	812.553	133.915	.000
Within Groups	26	6.068		

Table 7

Mean and Standard Deviation of AIDS Health Care Beliefs by
Experimental (n=18) and Control Groups (n=11)

	<u>Pretest</u>		<u>Posttest</u>		<u>Adjusted</u>
	M	SD	M	SD	<u>Posttest</u> M
<u>Susceptibility</u>					
Experimental	12.2	4.8	13.5	5.3	13.30
Control	13.2	7.2	10.8	4.5	10.35
<u>Seriousness</u>					
Experimental	47.2	9.1	49.5	9.3	50.58
Control	50.6	8.4	48.3	10.6	46.68
<u>Benefit</u>					
Experimental	30.6	3.7	31.5	3.3	31.35
Control	29.8	3.7	31.0	3.3	31.33
<u>Barrier</u>					
Experimental	48.7	9.1	48.5	9.3	48.46
Control	48.6	11.6	49.7	10.1	49.80
<u>Health Motivation</u>					
Experimental	25.0	5.1	25.7	5.2	25.89
Control	25.4	6.3	25.9	7.0	25.63

experimental group and 9 (82%) of the control group would not choose to work with an AIDS patient, a slight improvement in attitude in both groups however, again, not statistically significant.

For question # 45, "If I got AIDS I would worry that people would think I am homosexual", 12 (67%) of the experimental group and 8 (73%) of the control group on the pretest would not worry that if they contracted AIDS people would think they were homosexual. There was little change in results on the posttest, 13 (72%) of the experimental group and 7 (64%) of the control group disagreed with this statement.

For question # 46, "I am morally offended by AIDS patients", 17 (94%) of the experimental group and 9 (82%) of the control group were not morally offended by AIDS patients at the pretest. On the posttest, 18 (100%) of the experimental group and 9 (82%) of the control group were not morally offended by AIDS patients.

For question # 24, "Do you feel professionally competent to take care of a person with AIDS", the experimental group 12 (67%) did not feel professionally competent to care for an AIDS patient prior to AIDS instruction while only 4 (36%) in the control group did not feel competent but the difference was not statistically significant (see Table 9). On the posttest, however, only 8 (44%) of the experimental group did not feel competent to

Table 8

Frequency of Two Groups Responding to Five Miscellaneous Health Care Belief Items on Pretest and Posttest

Items	Experimental Group (n=18)				Control Group (n=11)			
	Pre	Post	χ^2	p	Pre	Post	χ^2	p
#42. I have sufficient knowledge to protect myself from getting AIDS.								
AGREE	15 (83%)	15 (83%)	.01	.91	9 (82%)	9 (82%)	.01	.91
DISAGREE	3 (17%)	3 (17%)			2 (18%)	2 (18%)		
#43. Hospital workers should not be required to work with AIDS patients.								
AGREE	6 (33%)	9 (50%)	.02	.86	4 (36%)	7 (64%)	.51	.47
DISAGREE	12 (67%)	9 (50%)			7 (64%)	4 (36%)		
#44. If I had my choice I would choose to work with AIDS patients in preference to most other types of patients.								
AGREE	5 (28%)	7 (39%)	3.6	.05	0 (0%)	2 (18%)	1.36	.24
DISAGREE	13 (72%)	11 (61%)			11 (100%)	9 (82%)		
#45. If I got AIDS I would worry that people would think I am a homosexual.								
AGREE	6 (33%)	5 (28%)	.11	.73	3 (27%)	4 (36%)	.23	.62
DISAGREE	12 (67%)	13 (72%)			8 (73%)	7 (64%)		
#46. I am morally offended by AIDS patients.								
AGREE	1 (6%)	0 (0%)	1.17	.27	2 (18%)	2 (18%)	3.5	.06
DISAGREE	17 (94%)	18 (100%)			9 (82%)	9 (82%)		

care for an AIDS patient. The control group statistics remained the same.

Table 9

Competency in Caring for an AIDS Patient

	<u>Pretest</u>		<u>Posttest</u>	
	NO	YES	NO	YES
Experimental Group (n=18)	67%	33%	44%	56%
Control Group (n=11)	36%	64%	36%	64%
	X ² = 2.53 p=.11		X ² =.183 p=.67	

Summary

This study was designed to provide quantitative data regarding nursing students' knowledge and health care beliefs about AIDS. Even though randomization was not possible, the two groups were homogeneous in demographic characteristics, preknowledge, and prehealth care beliefs.

Hypothesis one was not supported. The two groups were not significantly different on AIDS knowledge after a lecture on AIDS. For hypothesis two, there were no significant differences between the two groups in four of five health care beliefs at posttest: seriousness, benefits, barriers, and health motivation. The two groups differed in the subconcept of susceptibility. It appears that the post susceptibility score difference between the

two groups is partly explained by the decrease in the susceptibility scores of the control group from pretest to posttest.

CHAPTER V

DISCUSSION/IMPLICATIONS/CONCLUSIONS

Discussion

This study was designed to determine whether theoretical content on AIDS had a significant effect on student nurses' knowledge and health care beliefs about the disease AIDS. Findings of this study revealed that there was no significant increase in knowledge after the lecture regarding AIDS.

Although it was reasonable to expect that the lecture about AIDS would increase knowledge and decrease fears, these expectations were not supported by the data. Even though the mean postAIDS knowledge score of the experimental group was greater than the pretest score, the difference was not statistically significant. On the other hand, the AIDS knowledge scores of the control group remained the same at posttest. However, mean scores of the AIDS Knowledge pretest for both groups were already high. It appears that a one-half hour lecture on AIDS did not add to what the students had already learned. Perhaps the lecture gave them a repeat of information already known acquiring nothing new to significantly change their knowledge. Maybe the lecture was not adequately stimulating compared to what is available in the media. Perhaps the 8:00 a.m. time of the day for the lecture

aroused resentment factors that influenced students to ignore any information. These results underscore the importance of providing education for nursing students focused on managing their fears and concerns and at the same time offering guidance on nursing care practices.

It is difficult to compare findings from other studies with those from this study because of the differences in subject characteristics, sample size, instruments used and data collection time. For example, Wertz et al. (1987) used instruments with unknown reliability and validity in their study, whereas the AIDS Health Care Belief instrument used in this study had acceptable reliability and validity. The AIDS knowledge base is constantly being revised. This may be a cause of confusion among health professionals and nursing students.

In other findings in the literature (Wertz, et al., 1987; Lawrence et al., 1989) student test scores showed improvement after education on AIDS but scores were lower at the pretest. In this research study, at pretest, students scored between 70% and 73% on the knowledge test in the experimental and control groups respectively. After the lecture both groups students scored 74% on the knowledge test. The pretest scores indicated that the students already had knowledge about AIDS with little room for improvement. Maybe the students were bored, or, maybe fear blocked data acquisition. Perhaps beliefs and

knowledge about AIDS are too entangled. Perhaps the groups were already at peak knowledge, or maybe they already had the information of what was contained in the lecture about AIDS. The two groups were also not significantly different with respect to their beliefs on seriousness, benefits, barriers, and health motivation with the exception of the subconstruct of susceptibility. The experimental group reported the same susceptibility level at pretest and posttest. The control group showed a drop in susceptibility over the same period of time. Since the pretest scores were not different as shown by the t-test, the difference here was probably due to the drop in perceived susceptibility scores in the control group (see Table 7). Also, the experimental group did not feel that they knew practices to help protect themselves from getting AIDS as seen in the "susceptibility" results. Feeling more susceptible to getting AIDS may be consistent with the findings of Gordin (1987), that suboptimal behavior and attitudes may be caused by inadequate knowledge. Other reports (Lawrence et al., 1989; Flaskerud et al., 1989) found education to provide a change in attitudes. Except for the construct susceptibility, results of this study do not support the change in attitude factor.

The control group indicated that they were less susceptible to AIDS at posttest than at pretest meaning

that they did not feel they were as likely to contract AIDS whereas the experimental group showed a slight increase in susceptibility after the lecture, meaning they felt they were more likely to contract AIDS. The difference in the posttest scores between the two groups can be partly explained by the decrease in the susceptibility score of the control group from pretest to posttest. It is not clear why the control group's belief in their susceptibility changed posttest. One possible conjecture is that, without special attention, ongoing nursing education naturally increases the student's sense of "being safe" from disease.

In addition to studying the five Health Care Beliefs, this study also examined five miscellaneous items. The miscellaneous health care beliefs showed no significant differences between experimental and control groups.

Before the lecture, there was a higher percentage of both the experimental and control groups who thought hospital workers should be required to work with AIDS patients as compared to after the lecture. The drop in both groups may be due to announcements going on in the media in Fall, 1989. For example, the news program "60 Minutes" aired a segment titled "AIDS and Dr. Day" on September 24, 1989, just a few weeks prior to data collection. Dr. Day is the physician famous for wearing a space suit every time she operates to protect herself from

AIDS (CBS News, 1989). Students in the experimental group (94%) claimed to get their AIDS information from television, while all of the control group (100%) claimed to get their information this way. Also, at prelecture, 46% of the control group had used classmate notes (#43) as a source of information about AIDS. Perhaps these notes from previous nursing classes affected their response to this item.

Before the lecture, 94% of the experimental group and 82% of the control group were not morally offended by AIDS patients. After the lecture, 100% of the experimental group were not offended by AIDS patients, while the control group percentage remained the same. Perhaps some sensitivity to AIDS patients evolved as a result of the lecture material. However, with such a small sample size it is difficult to evaluate.

One of the tasks in this study was to develop AIDS Knowledge and Health Care Belief instruments. The belief instrument performed as expected. The reliability of the instrument was supported. The validity of the instrument was supported and matches the validity information of the source instrument.

Limitations and Strengths of the Research Design

The threat of history is a limitation in this research study. The knowledge questionnaire was comprised of information that was currently known about AIDS and

disseminated in the literature in the Fall of 1989. There is new information about AIDS each day providing constant changes in AIDS knowledge. A brochure containing a message regarding AIDS mailed to every citizen in the United States was released by the Surgeon General in June, 1988. This brochure contained information on how AIDS is acquired, risk behaviors, preventive behaviors, cure information, AIDS testing, pregnancy and AIDS, drugs and AIDS and helping people with AIDS. A six question quiz with answers provided was available at the end of the discussion regarding AIDS. Because questions on this quiz were similar to questions asked in this study, this information is considered to be a major threat. In addition, information about AIDS were available via the mass media as well as in professional journals.

Threats affecting the accuracy of results of the posttest regarding knowledge and beliefs could be: a) that a student attended additional educational seminars about AIDS, and/or was exposed to a relative or friend who developed AIDS before or after they were in nursing school, b) because of the timeliness of the AIDS issue, knowledge that might have been current six months ago may no longer be accurate today, and c) the study needs to be viewed as a cross-section of what was known about AIDS on the day the research was completed.

The selection threat to internal validity of the

research design results from pre-treatment differences between experimental and control groups. However, in this study, preAIDS knowledge and preAIDS health care beliefs of two groups were compared to assess the selection threat. Results showed they were homogenous with respect to preAIDS knowledge and preAIDS health care beliefs.

Psychosocial variables such as health care beliefs can be subject to the influence of individual characteristics such as gender, marital status, age, and educational status. The life experiences of the nursing students are varied. This may have an effect on the responses of subjects. Demographic data were collected to support the equivalency of the two groups.

The effects of taking a pretest upon the scores of a posttest are known as testing effects. The participants in this study were to be tested and retested utilizing the same instruments after only a two week duration. Therefore, the participants could remember the questions and/or their responses. There was a potential for attrition of the participants in this study due to loss of interest, illness, etc., but only one student dropped out of the study due to illness. However, it is difficult to generalize results with a sample this small.

Other threats to the internal validity of this research design may involve the supposition that student nurses' health care beliefs about AIDS may be independent of any

education they had in the classroom. Nursing students are typically anxious about their impending responsibilities and this anxiety could affect the responses to either knowledge or health care beliefs unfavorably. The sample was restricted to one nursing program in the Midwest. Furthermore, because of the small sample size interpretation of the data must be taken with caution.

Strengths of this study include the fact that a pilot study with a large number of students (n=112) was conducted and reliability and validity of the instrument was tested. Although randomization was not possible, a number of extraneous variables were controlled by testing homogeneity of groups with respect to demographic variables, preknowledge and prehealth care beliefs.

Implications

This study has offered insights into the knowledge and health beliefs of a select group of nursing students about AIDS. However, it has also raised issues and questions that need further clarification. The students' level of knowledge about AIDS after instruction should be of concern to nursing faculty. This concern should be considered in future research. The lecture given about AIDS did not have the effect that was expected, that is, students would know more about AIDS after the lecture than before the lecture. Perhaps given the media attention to AIDS in this country students prefer to use it as a resource. Research

developments, setbacks, and breakthroughs are being reported on a regular basis and perhaps this proves to be more exciting to student learning than in a classroom setting. Since a simple presentation of information in a group teaching session was not effective, new and innovative approaches must be developed. Whether misfounded knowledge and beliefs result from fear, despair, pre-existing bias or inaccurate information, changing beliefs must become an ongoing effort.

Efforts in teaching must involve pre-lecture assessment of a particular group's needs, beliefs, knowledge base, cultural orientation, attitudinal structure and current patient care practices. Discussion groups may need to be implemented as another method of student nurse education. Preferably AIDS education should not be provided in isolation but as part of a teaching plan to instruct students about communicable diseases in general. Ideally, formal teaching should be supplemented by individual or group counseling and support sessions where confidentiality is strictly mandated. Perhaps this type of approach could take place in a communication skills class as part of the nursing curriculum. It is important for nursing faculty to recognize the necessity of evaluating the knowledge and beliefs of their students in an effort to prevent the rendering of poor care to an already beleaguered patient population. Instructors must keep

abreast of current development about AIDS and be provided with accurate and comprehensive sources of information to overcome misconceptions about AIDS.

There is concern among some nurse educators that negative attitudes about AIDS are having a negative impact on nursing student recruitment and retention. An informal study conducted by Ingram (1988) verified this concern. However, the study conducted by Lawrence et al., (1989) clearly showed that nursing students had positive attitudes toward AIDS and patients with AIDS. Therefore this concern is questionable and needs further research.

The increasing incidence of AIDS will place greater and more complex demands upon the nursing profession in the immediate future. Providing relevant and comprehensive education to nursing students and inservice education to health care personnel will help dispell fears and increase staff coping mechanisms. Stressing the use of universal precautions as a safety mechanism for infection control in the health care setting is of major importance for quality nursing care.

In considering future research, the generalizability of the findings in this study must be determined. Sampling across various nursing programs in different geographical locations is indicated. Replication of the study in similar settings projecting a larger sample of subjects who are randomly selected is recommended. Smaller samples such

as used in this research, tend to produce less accurate estimates. The larger the sample, the more representatives of the population it is likely to be (Polit et al., 1987). Research should be conducted on nursing students at different levels throughout their curriculum should be studied. Studying these students before they enter nursing school, at their halfway point, and when they complete their nursing education would be appropriate. The students' religious beliefs may also account for some of the variance in health care beliefs. Perhaps these data need to be included in the demographic information. A study of nursing faculty knowledge and health care beliefs about AIDS is also needed.

The experimental group felt more professionally competent to care for an AIDS patient after the lecture. However the results do not indicate that an increase in knowledge had anything to do with this. This study supported one conducted by Wertz et al. (1987) in which 79% of the group at posttest showed an increase in perceived competency in caring for AIDS patients. This study showed a trend in the same direction. Of the students in this research study, 6 (33%) of the experimental group felt competent to care for a person with AIDS before the lecture, while 10 (56%) felt competent after the lecture. In the control group, 7 (64%) felt competent to care for an AIDS patient, this percentage

remained the same pre and posttest.

Conclusions

While study results are generalizable to the sample only, the data suggest that nursing students lack sufficient knowledge concerning AIDS. The results clearly indicate the need for continued investigation of these issues, particularly as new information becomes available about AIDS. There is certainly a need for assessment of the attitudes, fears, and knowledge level of nursing students of AIDS. Nursing schools need to strive to provide more current, in depth information on this health topic. This should assure accuracy of information regarding AIDS received by the students from the mass media. Though this information may not necessarily be incorrect, it is frequently superficial and is inadequate to be nursing school students only source. Innovative teaching methods should be at the forefront in getting information across regarding AIDS.

Several other concerns have come to light as a result of this study, including the need for assessment of faculty attitudes, beliefs, and knowledge level of AIDS; the concern for stricter adherence to universal precaution guidelines; and, in addition, faculty in all nursing programs should help students deal with the ethical and moral issues involved in providing care to patients with an illness that is contagious, socially isolating, and

incurable. Perhaps a needs assessment of student nurses before teaching about AIDS needs to be conducted.

Because there are several factors that make AIDS unique among terminal illnesses, that is, it is contagious, it is sexually transmitted and it is frequently associated with homosexuality and intravenous drug use. AIDS is capable of generating strong emotional reactions in every health care profession. It has an impact on physicians, dentists, and nursing. In addition, it affects all people in every society worldwide. The concern for children born with AIDS, wives of hemophiliacs, and the gay population all surface as topics needing attention as a result of this disease.

In view of the gravity of the AIDS illness and the demanding level of patient care it requires, it is essential that both the educational and emotional needs of health care providers caring for patients with AIDS are addressed and interventions are identified that will positively impact quality nursing care. Biased perceptions on the part of medical personnel, family members, and acquaintances can seriously lower the quality of care. Additional research in this area needs to be conducted. Sampling across various nursing programs in different geographical locations is indicated to assist in promoting positive nurse-patient relationships throughout the country.

As the AIDS epidemic continues and the care of AIDS patients spreads from a few concentrated areas to the mainstream of the medical care system, approaches to education must evolve. Whether misfounded beliefs about AIDS result from fear, despair, pre-existing bias or inaccurate information, changing these beliefs will be a labor-intensive, ongoing effort.

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APPENDICES

APPENDIX A

CODE # _____

Date _____

GENERAL INFORMATION

I would first like to ask you some general questions, please circle the number in each question that pertains to you. Please choose only one response. Please complete all items. Your completion of this questionnaire indicates your consent to participate.

1. Gender

- 1. Male
- 2. Female

2. Write your age at your last birthday _____.

3. Please fill in the number of years you have attended college

_____. Please list any degrees you have earned _____.

4. Marital Status

- 1. married
- 2. never married
- 3. not presently married

5. Have you ever had any education about AIDS? 1. yes 2. no

If yes, what type of education concerning AIDS did you have?

Please check as many items as are appropriate.

- | | | | | | | | | | |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Surgeon
General's
Report | TV | Radio | Formal
Course | Lecture | Seminar | Newspaper | Magazine | Classmate
Notes | Other |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

APPENDIX B

CODE # _____

AIDS KNOWLEDGE QUESTIONNAIRE

AIDS, Acquired Immune Deficiency Syndrome, is an epidemic that is a major health issue. Its impact on society is profound. We are fighting a disease that has already afflicted thousands of people.

I am going to ask you some questions concerning your knowledge about AIDS. Please place a check mark under the column of your choice for questions 1-12. Please answer all questions.

Given what you know about AIDS, how likely is it that AIDS can be transmitted by the following IF NO PRECAUTIONS ARE USED when caring for an AIDS client?

	very likely 3	possible but unlikely 2	very unlikely 1
1. sneezing, coughing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. emptying bedpans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. touching equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. cleaning vomitus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. shaking hands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. sharing coffee cups or eating utensils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. sitting on toilet seats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. touching bedsheets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. doing laundry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. touching doorknobs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. giving mouth to mouth CPR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. being in the same room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Given what you know about AIDS, how necessary do you think the following practices are for preventing the transmission of AIDS? Please answer all questions. Please place a check mark in the column of your choice:

	always necessary 3	sometimes necessary 2	rarely necessary 1
13. using blood precautions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. wearing masks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. wearing gloves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. wearing shoe protectors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. wearing double gloves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. wearing protective eyewear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. handwashing after contact with the patient who has AIDS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. special handling of body fluids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. quarantine of the patient's room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please choose one answer for each of the following questions, 22-24, circling the number that pertains to your response. Please answer all questions.

22. In using universal precautions in a health setting, needles:

1. may be reused.
2. may be safely recapped.
3. should always be discarded, without recapping, immediately after use.
4. should be purposely bent or broken by hand.

23. In caring for a person with AIDS, gloves are necessary to protect:

1. the care provider
2. the patient with AIDS
3. both the patient and provider
4. not necessary

24. Do you feel professionally competent to take care of a person with AIDS?

- 1. yes
- 2. no

After you have read each statement, indicate whether you think the statement is true, or false. For items 25 through 38 place a check mark in the column of your choice. Please respond to all questions.

	true	false
	1	2
25. AIDS is a disease caused by a virus	<input type="checkbox"/>	<input type="checkbox"/>
26. AIDS can cripple the body's natural protection against disease.	<input type="checkbox"/>	<input type="checkbox"/>
27. AIDS is especially common in older people.	<input type="checkbox"/>	<input type="checkbox"/>
28. AIDS leads to death.	<input type="checkbox"/>	<input type="checkbox"/>
29. You can tell if people have AIDS just by looking at them.	<input type="checkbox"/>	<input type="checkbox"/>
30. A positive test for HIV (Human Immunodeficiency V.) means that a person has or will soon have AIDS.	<input type="checkbox"/>	<input type="checkbox"/>
31. ANY person with AIDS can pass it on to someone else through sexual intercourse.	<input type="checkbox"/>	<input type="checkbox"/>
32. A pregnant woman who has AIDS can give AIDS to her baby.	<input type="checkbox"/>	<input type="checkbox"/>
33. There is a vaccine available to the public that protects a person from getting AIDS.	<input type="checkbox"/>	<input type="checkbox"/>

true
1

false
2

- | | | |
|--|--------------------------|--------------------------|
| 34. There is no cure for AIDS at present. | <input type="checkbox"/> | <input type="checkbox"/> |
| 35. You can get AIDS from eating in a restaurant where the cook has AIDS. | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. You can get AIDS from sharing plates, forks, or glasses with someone who has AIDS. | <input type="checkbox"/> | <input type="checkbox"/> |
| 37. You can get AIDS from using public toilets. | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. You can get AIDS from attending school with a person who has AIDS. | <input type="checkbox"/> | <input type="checkbox"/> |

APPENDIX C

CODE # _____

AIDS HEALTH CARE BELIEF SCALE

The next group of questions relate to health care beliefs about AIDS. There are no "right" or "wrong" answers. Everyone has different experiences which will influence their beliefs. We need the answer which best explains your beliefs. Please check the item of your choice in the box provided. Please answer all questions.

	Strongly Agree 6	Agree 5	Slightly Agree 4	Slightly Disagree 3	Disagree 2	Strongly Disagree 1
1. My chances of getting AIDS are great.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. My physical health makes it more likely that I will get AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel that my chances of getting AIDS in the future are good.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I worry a lot about getting AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Within the next year I will get AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Because of my lifestyle, there is an increased chance of me contracting the disease AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. The thought of AIDS scares me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. When I think about AIDS I feel nauseous.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. If I had AIDS my career would be endangered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. When I think about AIDS my heart beats faster.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. AIDS would endanger my marriage (or significant relationship).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. AIDS is a hopeless disease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. My feelings about myself would change if I got AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
	6	5	4	3	2	1
14. I am afraid to even think about AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. My financial security would be endangered if I got AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Problems I would experience from AIDS would last a long time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. If I got AIDS it would be more serious than other diseases.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. If I got AIDS, my whole life would change.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Knowing how to perform universal precautions prevents future problems for me in contracting the disease AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I have a lot to gain by using universal precaution procedures in my nursing care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. The effective use of universal precautions can help me from securing the disease AIDS in my nursing care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. I will not be anxious about contracting AIDS if I use universal precaution procedures in my nursing care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. If I practice the use of universal precautions in my nursing care, I will not get AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. I will be better off by using universal precaution procedures in my nursing care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Practicing universal precautions interferes with the daily routine in my nursing care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
	6	5	4	3	2	1
26. Equipment I would need to use universal precautions is in an inconvenient location.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. It agitates me to use universal precautions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Using universal precautions in my nursing care is time consuming.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Following the protocol for universal precautions can be frustrating.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Following universal precaution guidelines requires starting a new practice, which is difficult.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. I am afraid I would not always be able to perform universal precautions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. The use of universal precautions is too expensive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. I don't know enough about universal precautions to be able to perform it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. I do not understand universal precaution guidelines.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. I eat a well-balanced diet.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. I always follow medical orders because I believe they will benefit my state of health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. I frequently do things to improve my health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
	6	5	4	3	2	1
38. I search for new information related to my health.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. I have the recommended yearly physical exams in addition to visits related to illness.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. I have the recommended periodic dental exams in addition to visits for a specific problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. I exercise regularly--at least three times a week.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. I have sufficient knowledge to protect myself from getting AIDS.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Hospital workers should not be required to work with AIDS patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. If I had a choice I would choose to work with people with AIDS in preference to most other types of patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. If I got AIDS I would worry that people would think I am a homosexual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46. I am morally offended by AIDS patients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please check to make sure that all items in the knowledge questionnaire and AIDS health belief scale are completed.

Thank you very much for your assistance.

APPENDIX D

Factor Scores for the AIDS Health Care Belief Scale

Items	Loading
<u>Factor 1 - Seriousness</u>	
If I got AIDS, my whole life would change.	.79
If I got AIDS it would be more serious than other diseases.	.72
The thought of AIDS scares me.	.62
Problems I would experience from AIDS would last a long time.	.62
My financial security would be endangered if I got AIDS.	.64
My feelings about myself would change if I got AIDS.	.64
I am afraid to even think about AIDS.	.59
AIDS would endanger my marriage (or significant relationship).	.59
When I think about AIDS my heart beats faster.	.59
If I had AIDS my career would be endangered.	.58
When I think about AIDS I feel nauseous.	.53
AIDS is a hopeless disease.	.51
<u>Factor 2 - Barrier</u>	
Following the protocol for universal precautions can be frustrating.	.79
Following universal precaution guidelines requires starting a new practice, which is difficult.	.78
Using universal precautions in my nursing care is time consuming.	.77
It agitates me to use universal precautions.	.76
The use of universal precautions is too expensive.	.64
Practicing universal precautions interferes with the daily routine in my nursing care.	.61
Equipment I would need to use universal precautions is in an inconvenient location.	.56
I am afraid I would not always be able to perform universal precautions.	.46

Factor Scores for the Health Care Belief Subscales
(continued)

Items	Loading
<u>Factor 3 - Susceptibility</u>	
I feel that my chances of getting AIDS in the future are good.	.78
I worry a lot about getting AIDS.	.70
Within the next year I will get AIDS.	.67
My chances of getting AIDS are great.	.63
Because of my lifestyle, there is an increased chance of me contracting the disease AIDS.	.63
My physical health makes it more likely that I will get AIDS.	.61
I do not understand universal precaution guidelines well.	.38
I don't know enough about universal precautions to be able to perform it.	.34
<u>Factor 4 - Health Motivation</u>	
I frequently do things to improve my health.	.73
I search for new information related to my health.	.65
I have the recommended yearly physical exams in addition to visits related to illness.	.65
I eat a well balanced diet.	.62
I exercise regularly--at least three times a week.	.62
I have the recommended periodic dental exams in addition to visits for a specific problem.	.56
I always follow medical orders because I believe they will benefit my state of health.	.50

Factor Scores for the Health Care Belief Subscales
(continued)

Item	Loading
------	---------

Factor 5 - Benefit

The effective use of universal precautions can help me from securing the disease AIDS in my nursing care.	.72
I have a lot to gain by using universal precaution procedures in my nursing care.	.70
I will be better off by using universal precaution procedures in my nursing care.	.67
If I practice the use of universal precautions in my nursing care, I will not get AIDS.	.63
I will not be anxious about contracting AIDS if I use universal precaution procedures in my nursing care.	.62
Knowing how to perform universal precautions prevents future problems for me in contracting the disease AIDS.	.45

(N=112)

APPENDIX E

VERBAL SCRIPT

The purpose of this research study is to investigate nursing student's knowledge and health care beliefs about AIDS. The procedure to which you will be subjected is response to a questionnaire consisting of knowledge and health care beliefs about AIDS. Responses in no way affects your status as a student. Any inquiries concerning the research procedure will be answered by the researcher.

There are no risks of participation in this study. The contribution you are making in response to this questionnaire will assist educators to assess learning needs of students about AIDS as well as assist in providing quality care to AIDS victims.

You have been selected to be involved in this research project by virtue of the fact that you are a nursing student. Confidentiality and anonymity will be maintained in this study. That is, no individual name will be identified, only group data will be used for summarizing the results of the study.

Your completion of the questionnaire indicates your consent to participate. You are free to withdraw consent and to discontinue participation in this investigation at any time.

Thank you for your participation in this study.

APPENDIX F

B O S T O N U N I V E R S I T Y M E D I C A L C E N T E R
BOSTON UNIVERSITY SCHOOL OF MEDICINE SCHOOL OF PUBLIC HEALTH • THE UNIVERSITY HOSPITAL • BOSTON UNIVERSITY GOLDMAN SCHOOL OF GRADUATE DENTISTRY



Boston University
School of
Public Health
in the School of Medicine

Health Services
Section
80 East Concord Street
Boston, Massachusetts
02118-2394
617 638-5042

July 15, 1988

Dear Catherine Ead:

I am enclosing copies of the pre and post-
questionnaires that we used for health care providers.
You have my permission to use the questionnaires
in whole or in part, provided that I and my
co-authors are credited in any publications that
may result.

Sincerely,

[Redacted Signature] (PhD)

Research Professor

APPENDIX G



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Center for Health Statistics
Centers for Disease Control
3700 East-West Highway
Hyattsville, MD 20782

April 7, 1988

Catherine Earl, RN
1707 Stoney Point
Lansing, Michigan 48917

Dear Ms. Earl:

I am enclosing a copy of our AIDS questionnaire which you are welcome to use or adapt for your research. A number of other researchers have used this instrument, and no one has reported any problems with it. We have not attempted to test its reliability or validity, in part because of time constraints and also because it is difficult to do so with knowledge and attitude data.

The demographic items on the cover page of the questionnaire were transferred by our interviewers from questions in earlier sections of the Health Interview Survey. You will need to develop your own questions for any background data such as these that you may want to collect.

Good luck with your research. I would be very interested in seeing a copy of the results.

Sincerely yours,

[Redacted Signature]

Deborah A. Dawson, Ph.D.
Health Statistician
Illness and Disability Statistics Branch
Division of Health Interview Statistics

Enclosure

APPENDIX H



INDIANA UNIVERSITY

610 Barnhill Drive
Indianapolis, Indiana 46223

SCHOOL OF NURSING


September 12, 1988

Catherine E. Earl
1707 Stoney Point
Lansing, Michigan 48917

Dear Ms. Earl,

You certainly have my permission to use instruments developed in the Health Belief Model for your study in the fall of 1988. My only requirement is that you cite my work and send me a copy of the completed results. Dr. Kim, I am sure, has a copy of this instrument as do one or two of her other students. If you need further help please do not hesitate to call me.

Sincerely,


Victoria Champion, R.N.; D.N.S.
Associate Professor

VC:dg