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

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

By

Suzanne M. Nahan

A THESIS

**Submitted to
Grand Valley State University
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ABSTRACT

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

By

Suzanne M. Nahan

The purpose of this study was to examine the effects of AIDS education on knowledge and health care beliefs of freshman nursing students. It was hypothesized that freshman nursing students presented with AIDS instruction would have more AIDS knowledge than freshman student nurses without AIDS instruction. In addition, it was hypothesized that the strength of health care beliefs related to AIDS susceptibility, seriousness, benefits, barriers and health motivation of freshman nursing students with AIDS instruction would differ from those without AIDS instruction.

A quasi-experimental control group pretest/posttest design was used. The sample consisted of 50 freshman student nurses enrolled in a diploma nursing program in the midwest United States. A demographic assessment tool, an AIDS Knowledge Questionnaire, and AIDS Health Care Belief Scale were used to collect data. There was no statistically significant difference between the two groups in knowledge or health care beliefs ($p > .05$).

Dedication

Dedicated to Scott Powers who inspired me to conduct this study. Scott spent the last few years of his life sharing his warm smile, enthusiasm for life, and eagerness to educate others about AIDS. Scott touched the lives of children, nursing students, and many others. I will always treasure his friendship.

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CHAPTER I

INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) is a major national and international health problem. As the number of people affected grows and survival is extended, more and more nurses will be needed to provide acute and chronic care and to participate actively in preventive efforts. Demand on nursing personnel resources is already heavy and will undoubtedly soar in the near future as prevalence rises and the illness expands. Part of the profession's ability to meet this demand is nurses' willingness to work with those affected (Bennett & DeMayo, 1993).

For over a decade, hospitals have been debating which measures will ensure a safe hospital environment. Due to the risks to workers health and safety, the federal government has taken a number of initiatives to protect health care workers from occupational exposure to diseases. In 1983, the Center for Disease Control (CDC) recommended that whenever a patient was suspected of being infected with a blood-borne disease, health care workers should utilize blood and body fluid precautions (Garner, 1983).

In 1987, the CDC modified these guidelines to recommend consistently using blood and body fluid precautions for all patients. Now referred to as universal precautions, these standards include the use of gloves when handling blood and body fluids, mucous membranes, or soiled items or surfaces, and when performing venipunctures or starting

intravenous lines. Masks and eye protection should be worn when there is a possibility of blood or other fluids being splashed onto mucous membranes, and gowns are indicated when splashing is possible (Levine & Goody, 1992).

Personal contact with patients who are positive for the human immunodeficiency virus (HIV) and/or AIDS elicits emotional, prejudicial and hysterical responses. Studies indicate nurses with negative attitudes are less likely to spend time in the delivery of care to persons with AIDS, thus reducing quality of care. Preexisting social stigmatization and fear of exposure may be underlying reasons for nurses' prejudicial attitudes (Fawcett, 1993).

Nurses, more than any other health care profession, are on the "front line" of AIDS patient care. Nurses must be knowledgeable about AIDS and the care of persons with AIDS. It is of utmost importance they be educationally prepared to give safe, competent and compassionate care. Knowledge of the syndrome, its mode of transmission, and techniques of management may help reduce anxiety about nursing AIDS patients, thus enhancing the ability to give quality care (Brown, Calder, & Rae, 1990).

Education has clearly been identified as one of the most important means of halting the spread of the human immunodeficiency virus. No greater challenge exists for nursing educators than to effectively prepare nursing students for the realities of the human immunodeficiency virus and AIDS. Review of the nursing literature reveals limited research in AIDS education. Therefore, this study will examine the effects of AIDS instruction on knowledge and health care beliefs of

freshman nursing students. Strengthening freshman nursing students' AIDS knowledge and health care beliefs is imperative in the future delivery of quality patient care for persons with AIDS.

Problem Statement

Inadequate AIDS knowledge among student nurses resembles inadequacies found in the general population (Dawson, Cyanamon, & Fitt, 1988). Consequently quality AIDS patient care is in jeopardy. It is of the utmost importance student nurses be educationally prepared to give safe, competent and compassionate care. Preparation of student nurses for quality patient care requires not only acquisition of the AIDS knowledge base needed for care, but also of attitudes and values supportive of the AIDS patient. Therefore, this study will examine the effects of AIDS education on knowledge and health care beliefs of freshman nursing students.

Purpose

The purpose of this study was twofold: first, to examine if freshman nursing students presented with factual information regarding AIDS through AIDS instruction have more knowledge about AIDS than freshman student nurses without AIDS instruction; second, to determine if there is a difference in strength of AIDS health care beliefs held by freshman nursing students with AIDS instruction and freshman nursing students without AIDS instruction. This study replicates a research study conducted by Catherine E. Earl (1989) of student nurses at an associate degree nursing program in the midwest United States. In addition, this study includes the personal experience of two persons

with AIDS to assist freshman nursing students in examining their own attitudes, values and beliefs.

CHAPTER II

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

The Health Belief Model is the conceptual framework for this study. The Health Belief Model (HBM) was developed in the 1950's primarily to understand noncompliance with screening procedures (Janz, Becker, & Hartman (1988). It was later applied with medical regimens, that is, to sick-role behavior (Becker & Maiman, 1975). In 1988 Rosenstock, Strecher, and Becker expanded the HBM by incorporating "self-efficacy" as an explanatory variable, as part of the concept of barriers. The term related to a feeling of self-competence in implementing a recommended change (Bandura, 1990). The concept of "self-efficacy", however, is not included in this study.

The HBM is based on three basic assumptions. First, that people are interested in protecting their health; second, that people believe that they have some control over their health and illness; and third that people make "rational", cost-benefit calculations before adopting preventive behavior. That is, people make logical decisions concerning their health. The logical outcome is that providing people with the appropriate measures to avoid illness will lead them to change their behavior (Carmel, 1990).

Health motivation was introduced into the model by Becker and associates on the assumption that motives selectively determine an individual's perception of the environment (1974). Health motivation

refers to an individual's degree of interest in and concern about health. The desire to maintain a positive state of health and avoid a state of illness is a dimension of health motivation. The main concepts of the model that have been developed to explain motivation are perceived susceptibility, perceived severity, perceived benefits, perceived barriers or costs, and cues to action (Mikhail, 1981).

According to the HBM, in order for behavior change to succeed, people must have an incentive to change, feel threatened by their current behavioral patterns and believe that change will be beneficial. Also, they must feel themselves competent to implement that change (Rosenstock, Strecher, & Becker, 1988).

Following are the primary concepts of the HBM 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 appear 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 HBM stands out among social-psychological models of health-related behavior as the most frequently cited and researched (Wallston &

Wallston, 1984). A summary of forty-six HBM studies, twenty-four of which examined preventive health behavior, shows empirical evidence supporting HBM dimensions as important contributors to the explanation and prediction of health behavior (Janz, Becker, & Hartman, 1988). Perceived barriers proved to be the most powerful predictor among the HBM dimensions in these studies and susceptibility appeared second in importance (Janz, Becker, & Hartman, 1988). The HBM provides a systematic approach to examine the relationship between AIDS knowledge and AIDS health care beliefs of freshman nursing students (see Figure 1).

This study is a replication of Earl's (1989) research. The framework for this study implies that if a freshman nursing student receives information about the disease AIDS this will change their health care beliefs, that is, their perceived susceptibility, seriousness, benefits, and barriers concerning AIDS. Thereafter, freshman student nurses will be more likely to value the use of universal precautions as a benefit and take preventive action to avoid contracting AIDS.

The HBM consists of five concepts that can be applied to any disease and can be used to predict acceptance of any relevant health prevention measure. Therefore, these five concepts can be used to explain the rationale for freshman nursing students to practice preventive measures when confronting the disease AIDS. The first concept is the concept of perceived susceptibility to a specific disease, in this case, AIDS.

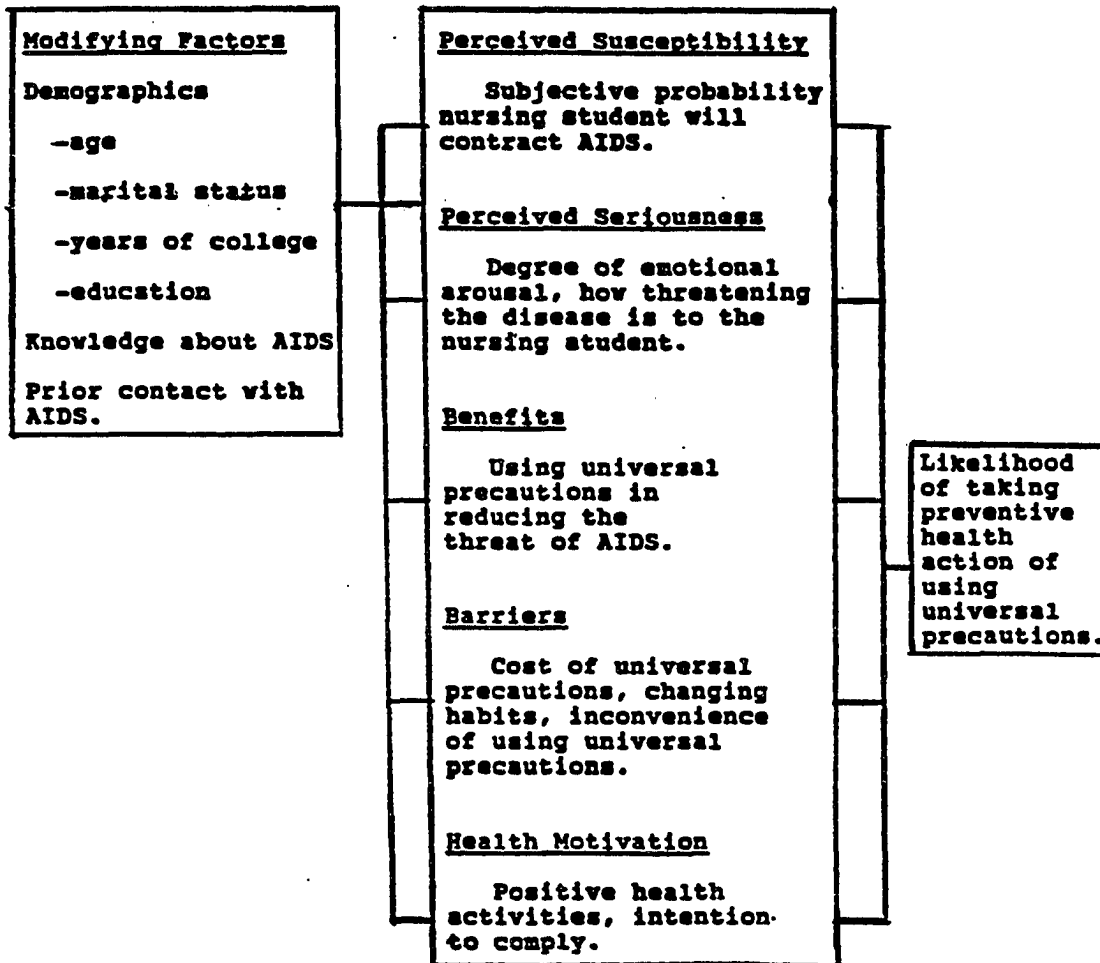


Figure 1

HEALTH BELIEF MODEL ADAPTED BY EARL, 1989
FROM BECKER ET AL., 1974 and KASL, 1974

The second concept is the perceived seriousness of disease X, in this case, AIDS. This is evident in the simple fact that AIDS is currently the most serious health problem in the United States. AIDS is occurring in a society that disapproves of homosexuality, drug use, and sexual promiscuity. This disapproval is accompanied by fear of contagion, prejudice, discrimination, stigmatization, and in extreme cases hatred and violence. The diagnosis of AIDS is a traumatic event, due to the fact the disease is progressive with an extremely poor prognosis.

Inducing a high perceived severity is effective in influencing health related behaviors. Therefore, if freshman nursing students are given specific instructions on the severity of AIDS they will be more willing to use preventive measures and follow universal precautions.

The third concept is the perceived benefits of the use of universal precautions as preventive action in preventing the contraction of AIDS. That is, perceived benefits will appear as a result of following a set of health recommendations that will reduce the threat or severity of AIDS. Studies have revealed that people are more likely to comply with health recommendations when they believe that the recommended action is effective in preventing, detecting, or treating the disease and thus reduce its threat to them (Larson, Olsen, & Cole, 1979; Rosenstock, Derryberry, & Carriger, 1959; Haefner & Kirscht, 1970; Becker et al., 1977; Heinzelman, 1962; Becker et al., 1977; Kegeles, Kirscht, & Haefner, 1965; Leavitt, 1979).

Perceived barriers is the fourth concept. Perceived barriers are the costs associated with taking an action following health

recommendations. The action, use of universal precautions by freshman nursing students will be more likely to occur if it is seen as painless, accessible and/or convenient. Barriers to the use of universal precautions include inadequate education, supplies, habit, frequent change in CDC directives, costs, insufficient time, awkwardness in using equipment, and poor sizing of equipment.

Finally, the fifth concept, health motivation, refers to an individuals degree of interest in and concern about health. The desire to attain and maintain a positive state of health and to avoid illness is a dimension of health motivation.

Knowledge is also a modifying factor involved in the Health Belief Model. Level of knowledge depicts events which lead to positive or negative attitudes toward taking preventive health action.

In summary, certain concepts of the Health Belief Model are believed to influence taking preventive action (Carmel, 1990; Becker & Joseph, 1988; Janz & Becker, 1984). The concepts of the Health Belief Model are perceived susceptibility, perceived seriousness, perceived benefits, perceived barriers, and health motivation. The Health Belief Model is based on the assumptions that people are interested in their health, have control over health and illness and make rational calculations before adopting preventive behavior. The Health Belief Model stands out among social-psychological models of health related behavior as the most cited and researched (Wallston & Wallston, 1984). Many studies have supported a relationship between health behaviors and concepts included in the Health Belief Model (Becker & Maiman, 1975; Cummings, 1979; Mikhail, 1981; Rosenstock, 1974). In addition, research

studies using the HBM have supported a relationship between the perceived benefits of following universal precautions in the preventive action against AIDS (Kopfer & McGovern, 1993; Morrison, 1993; Levine & Goody, 1992; Flaskerud, 1992).

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 preventive action in the use of universal precautions as a benefit in preventing AIDS. In a number of studies the level of knowledge related positively to adherence (Becker, Drachman, & Kirscht, 1972; Hulka, Cassel, & Kupper, 1976; Steele & McBroom, 1972; Tagliacozzo & Ima (1970). Level of knowledge depicts events which lead to positive or negative attitudes toward taking recommended preventive health action.

Literature Review

Five studies similar to Earl's 1989 research were found that specifically examined the effect of AIDS education on student nurses' knowledge and health care beliefs. Further research studies regarding AIDS knowledge and health care beliefs have been conducted with selected target populations. In addition, research studies regarding AIDS educational strategies have been conducted with nursing students.

There are multiple variables concerning the AIDS issue that can be studied. The main variables for this study are knowledge and health

care beliefs concerning AIDS. This review of the literature will examine student nurses' knowledge, attitudes and beliefs about AIDS; and AIDS educational strategies for nursing curricula; and the Health Belief Model and preventive behaviors.

Knowledge, Beliefs, Attitudes, and Behavior about AIDS in Nursing Students

Nursing students are not exempt from the fears, misapprehensions, and prejudices surrounding AIDS. The incidence of AIDS is likely to continue to rise, making it extremely likely that student nurses will encounter AIDS patients at some point in their nursing careers. It is also important that appropriate attitudes concerning care of AIDS patients be fostered in student nurses in an attempt to ensure that clients with AIDS will receive holistic nursing care, which involves a psychosocial, spiritual, and physiological focus (Jemmott, Jemmott, & Cruz-Collins, 1992).

Jemmott, Jemmott, and Cruz-Collins studied nursing students at a university in New Jersey (1992). At the time of this study, New Jersey ranked fifth among states in the total number of reported AIDS cases. The sample for this research included sophomore (55%) and senior (45%) nursing students. AIDS content was incorporated in the junior year of this nursing curriculum. Hence, seniors had received the AIDS content, whereas sophomores had not. Results of this study show that an overwhelming majority of students knew the correct answers to most of the AIDS knowledge questions. The students were especially knowledgeable about the basic facts concerning AIDS. The gaps in their knowledge chiefly concerned transmission of HIV through casual contact

and exposure to saliva of infected persons.

The multivariate analysis results indicated that seniors and sophomores differed significantly when all dependent variables were considered simultaneously ($p < .001$). The dependent measures were avoidance intentions, perceived occupational risk, negative attitudes towards intravenous drug users (IVDUS), and AIDS knowledge. Analyses revealed that compared with sophomores, seniors had significantly weaker intentions to avoid AIDS patient care ($p < .01$), perceived lower occupational risk ($p < .02$), and had more knowledge of AIDS ($p < .0001$).

Another aspect of the study was whether a nursing curriculum with AIDS content increases student nurses' intentions to care for AIDS patients. In general, the results supported the view that the AIDS content had ameliorative effects. Seniors who had received the AIDS content expressed more favorable intentions to care for persons with AIDS than did sophomores, who had not received the AIDS content. The student nurses who received AIDS content did not differ from other student nurses in attitudes towards homosexuals and intravenous drug users (IVDUS).

In this study (Jemmott, Jemmott, & Cruz-Collins, 1992), there was no evidence that the AIDS content had an impact on attitudes towards homosexuals or IVDUS, and previous research has not documented changes in such attitudes as a consequence of nursing education. These researchers concluded that AIDS educational efforts should emphasize attitudinal issues and the humanistic side of patient care. Even among nurses who agree to care for AIDS patients, attitudes toward IVDUS and homosexuals might predict social distance. In this context of nursing

care, negative attitudes might affect psychosocial aspects of patient care for these groups.

There were a number of potential limitations in the study conducted by Jemmott, Jemmott, and Cruz-Collins (1992). The study used a convenience sample from a single university in New Jersey. In addition, the study had a cross-sectional design. Longitudinal studies and randomized experiments are needed to pin down the temporal and causal aspects of the relations observed in this study. The measures of negative attitudes towards intravenous drug users and avoidance intentions used in this study had relatively low internal consistency, which reduces statistical power. Thus, the results of the study might have been stronger had more reliable measures of these variables been used. Nonetheless, this study has heuristic value, particularly considering what a formidable problem AIDS presents to health professionals.

Synoground and Kellmer-Langan (1991) examined the attitudes and beliefs of 87 senior baccalaureate nursing students in the United States Pacific Northwest. The instrument in this study was designed to measure nursing students' attitudes related to caring for AIDS patients. Content validity of this instrument was established by a panel of experts in the knowledge, care of AIDS patients, and research design. Cronbach's alpha for internal consistency of the subscales ranged from .54 to .98

Results from this study revealed inconsistent attitudes and beliefs of nursing students regarding issues related to caring for patients with AIDS. Fifty-two percent of students nurses indicated that

they would volunteer to care for a patient with AIDS yet seventy percent of nursing students expressed a general discomfort in working with AIDS patients. Sixty-seven percent of student nurses felt comfortable touching an AIDS patient. However, seventy-five percent of student nurses felt that they would not want to be cared for by a nurse with a positive AIDS test. Fifty-seven percent stated that they could accept the lifestyle of patients who had contracted AIDS through homosexual practices, prostitution or IV drug use. About the same percentage indicated they would feel differently toward a patient who had contracted the disease through blood transfusions than through sexual or drug-related practices. Over thirty percent indicated that they automatically suspect homosexuals of having AIDS even without an official diagnosis.

Students generally did not feel educationally prepared to care for AIDS patients and felt the nursing curricula needed to have a greater emphasis on caring for AIDS patients. Fifty-two percent did not feel they had enough knowledge and facts to communicate effectively with families and friends of AIDS patients. However, fifty-seven percent of students felt confident in their ability to care for such patients.

Students who had actually cared for patients with AIDS responded differently than those who had not cared for such patients. Significant differences were noted related to attitudes toward caring for these patients ($p = .0003$); student rights ($p = .0004$); patient rights ($p = .01$); and in overall scores ($p = .006$). Overall attitudes were positive, consistent with the findings of Kagan (1986) who concluded that student nurses generally felt positive about caring for AIDS

patients. Certainly, further study needs to be done on this factor; however, it seems clear that fears and concerns can be best overcome through actual experiences.

Limitations of Synoground and Kellmer-Langan's (1991) study include the use of a convenience sample of senior student nurses at a baccalaureate school of nursing in the Pacific Northwest. In addition, reliability measures for internal consistency of the instrument were not established prior to administration of the questionnaire.

Research conducted by Oermann and Gignac (1991) examined the level of knowledge and attitudes among Canadian student nurses and faculty. A descriptive-correlational design was used in which nursing students and faculty completed an instrument on their knowledge of and attitudes toward AIDS. The sample consisted of all four levels of baccalaureate students and nursing faculty of a midsize urban university in Canada. A total of 166 subjects participated in the study including 27 first-year students, 46 second-year students, 47 third-year students, 27 fourth-year students, and 19 nursing faculty.

The instrument used by Oermann and Gignac was the "AIDS Knowledge and Attitudes Assess Test" developed by Lawrence and Lawrence (1989). Content validity of this instrument was established by Lawrence and Lawrence (1989). Internal consistency of this instrument was determined using Kuder-Richardson 21, which ranged from .91 to .98 (Lawrence & Lawrence, 1989).

AIDS knowledge scores in Oermann and Gignac's research increased as students progressed through the program. Faculty had the highest knowledge scores but scored similarly to the students in terms of

attitudes. Attitude scores were low across all groups.

Pearson's r in Oermann and Gignac's study revealed significant positive relationships between knowledge and attitudes for the total sample ($p < .05$), for the first year nursing students ($p < .05$), and for the third year nursing students ($p < .05$). For the sample as a whole, subjects with more knowledge about AIDS expressed more positive attitudes toward persons with AIDS, similar to the findings of Lawrence and Lawrence (1989).

Results of Oermann and Gignac's study indicated that, although knowledge about AIDS could be increased, educational strategies are needed for improving attitudes. In preparing students to care for AIDS patients, teaching strategies need to address both the cognitive and affective domains of learning. In terms of knowledge, lectures followed by discussion and readings on AIDS are recommended (Oermann & Gignac, 1991).

Oermann and Gignac's (1991) research was limited to one setting and use of a convenience sample. Continued studies with nursing students and faculty are needed to examine their AIDS knowledge and attitudes toward AIDS patients. The effectiveness of different teaching methods and learning activities in improving these attitudes should be researched.

Bell and Williams (1991) compared AIDS knowledge and attitudes of nursing students in Australia and Canada. The intent of this study was to assess what differences, if any, exist between the Australian and Canadian student nurses. No details regarding construct validity or reliability of the instrument used in this investigation were available.

Differences were noted in the responses to the factual aspects of knowledge concerning AIDS. Australian nursing students were more aware of the acronym, the cause and transmission of the disease. Canadian students, however, were better informed regarding mortality rates and the need for notification of the disease.

On the question of the right to choose to care for a person with AIDS, there was a moderately high agreement from both groups. The explanation given by Bowd and Loos for the Canadian respondents' support of the right of choice relied on an assumption of irrationally-based anxiety about the transmission of the disease (1987). A similar finding was apparent in this study, that there is not always a correlation between knowledge and rational beliefs, behaviors, or lack of fear and prejudice. Bowd and Loos state, ethical as well as social and psychological considerations are clearly important in determining the quality of care given to the AIDS patient (1987).

There were many similarities between Australian and Canadian respondents with regards to social and educational implications for nursing practice. There was almost unanimous support for the need for the inclusion of AIDS-related education, both in formal programs and staff educational programs in health care institutions. Clearly, the implication of these findings is that AIDS education must be given high priority in health care education (Bell & Williams, 1991).

Brown, Calder, and Rae conducted a study on the effect of knowledge on nursing student attitudes (1990). In this study a pretest-posttest design was used to identify changes in nursing students' knowledge and attitudes following a one-day AIDS workshop. The sample

consisted of first to fourth year baccalaureate undergraduate nursing students in western Canada. At the time of this study, there was limited amounts of curricular information in this nursing program relating to AIDS, with most of this content in the third and fourth years.

Although attitudes were generally positive on the pretest (greater than 3 on a 5-point Likert scale), they were more positive on the post-test ($p = .021$). This change may be related to the gain in knowledge as a result of the workshop presented. There was a significant relationship between year of the program and change in overall attitude ($p = .004$). First year students demonstrated the most significant attitudinal changes. In general, students responded with fewer fears and concerns in the post-test than in the pretest ($p < .01$). Responses to questions dealing with special concerns and fears related to AIDS were significantly related to the year in the program ($p < .01$). First year students indicated less fear and concern than students in any other year.

Limitations of Brown, Calder, and Rae's study include the absence of a control group and history. On the day of the workshop, the third year students were informed of the tragic death of a classmate. This variable may have affected student responses concerning death on the questionnaires.

This study has implications for curriculum planning and implementation. Since all students benefited from the educational program, information should not be limited to the clinical years of the curriculum. The positive attitudes of preclinical student nurses can be

enhanced by including AIDS information and values clarification content in the first and second year courses.

Earl conducted a study to determine whether educational content on AIDS had a significant effect on student nurses knowledge and health care beliefs about the disease AIDS (1989). The sample for this study was 30 student nurses in an associate degree program in the midwest United States. A quasi-experimental nonequivalent control group pretest posttest design was used. The students were grouped into one experimental and one control group 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 two weeks after the AIDS instruction. The AIDS instruction included 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. The AIDS Knowledge and Health Belief Scale was initially administered to the control group at the beginning of the research study and two weeks later. The control group received the AIDS instruction immediately after the posttest. The reliability coefficient for internal consistency for the AIDS Knowledge Questionnaire was .62. The reliability coefficients for each of the five subconstructs of the Health Care Belief Scale ranged from .72 - .85.

Results showed that there was no significant difference between the two groups on post AIDS knowledge after controlling the effect of

pre AIDS knowledge ($p > .05$). Although AIDS knowledge scores of the control group remained the same at post-test, the mean post AIDS knowledge score of the experimental group was greater than the pretest score. However, this difference was not statistically significant ($p = .403$).

Findings of this study revealed that there was no significant increase in knowledge after the lecture regarding AIDS. The two groups were also not significantly different with response to their beliefs on seriousness, benefits, barriers, and health motivation with the exception of susceptibility. The students in the experimental group were more likely to believe that they were susceptible for contracting AIDS compared with the control group at post-test. However, the experimental group reported the same susceptibility level at pretest and post-test while the control group showed a drop in susceptibility over the same time period. Thus, change in susceptibility belief occurred among the control group not the experimental group. Results of this study did not support a change in attitude.

The threat of history was a limitation in Earl's 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. In addition, the mass media as well as professional journals contained information about AIDS.

In Earl's (1989) Study, demographic data were collected to support the equivalency of the experimental and control groups. Psychosocial variables such as health care beliefs can be influenced by individual characteristics such as gender, marital status, age, and educational

status. Nursing students have individual life experiences. This may have had an effect on the responses of the nursing students.

Testing effects are the effects of taking a pretest upon the scores of a posttest. The students in Earl's (1989) study were tested and retested using the same instruments after a two week period. Therefore, the students could have remembered the questions and/or responses.

In addition, student nurses health care beliefs about AIDS may be independent of any education they received during Earl's (1989) research. Nursing students are typically anxious and this anxiety may have affected their responses to AIDS Knowledge and Health Care Belief Questions.

Finally, the small sample size is a limitation of Earl's (1989) research. The sample was also restricted to one nursing program in the Midwest. Due to these limitations interpretation of the data must be taken with caution.

Data from Earl's (1989) study suggest that nursing students lack sufficient knowledge concerning AIDS. The results clearly indicate the need for continued research of these issues, particularly as new information about AIDS becomes available. There is certainly a need for assessment of attitudes, fears, and knowledge level of nursing students in regards to AIDS. Innovative teaching methods should be implemented to educate nursing students about AIDS.

In summary, review of the nursing literature reveals that nursing students are knowledgeable about the basic facts concerning AIDS (Jemmott, Jemmott, & Cruz-Collins, 1992; Bell & Williams, 1991; Earl,

1989). However, studies indicate that nursing students have inconsistent attitudes and beliefs regarding issues related to caring for patients with AIDS (Jemmott, Jemmott, & Cruz-Collins, 1992; Synoground & Kellmer-Langan, 1991; Oermann & Gignac, 1991). According to Synoground and Kellmer-Langan (1991) nursing students do not feel educationally prepared to care for patients with AIDS and feel that nursing curricula need to have a greater emphasis on caring for AIDS patients.

Nursing students who have actually cared for AIDS patients possess more positive attitudes than those students who have not cared for AIDS patients (Oermann & Gignac, 1991). In addition, students receiving AIDS content in their nursing curriculum express more positive attitudes and firmer intentions to care for patients with AIDS (Jemmott, Jemmott, & Cruz-Collins, 1992; Oermann & Gignac, 1991; Lawrence & Lawrence, 1989). Therefore, future AIDS educational efforts of nursing curricula should emphasize attitudinal issues and the humanistic side of patient care.

AIDS Educational Strategies for Nursing Curricula

Review of the nursing literature reveals that in order to prepare nursing students to care for AIDS patients, teaching strategies need to address both the cognitive and affective domains of learning (Oermann & Gignac, 1991). In terms of knowledge, lectures followed by discussion on AIDS are effective means of assisting students in developing an understanding of AIDS (Wertz et al., 1987; Oermann & Gignac, 1991; Duffy, 1993). To promote learning in the affective domain, educational programs that bring students together to discuss their values can facilitate their acceptance and understanding of AIDS patients

(Flaskerud, 1992). In addition, involving persons with AIDS in educational programs provides a positive personal experience and assists nursing students in examining their own attitudes, values and beliefs (Oerman & Gignac, 1991; Flaskerud, 1992; Duffy, 1993).

Bower, Webb and Stevens (1994) conducted a study of 67 senior student nurses at a state university utilizing both cognitive and affective domains of learning. The purpose of this quasi-experimental study was to examine the effectiveness of an experiential workshop on nursing students' anxiety and knowledge about AIDS.

A three group pre/post quasi-experimental design was used for this study. One clinical group entering their community rotation was used as a comparison group. A clinical group in their acute care rotation was assigned as group III. The experimental groups (I, n = 19; II, n = 19) attended both portions of the workshop. The sequence of the workshop for Group I was anxiety awareness exercises first, followed by cognitive learning of information about AIDS. Group II attended the workshop in reverse order. The comparison group (III, n = 29) who attended only the cognitive learning portion of the workshop, was offered the anxiety awareness exercises portion after the six-week follow-up testing.

All of the students had covered Universal Precautions in a previous course, but little emphasis was placed on caring for AIDS patients. All groups received a pretest before the workshop, a posttest immediately following the workshop, and a second posttest six weeks after the workshop. The pretesting and posttesting involved the use of two questionnaires: The State-Trait Anxiety Inventory (STAI) (Spielberger, 1966) and the AIDS Knowledge and Attitude Questionnaire

(AKAQ) (Wertz et al., 1987). Coefficient alpha of the AKAQ revealed an internal reliability of .71. The six week follow-up posttest included only the AKAQ.

The experimental intervention was a six-hour planned workshop, which included a three-hour session of anxiety awareness exercises and a three-hour didactic session on cognitive learning about AIDS. The anxiety awareness exercises provided an opportunity to vent feelings and concerns about caring for persons with AIDS.

The session began by discussing general concerns about public perceptions of HIV-positive persons and persons with AIDS. Discussion of general and specific concerns of health care workers followed. Attention was paid to biases, prejudices and fears. Group discussion relating to values and attitudes about HIV/AIDS followed. Students then viewed a videotaped interview of a nurse with AIDS. The cognitive session included information about the epidemiology of the disease, testing and treatments. Also universal precautions and nursing care of persons with AIDS was emphasized.

Results of the study indicated that students in Group II, the group that attended the knowledge portion of the workshop first followed by the anxiety awareness exercises, acquired more information and retained it longer. While anxiety awareness exercises are important, results of this study indicated that including the content in a particular sequence may be critical. Perhaps providing students with factual information raises their anxiety to a point where awareness is possible and anxiety awareness exercises are more useful. Students anxieties related to caring for persons with AIDS must be acknowledged.

These authors suggest planned sequential AIDS educational programs be implemented in nursing curricula.

The findings of this study must be interpreted with the following limitations in mind. The use of a convenience sample prevents generalizability of the findings to student nurse populations. Furthermore, the subjects' own sexual preferences and personal experiences with persons with AIDS could have influenced the anxiety and knowledge variables. These authors suggest that studies should be designed to determine not only the retention of AIDS information, but application of this knowledge to clinical practice.

Literature Review of the Health Belief Model and Preventive Behaviors

Literature review of the Health Belief Model reveals significant findings related to preventive behaviors. One study by Mikhail (1981) discovered that a person'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. Another study by Steele and McBroom (1972) found that level of education of the dominant female in the household correlated highly with the degree of preventive behavior. In addition, in a study by Tagliacozzo and Ima (1970), which included a test of information about the causes, symptoms, and complications of four chronic conditions, higher levels of knowledge were associated with continuing in treatment.

With respect to preventive behavior, such as obtaining immunizations, check-ups, and screening, the elements of the HBM have received considerable support as predictors to act or not act (Becker & Maiman, 1975). For example, Cummings (1979) conducted a study of

immunizations for swine flu of 300 Michigan residents. Health beliefs, information about the vaccine program, demographics, and intent to act were obtained during random telephone interviews. Three to four months later, the same people were reinterviewed whether they had been inoculated, their reasons for acting or not acting, and their reactions to the study. Each of the health beliefs, taken separately, yielded significant associations with intention and behavior. The health beliefs examined in this study were the perceived severity and susceptibility of swine flu, the benefits of the flu vaccine, and the perceived barriers to obtaining the vaccine as well as its safety. Together the set of elements yielded a multiple correlation of .50 with the dichotomous measure of behavior. As usual, receiving the vaccine was highly associated with socioeconomic status. However, a significant relationship between health beliefs and preventive behavior of receiving the vaccine remained after the effect of socioeconomic status was removed.

Carmel (1990) conducted a literature review on studies of AIDS-related behavior change in which concepts of the HBM were used. Carmel reported that barriers and benefits as suggested by Becker and Joseph (1988) were the best predictors of AIDS-related behavior change. Susceptibility was second in importance and cues for action seemed to be the least significant predictor of behavior change.

A study by Gruber et al. (1989) found that knowledge of HIV infection and universal precaution practices were not related to nurses' implementation of universal precautions. Of the 213 nurses Gruber et al. (1989) studied in a northeastern medical center, knowledge scores

were high yet few nurses were wearing gowns when changing the linen of incontinent patients or using goggles/masks when suctioning patients with tracheostomies. In this study nurses identified the following barriers for failure to use universal precautions: unavailable supplies, habit, frequent changes in CDC directives, and weak or nonspecific directives by hospitals (Gruber et al, 1989). A similar lack of preventive action was found at San Francisco General hospital where employees attributed their lack of compliance with universal precautions to such barriers as inadequate AIDS education and inadequate hospital supplies (Flaskerud, 1992).

A significant positive relationship between perceived benefits and preventive behavior has been supported in the literature (Mikhail, 1981; Rosenstock, 1974). The perceived benefit of an action is weighed against the perceived psychological, physical, financial, and other costs or barriers of taking action. Becker and Maiman (1975) have shown that even if an individual is ready to act, the perceived benefits of the action in reducing the threat must be significant if such action is taken. For example, research studies supported the belief that nurses perceiving the benefits of universal precautions were more likely to use universal precautions in the preventive action against AIDS (Kopfer & McGovern, 1993; Morrison, 1993; Levine & Goody, 1992; Flaskerud, 1992). Therefore, if freshman nursing students receive information on the benefits of universal precautions, they will be more likely to practice universal precautions as AIDS preventive behavior.

In conclusion, the AIDS epidemic provides a major challenge to nursing education. Nursing educators need to determine the most

effective educational strategies (Oermann & Gignac, 1991). Assisting students in examining their attitudes, beliefs and values regarding AIDS requires planned educational strategies. Therefore, this study will involve the following educational strategies: an introductory lecture on AIDS by an AIDS nurse educator, the personal experience of a person with AIDS, and group discussion.

Research Hypotheses

Hypothesis one: Freshman nursing students presented with AIDS instruction will have more AIDS knowledge than freshman student nurses without AIDS instruction.

Hypothesis two: The strength of health care beliefs related to AIDS susceptibility, seriousness, benefits, barriers and health motivation of freshman nursing students with AIDS instruction differs from those without AIDS instruction.

Definition of Terms

This study is a replication of Earl's (1989) research on AIDS Health Care beliefs. Earl's operational definitions of the HBM concepts are adapted from Becker et al., (1977) and Rosenstock (1966). AIDS health care beliefs include a set of perceptions a person holds about a) susceptibility to AIDS, b) the seriousness of AIDS, 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, & Kirsch, 1974). In this study the following conceptual definitions of the AIDS health care beliefs written by Earl (1989) will be used.

Perceived susceptibility: a person'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 person to engage in performing universal precautions. Barriers are the negative components of an anticipated behavior undertaken to prevent disease, maintain health, and cure or lessen undesirable consequences of AIDS. The negative components might involve cost of equipment, habit, availability of supplies, time, or a need for behavior change in performing 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 knowledge: Factual material possessed by the respondent in regard to AIDS presented in lecture material in the classroom at a diploma nursing program as determined by the scores on the AIDS Knowledge Questionnaire.

AIDS instruction: Sixty minutes of lecture and discussion in a classroom setting at a diploma program of nursing. Lecture includes explanation of the AIDS virus, types of HIV infection, transmission of the AIDS virus, testing for AIDS, treatment for AIDS, psychosocial aspects, and legal aspects of AIDS. Discussion includes a person with AIDS sharing personal experiences.

Nursing students: Freshman nursing students enrolled in a diploma program in nursing who are in the first year of the program.

CHAPTER III

METHODOLOGY

Research Design

A Quasi-experimental control group pretest/posttest design was used. The students were grouped according to clinical assignments. Questionnaires were used to collect data from freshman nursing students enrolled in freshman N100 level courses at a diploma nursing program. The AIDS Knowledge and Health Care Belief Scale were administered to the experimental group immediately before and two weeks after AIDS instruction. The control group completed the AIDS Knowledge and Health Care Belief Scale on the first day of the study and two weeks later. The control group did not receive AIDS instruction until after the research study was completed.

Sample and Setting

The sample of this study consisted of 50 freshman student nurses enrolled in a diploma nursing program in the Midwest United States. The sample selection was one of convenience consisting of two independent groups of freshman nursing students who were willing to participate in this study. The criteria for the subjects were: enrolled in a freshman level nursing course, had not received a formal lecture in the nursing curriculum regarding AIDS, and consented to participate in the study. The sample size included 50 freshman nursing students enrolled in N100 level courses.

The freshman nursing students were divided into experimental and control groups by clinical assignments at the beginning of the term. Included in the sample were males and females of various ages, marital

status and educational backgrounds.

In this program, nursing students had taken or may have been taking the following courses concurrently: a) Human Anatomy, Human Physiology, Introductory Psychology, and Nursing 110 (Introduction to Nursing Practice). None of these courses have a formal lecture on AIDS. All students had introduced to universal precautions at the beginning of the first term in the nursing program.

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, relationships with friends, family or patients with AIDS, and a question regarding the type of education, if any, the students had received 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 Earl (1989) 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 Herren (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, and 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 subjects 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 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 38. The same questionnaire was used for both pretest and posttest. Information on AIDS is constantly changing. Therefore, in October of 1994 the AIDS Knowledge Questionnaire was reviewed for verification of current and accurate information by a master's prepared nurse AIDS educator and an infectious disease physician who conducts AIDS research.

To evaluate internal consistency of the AIDS Knowledge Questionnaire Earl (1989) used the Kuder-Richardson formula. The reliability coefficient for internal consistency for the AIDS Knowledge Questionnaire was .62 (Earl, 1989). To establish content validity of the AIDS Knowledge Questionnaire, a social worker who worked with AIDS clients, four baccalaureate prepared nurses who worked with AIDS clients

in Hospice, and a faculty member with a doctorate in the health sciences completed the Questionnaire. Based on the answers from these experts, the content and correct responses were examined and agreed upon (Earl, 1989).

Using the data from the present study the Kuder-Richardson 20 formula was used to reevaluate the internal consistency for AIDS Knowledge Questionnaire. The reliability coefficient for internal consistency for the AIDS Knowledge Questionnaire was .66.

AIDS Health Care Belief Scale

The "AIDS Health Care Belief Scale" measured the five concepts of the health belief model (see Appendix C). This scale was adapted by Earl (1989) using the "Breast Self Examination Scale" which was developed by Victoria Champion (1984). The scale contained 46 statements regarding health care beliefs about AIDS. 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 ranged from 6-36; for seriousness 12-72; for benefits 6-36; for barriers 10-60; and for health motivation 7-42 respectively.

In addition to the 41 items which measure the concepts of the health belief model, a miscellaneous section, items 42-46 were included.

These items were adapted by Earl (1989) from research done by 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 essential information for this study. These items were scored using a six point Likert Scale. Subjects responded to each statement with "strongly agree" (6); "agree" (5); "slightly agree" (4); "slightly disagree" (3); "disagree" (2); and "strongly disagree" (1).

The internal consistency of each of the subscales from the Health Belief Scale were evaluated to establish reliability (Earl, 1989). The reliability coefficients (Cronbach's alpha) for each of the five subconstructs of the Health Care Belief Scale were: for susceptibility .79; for seriousness .85; for benefits .72; for barriers .84; and for health motivation .73.

Using the data from the present study, the internal consistency of each of the subscales from the Health Belief Scale were reevaluated to establish reliability. The reliability coefficients (Cronbach's alpha) for each of the five subconstructs of the Health Care Belief Scale were: for susceptibility .79; for seriousness .73; for benefits .77; for barriers .84; and for health motivation .68 respectively.

Procedure

Initially all 50 potential subjects met in a classroom setting at a diploma nursing program. First, an explanation of the purpose of the study was given by the researcher (see Appendix D). Subjects were assured verbally 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 distributed and completed in the classroom.

The subjects were asked to place the last four digits of their social security number on the questionnaires. The subjects were told verbally that the completion of the questionnaires would indicate their consent to participate. After the questionnaires were completed they were collected by the researcher.

The subjects were then assigned by clinical groups to an experimental and a control group. There were four clinical groups for each freshman nursing course in both the experimental and control groups. The subjects in the control group were asked to leave the classroom after completing the questionnaires. The subjects in the experimental group were asked to stay after completing the questionnaires for the AIDS instruction.

Two weeks after the AIDS instruction, 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 researcher. After the questionnaires were completed, the students in the experimental group who had received the AIDS instruction were dismissed. The students in the control group were asked to stay for the AIDS instruction.

CHAPTER IV

RESULTS

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 41 females and 9 males who participated in the study. The mean age of the total subjects was 29.5 years. The standard deviation was 9.25. The mean number of years of college years was 3.8, with a standard deviation of 1.8. There were 26 students without any type of college degree, 8 students with an associate degree, 12 students with a bachelor's degree, 2 students with registered respiratory therapy certification (RRT), and 2 students with practical nurse licenses. The categories "never married" and "not presently married" were collapsed to "not married". There were 22 married and 28 unmarried participants (see Table 1).

Table 1

Demographic Characteristics of Sample

		n	%
Age (in years)		Mean = 29.5	
Gender	Male	9	18
	Female	41	82
Marital Status			
	Married	22	44
	Not Married	28	56
Years of College			
	< = 5	43	86
	> 5	7	14
Degrees or Certificates			
	AD	8	16
	BA	5	10
	BS	7	14
	RRT	2	4
	LPN	2	4
	None	26	52

Comparison of the Two Groups in Respect to Demographic Variables

To support the equality of the control and experimental groups, the variables of age, and years of college were compared (see Table 2). The t-test was used to compare the two groups with respect to age and years of college. The t-test result shows no significant difference between the groups in mean age, $t(48) = .41$, $p > .05$. The two groups were significantly different from each other in mean years of college $t(48) = 2.25$, $p < .05$.

Table 2

Summary and t-test Results for Age and Years of College

	Group				t	d.f.	p
	Control (n = 25)		Experimental (n = 25)				
	Mean	S.D.	Mean	S.D.			
Age	30	30.01	28.92	8.60	.41	48	.68
Years of College	4.36	1.68	3.28	1.72	2.25	48	.03

The Chi-Square test was used to test the equality of the groups with respect to degrees or certificates and marital status (see Table 3). The category of degrees or certificates was collapsed into two responses: Degrees or certificate which included the following degrees and certifications: AD, BA, BS, RRT (Registered Respiratory Therapist), JD (Judicial Degree), and LPN (Licensed Practical Nurse); and no degree/certificate. The two groups were significantly different with respect to degrees or certificates ($p < .05$). In addition, the category of marital status was collapsed into two responses: married and not married. The two groups were not significantly different with respect to marital status ($p > .05$).

Table 3**Summary Statistics For Degrees or Certificates and Marital Status**

Characteristic	Group	
	Control (n = 25)	Experimental (n = 25)
<u>Degrees or Certificates</u>^a	n	n
Degree or Certificate	12	21
No Degree or Certificate	13	4
<u>Marital Status</u>^b		
Married	11	11
Not Married	14	14

$$^a \chi^2(1, N = 50) = 7.22, p < .05.$$

$$^b \chi^2(1, N = 50) = 0, p > .05.$$

Comparison of the Two Groups With Respect to Sources of Knowledge

The two groups were compared with respect to sources of AIDS knowledge (see Table 4). Ninety-four percent (n = 47) of the subjects acknowledged that they had prior AIDS knowledge. A group mean t-Test was performed to compare sources of knowledge between the two groups. The two groups were not significantly different (p > .05). The Fisher's exact test was used to compare the two groups with respect to the sources of their AIDS knowledge. The only source of knowledge that showed a significant difference was the Surgeon General's Report (Fisher's exact test, p = .02). The Chi-Square test was not performed due to the small number of subjects in the following categories: formal class, seminar, class notes, other, and family/friend with HIV/AIDS.

Table 4

Comparison of Experimental and Control Groups with Respect to Sources of AIDS Knowledge

Source of Knowledge	Group	
	Experimental (n = 25)	Control (n = 25)
	n	n
Surgeon General's Report ^a	1	7
Television	23	20
Radio	11	10
Formal Class	4	4
Lecture	16	16
Seminar	1	5
Newspaper	18	14
Magazine	23	19
Class notes	0	2
Other	0	1
Family/Friend with HIV/AIDS	1	0
Cared for HIV/AIDS Patient	6	5

^aFisher's exact test, $p = .02$.

Descriptive Statistics for Pre-AIDS Knowledge and Health Care Beliefs

The two groups were compared with respect to knowledge and health care beliefs prior to the AIDS instruction. The health care beliefs measured were susceptibility, seriousness, benefits, barriers and health motivation. Means and standard deviations of AIDS knowledge and health

care beliefs for both groups are shown in Table 5. The t-test results indicated that there was a significant difference between groups with respect to health motivation ($p < .05$). The t-test results indicated that there was not a significant difference between groups with respect to knowledge, susceptibility, seriousness, benefits, or barriers ($p > .05$).

Table 5

Comparison of Control and Experimental Groups with Respect to Knowledge and Pre-AIDS Health Care Beliefs

	Group				t	df	p
	Control (n = 25)		Experimental (n = 25)				
	M	SD	M	SD			
Knowledge	29.64	4.14	30.40	2.59	.78	48	.44
Susceptibility	11.84	5.37	12.24	3.96	.27	48	.78
Seriousness	46.64	8.31	48.12	6.67	.69	48	.49
Benefits	30.70	4.06	29.72	3.82	.93	48	.36
Barriers	19.92	6.53	17.72	5.50	1.29	48	.20
Motivation	32.00	4.95	28.36	4.29	2.78	48	.01

Analysis to Test the Research Hypotheses

Hypotheses one and two were tested with Analyses of Covariance (ANCOVA) with pretest scores as covariates. Test results were considered significant only if the computed alpha level of probability was less than .05.

Hypothesis One

Hypothesis one states that freshman nursing students presented with AIDS instruction will have more knowledge than freshman student nurses without AIDS instruction. The pretest score of AIDS knowledge was used as a covariate to control the effect it has on posttest scores. The ANCOVA result in Table 6 showed that there was no significant difference between the two groups on post AIDS knowledge after controlling the effect of pre AIDS knowledge ($p > .05$). Thus, this research hypothesis was not supported.

Table 6

Analysis of Covariance on Posttest AIDS Knowledge Scores

Source of Variation	d.f.	MS	F	P
Between Groups	1	9.11	1.59	.21
Covariate (Pretest Scores)	1	280.988	49.31	.00
Within Groups	47	5.69		

Hypothesis Two

Hypothesis two states that the strength of Health Care Beliefs related to AIDS susceptibility, seriousness, benefits, barriers and

health motivation of freshman nursing students with AIDS instruction differs from those without AIDS instruction. At pretest, t-test results in Table 5 indicated that there was a significant difference between groups with respect to health motivation ($p < .05$). The t-test results in Table 5 indicated that there was not a significant difference between groups with respect to knowledge, susceptibility, seriousness, benefits, or barriers ($p > .05$).

The pretest score of AIDS Health Care Beliefs was used as a covariate to control the effect it had on posttest scores. The ANCOVA result in Table 7 showed that there was no significant difference between the two groups on post AIDS Health Care Beliefs ($p > .05$). Therefore, research hypothesis two was not supported. The means and standard deviations for the posttest responses for each group are summarized in Table 8.

Table 7

Analysis of Covariance For AIDS Health Care Beliefs

Source	df	MS	F	p
SUSCEPTIBILITY				
Between Groups	1	.462	.06	.81
Covariate	1	683.66	87.51	.00
Within Groups	47	7.81		
SERIOUSNESS				
Between Groups	1	5.31	.15	.70
Covariate	1	1817.52	51.92	.00
Within Groups	47	35.00		
BENEFITS				
Between Groups	1	4.29	.55	.46
Covariate	1	237.22	30.36	.00
Within Groups	47	7.81		
BARRIERS				
Between Groups	1	4.53	.33	.57
Covariate	1	1822.08	132.34	.00
Within Groups	47	13.76		
HEALTH MOTIVATION				
Between Groups	1	15.30	2.26	.14
Covariate	1	872.44	129.36	.00
Within Groups	47	6.76		

Table 8

Means and Standard Deviations of Posttest AIDS Knowledge and Health Care Beliefs by Control (n = 25) and Experimental (n = 25) Groups

	M		SD
	Obtained	Adjusted	
KNOWLEDGE			
Control	30.12	30.40	3.84
Experimental	29.80	29.64	2.90
SUSCEPTIBILITY			
Control	12.12	11.84	5.06
Experimental	11.88	12.20	4.63
SERIOUSNESS			
Control	49.20	48.28	8.41
Experimental	48.28	50.12	8.89
BENEFITS			
Control	30.84	30.76	3.52
Experimental	30.84	29.72	4.24
BARRIERS			
Control	19.08	19.92	7.10
Experimental	20.48	17.72	7.10
HEALTH MOTIVATION			
Control	30.88	32.00	4.96
Experimental	31.92	28.36	4.57

Miscellaneous Health Care Beliefs

In addition to examining AIDS health care beliefs, five miscellaneous beliefs about AIDS were studied (see Table 9). These items did not fit in a category to be included in the AIDS health beliefs section, but were considered to provide essential information for this study. These items were scored using a six point Likert scale. Subjects responded to each statement with "strongly agree"; "agree"; "slightly agree"; "slightly disagree"; "disagree"; and "strongly disagree". In Table 9 the responses "strongly agree"; "agree"; and "slightly agree" were collapsed into "agree". The responses "slightly disagree"; "disagree"; and "strongly disagree" were collapsed into "disagree".

The Mann-Whitney U test was performed comparing group means of the experimental and control groups at pretest and posttest in response to the five miscellaneous health care belief questions (see Table 10). In terms of Question #42, "I have sufficient knowledge to protect myself from getting AIDS", 19 (76%) of the experimental group and the exact same number of the control group indicated that they had enough knowledge before the AIDS lecture (see Table 9). Comparing posttest scores 21 (84%) of the subjects in the experimental group and 24 (96%) of the control group felt they had sufficient knowledge to protect themselves from AIDS. However, as seen in Table 10, these results were not statistically significant ($p > .05$).

Table 9**Frequency of Two Groups Responding to Five Miscellaneous Health Care Belief Item**

Items	Control Group (n = 25)		Experimental Group (n = 25)	
	Pretest	Posttest	Pretest	Posttest
#42 I have sufficient knowledge to protect myself from AIDS.				
AGREE	19(76%)	24(96%)	19(76%)	21(84%)
DISAGREE	6(24%)	1(04%)	6(24%)	4(16%)
#43. Hospital workers should not be required to work with AIDS patients.				
AGREE	6(24%)	5(20%)	3(12%)	1(04%)
DISAGREE	19(76%)	20(80%)	22(88%)	24(96%)
#44. If I had a choice I would choose to work with people with AIDS in preference to other types of patients.				
AGREE	16(64%)	17(68%)	23(92%)	22(88%)
DISAGREE	9(36%)	8(32%)	2(08%)	3(12%)
#45. If I got AIDS I would worry that people would think I am a homosexual.				
AGREE	6(24%)	3(20%)	7(28%)	7(28%)
DISAGREE	19(76%)	20(80%)	18(72%)	18(72%)
#46. I am morally offended by AIDS patients.				
AGREE	1(04%)	0(0%)	0(0%)	0(0%)
DISAGREE	24(96%)	25(100%)	25(100%)	25(100%)

Table 10

**Mann Whitney U Test for the Control Group (n = 25) and the Experimental Group (n = 25)
Responding to the Five Miscellaneous Health Care Belief Items**

Items	Control Group Mean	Experimental Group Mean	U	W	corrected 2 - tailed p
#42. I have sufficient knowledge to protect myself from AIDS.					
PRETEST	28.8	22.2	229.5	720.5	.08
POSTTEST	24.3	26.7	283.0	608.0	.52
#43. Hospital workers should not be required to work with AIDS patients.					
PRETEST	24.5	26.5	287.5	612.5	.61
POSTTEST	26.2	24.7	293.0	657.0	.68
#44. If I had my choice I would choose to work with AIDS patients in preference to most other types of patients.					
PRETEST	21.2	29.7	206.0	531.0	.03
POSTTEST	21.3	29.6	209.5	534.5	.03
#45. If I got AIDS I would worry that people would think I am a homosexual.					
PRETEST	27.0	23.9	274.7	675.5	.44
POSTTEST	25.8	25.2	305.0	645.0	.88
#46. I am morally offended by AIDS patients.					
PRETEST	28.2	22.7	244.0	706.0	.15
POSTTEST	27.9	23.0	251.0	699.0	.18

In response to Question #43, "Hospital workers should not be required to work with AIDS patients" 19 (76%) of the subjects in the control group and 22 (88%) of the subjects in the experimental group disagreed with this statement at pretest. Comparing posttest results 20% (80%) of the subjects in the control group and 24 (96%) of the experimental group disagreed with this statement. However, as noted in Table 10, these results are not statistically significant ($p > .05$). At pretest and after AIDS instruction an equal proportion of students in both the experimental and control groups indicated that hospital workers should be required to work with AIDS patients.

Question #44 states, "If I had my choice, I would choose to work with AIDS patients in preference to most other types of patients. On the pretest 16 (64%) of the subjects in the control group and 23 (92%) of the experimental group preferred to work with AIDS patients. At posttest 17 (68%) of the subjects in the control group and 22 (88%) of the subjects in the experimental group preferred to care for AIDS patients. As seen in Table 10, these results were statistically significant ($p < .05$). These responses indicate that the posttest results may be affected by pretest scores.

For question #45, "If I got AIDS I would worry that people would think I am homosexual" 19 (76%) of the control group and 18 (72%) of the experimental group disagreed with this statement at pretest. Comparing posttest scores, 20 (80%) of subjects in the control group and 18 (72%) of the subjects in the experimental group were not worried that people would think they were homosexual if they got AIDS. As seen in Table 10, these results were not statistically significant ($p > .05$).

For question #46, "I am morally offended by AIDS patients", 25 (100%) of the experimental group and 24 (96%) of the control group were not morally offended by AIDS at the pretest. On the posttest, 25 (100%) of the experimental group and 25 (100%) of the control group were not morally offended by AIDS patients. However, as seen in Table 10, these results were not statistically significant ($p > .05$).

Competency in Caring for an AIDS Patient

The results to the question, "Do you feel professionally competent to take care of a person with AIDS" are summarized in Table 11. Results indicate that 84% of the experimental group and 80% of the control group felt professionally competent at pretest. Comparing posttest scores, the experimental group scored 88% at posttest and the control group scored 84%. The high AIDS knowledge scores at pretest may explain this high level of competency. Pretest knowledge scores for the control and experimental groups were greater than 80%.

Summary

In summary, demographic characteristics of the sample were similar between nursing students receiving AIDS instruction and nursing students without AIDS instruction except for years of college and degrees or certificates. However, these were not influential factors when comparing the control and experimental groups. There was no significant difference between the two groups on posttest AIDS knowledge scores ($p > .05$). Therefore, the research hypothesis: Freshman nursing students presented with AIDS instruction will have more knowledge than freshman students without AIDS instruction was not supported. In addition, at

Table 11

Competency in Caring for an AIDS Patient (in %)

	<u>Pretest</u>		<u>Posttest</u>	
	No	Yes	No	Yes
Control Group (n = 25)	20	80	16	84
Experimental Group (n = 25)	16	84	12	88

pre-test, t-test results in Table 5 indicated that there was a significant difference between groups with respect to one of the five AIDS Health Care beliefs, health motivation ($p < .05$). However, ANCOVA results in Table 7 showed that there was no significant difference between the two groups on post AIDS Health Care Beliefs ($p > .05$). Therefore, the research hypothesis: the strength of health care beliefs related to AIDS susceptibility, seriousness, benefits, barriers and health motivation of freshman students with AIDS instruction was not supported.

CHAPTER V

DISCUSSION/IMPLICATIONS/CONCLUSIONS

Discussion

This study was designed to determine whether AIDS instruction 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 difference in knowledge or the strength of health care beliefs of the two groups after the AIDS instruction.

Although it is reasonable to expect that the AIDS instruction would increase knowledge and decrease fears, these expectations were not supported by the data. The knowledge level of this sample of fifty freshman nursing students, as measured by the AIDS Knowledge Questionnaire, was already high at pretest. It appears that a one hour lecture on AIDS and a discussion period with two persons with AIDS did not add to what the students had already learned. Perhaps the lecture was information repeated from earlier educational experiences. Maybe the nine o'clock AM time of day of the lecture influenced the students to ignore any information. Typically students in their freshman courses have clinical experiences during the evening hours.

This investigation replicated a research study conducted by Catherine E. Earl (1989). In addition to Earl's (1989) research, this study included the personal experience of two persons with AIDS. Despite the personal experience of AIDS patients, the results of this study were identical to Earl's (1989) study. Results of this study indicated no significant increase in AIDS knowledge and did not support

a change in attitude after the AIDS instruction. In a similar study conducted by Jemmott, Jemmott and Cruz-Collins (1992) results also indicated that nursing students' attitudes did not change as a consequence of nursing education.

Freshman nursing students in this study expressed a high level of confidence in their ability to care for AIDS patients. Only eleven nursing students out of the total sample of fifty students had actually care for AIDS patients. Similar results were reported by Synoground and Kellmer-Langan (1991). These researchers found that fifty-seven percent of nursing students in their study felt confident in their ability to care for AIDS patients. Those who had actually cared for AIDS patients had more positive attitudes than those students who had not cared for AIDS patients (Synoground & Kellmer-Langan, 1991).

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, Bell and Williams (1991) and Synoground and Kellmer-Langan (1991) used instruments with unknown reliability and validity in their studies, whereas the AIDS Knowledge Questionnaire and the Health Care Belief Scale used in this study had acceptable reliability and validity. Information on AIDS is constantly being revised. This may be a cause of confusion among health care professionals and nursing students.

In this research study, ninety-four percent of the students acknowledge that they had prior AIDS knowledge. At pretest students scored between 81% and 83% on the knowledge test in the experimental and control groups respectively. After the lecture both groups scored 83%

on the knowledge test. The pretest scores indicate the students already had knowledge about AIDS with little room for improvement. Maybe the students were bored, or maybe fear blocked data acquisition.

At pretest there was a significant difference in the two groups with respect to the health care belief, health motivation. However, at posttest the two groups in this study were not significantly different with respect to their health care beliefs on seriousness, susceptibility, benefits, barriers, or health motivation. In Earl's (1989) study, the control group showed a drop in susceptibility from pretest to posttest. Except for the construct susceptibility, results of Earl's 1989 research did not support a change in attitude.

In addition to studying the five Health Care Beliefs, this study also examined five miscellaneous items. There was a significant difference between experimental and control groups with respect to question #44 ($p < .05$). Question 44 states that if I had a choice I would choose to work with people with AIDS in preference to most other types of patients. On the pretest 23 (92%) of the subjects in the control group and 16 (64%) of the experimental group preferred to work with AIDS patients. At posttest 22 (88%) of the subjects in the control group and 17 (68%) of the subjects in the experimental group preferred to care for AIDS patients. These scores indicate that posttest results may be due to the pretest differences. These responses also reflect nursing students' favorable attitudes in caring for AIDS patients. One explanation for these responses may be the simple fact that only 5 students in the control group and six students in the experimental group had actually cared for a patient with AIDS.

Limitations and Strengths

In this study the threat of history was a limitation. There is new information about AIDS in the media each day providing constant changes in AIDS knowledge. During the time of this study famous personalities have been diagnosed with HIV and motion pictures such as "And The Band Played On" and "Philadelphia" were released. In addition, information about AIDS was available in professional journals and videos.

Threats affecting the accuracy of the results of the posttest regarding AIDS knowledge and beliefs could be: a) a student attended an educational workshop on AIDS, and/or was exposed to a friend, relative or patient with AIDS, b) knowledge that was current six months ago may no longer be accurate, 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, and d) the instrument may not contain an adequate sampling of test items in the AIDS Knowledge Questionnaire.

The selection threat to internal validity of the research design results from pre-treatment differences between experimental and control groups. However, in this study, pre AIDS knowledge and pre AIDS health care beliefs of the two groups were compared to assess the selection threat. Results showed they were homogenous with respect to pre AIDS knowledge and pre AIDS health care beliefs with the exception of the construct health motivation. In addition, ANCOVA was used in this study to control the effect of pretest knowledge and beliefs on the posttest scores.

Psychosocial variables such as health care beliefs can be

influenced by individual characteristics such as gender, marital status, age, and educational status. Nursing students have varied life experiences. This may have an effect on the responses of the students. Demographic data were collected to support the equivalency of the two groups.

Testing effects are the effects of taking a pretest upon the scores of a posttest. The freshman nursing students were tested and retested using the same instruments after only a two week period. Therefore, the subjects 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 this did not occur. Perhaps all students participated in the study to please their instructor and maintain a favorable position in the class. 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 and this anxiety could affect their responses to either knowledge or health care belief questions. 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 the instrument used was developed by Earl (1989) and piloted with a large number of students (N = 112) to establish reliability and validity. Although randomization

was not possible, a number of extraneous variables were controlled by testing the homogeneity of groups with respect to demographic variables, preknowledge and pre AIDS health care beliefs. In addition, ANCOVA was used to control the effect of pretest knowledge and beliefs on the posttest measures.

This study was not only a replication of Earl's 1989 research. It also included the personal experience of two persons with AIDS as an educational strategy in order to strengthen the knowledge and health care beliefs of freshman nursing students. Perhaps the thirty minute period of sharing personal experiences was not sufficient enough time for students to be involved in discussion. This may be the reason there was no significant difference in their AIDS health care beliefs at the end of this research.

Implications and Recommendations

This study has offered insights into the knowledge and health care beliefs of a group of freshman nursing students about AIDS. However, it has also raised issues and questions that need further clarification. The students in this study showed a high level of knowledge at pretest. Due to this "ceiling effect" there was little room for improvement. Perhaps students prefer the media as a resource for AIDS knowledge. New developments in research and breakthroughs are reported on a daily basis and perhaps this proves to be more exciting to student learning than in a classroom setting. Since a lecture presentation and personal experience with two persons with AIDS was not effective, restructuring and designing methods to present AIDS information must be developed. Spending less time on lecture and more time involving students in

smaller discussion groups is recommended for future research studies. Research must be continued to determine if inadequate AIDS knowledge and unfavorable beliefs result from fear, anxiety, pre-existing bias or inaccurate information.

Teaching efforts must involve pre-assessment of the learners' needs, beliefs, knowledge base, attitudes, culture and current patient care experiences. Small discussion groups may need to be implemented as a method of student nurse education. Preferably AIDS education should not be taught as an isolated subject but as part of a teaching plan to instruct students about communicable diseases. Ideally, formal lectures should be supplemented by individual or group counseling including persons with AIDS where confidentiality is maintained. It is important for nursing faculty to evaluate the knowledge and beliefs of their students in efforts to prevent the rendering of poor care to AIDS patients. Instructors must keep current on new developments about AIDS and be provided with accurate sources of AIDS information to overcome misconceptions about AIDS.

In the future, the increasing incidence of AIDS will place greater demands upon the nursing professions. Providing comprehensive education to nursing students will help eradicate fears and increase coping skills. Stressing the use of universal precautions as a safety mechanism for infection control is of major importance for quality nursing care.

In considering future research, the generalizability of the findings in this study must be determined. Sampling of various nursing programs in different geographical locations is indicated. Replication

of the study in similar settings with 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. Research should be conducted at different levels throughout their curriculum. Studies on students as they enter nursing school, at their halfway point, and when they graduate would be appropriate. A study of nursing faculty knowledge and health care beliefs is also needed.

Conclusions

Results of this study indicate that freshman nursing students are knowledgeable about AIDS. Nonetheless, nursing students are not exempt from the fears, anxieties and biases surrounding AIDS. Therefore, AIDS educational endeavors should emphasize attitudinal issues and a humanistic approach to patient care.

As the number of persons with AIDS grows and survival is extended, more nurses will be needed to provide acute and chronic care, and to actively participate in preventive efforts. Nurses must be knowledgeable about AIDS and the care of persons with AIDS. It is of utmost importance they be educationally prepared to give safe, competent and compassionate care.

Education has clearly been identified as one of the most important means of halting the spread of the human immunodeficiency virus. No greater challenge exists for nursing educators to prepare nursing students for the realities of AIDS. Strengthening nursing students' AIDS knowledge and health care beliefs is imperative in the future delivery of quality AIDS patient care.

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	Magazines	Classmate Notes	Other	Family/friend with HIV/AIDS	taken care of HIV/AIDS patient
<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"/>	<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 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 bedpan	<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 client 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 1	false 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"/>
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 with 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 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 of 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"/>

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
	6	5	4	3	2	1
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"/>
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"/>

	Strongly Agree 6	Agree 5	Slightly Agree 4	Slightly Disagree 3	Disagree 2	Strongly Disagree 1
23. If I practice the use of universal precautions in 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"/>
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"/>

	Strongly Agree 6	Agree 5	Slightly Agree 4	Slightly Disagree 3	Disagree 2	Strongly Disagree 1
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"/>
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 for a special problem.	<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 special 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
VERBAL SCRIPT

Hello freshman nursing students. My name is Suzie Themins, I am a nursing educator here at Bronson School of Nursing. I am also working on my Masters degree in Nursing at Grand Valley State University.

The purpose of this research study is to investigate freshman nursing students 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 questions 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 patients.

You have been selected to be involved in this research by virtue of the fact that you are a freshman nursing student. Confidentiality and anonymity will 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 study at any time. Thank you for your participation in this study.

APPENDIX E

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July 8, 1994

Susan Mahan
46484 Anthony Street
Paw Paw, MI 49079

Dear Susan:

This letter serves as permission to use the instrument entitled "AIDS KNOWLEDGE QUESTIONNAIRE" which was developed for research for my thesis at Grand Valley State University.

I would very much appreciate receiving information on the results of your research conducted with this instrument and to be invited to your research defense.

My best to you in your academic achievements. If I can be of any further assistance, please feel free to contact me.

Sincerely,

A solid black rectangular box used to redact the signature of Catherine E. Earl.

Catherine E. Earl, R.N., M.S.N.
Director of Nursing and Allied Health

CEE/par

LIST OF REFERENCES

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