

1-1-1994

## The relationship between nurses' knowledge of HIV, fear of AIDS, and use of universal precautions

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THE RELATIONSHIP BETWEEN NURSES'  
KNOWLEDGE OF HIV, FEAR OF AIDS,  
AND USE OF  
UNIVERSAL PRECAUTIONS

by

Carol Jones

A thesis submitted in partial fulfillment  
of the requirements for the degree of

Master of Science

in

Nursing

Department of Nursing  
University of Nevada, Las Vegas  
December 1994

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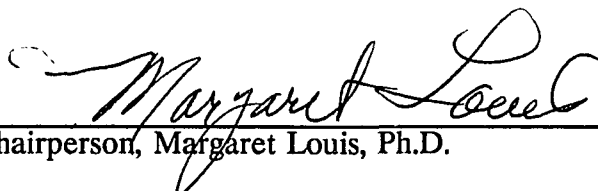
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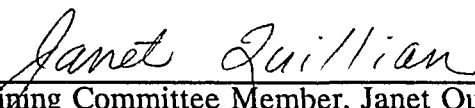
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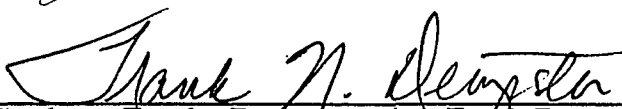
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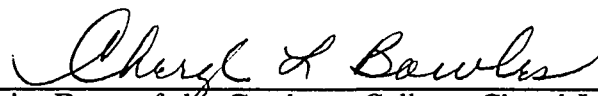
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December 1994

## ABSTRACT

This study examined the relationship between knowledge of HIV, fear of AIDS, and use of universal precautions in registered nurses. A descriptive survey design used a battery of questionnaires, including the National League for Nursing's Caring for Persons with AIDS Test, the University of Texas Fear of AIDS Scale, and a demographic questionnaire. The random sample consisted of 109 registered nurses working at a county hospital in the southwestern United States. The Health Belief Model guided the study. Research hypotheses were: 1) There is a positive correlation between knowledge of HIV/AIDS and use of universal precautions among nurses; 2) there is a positive correlation between fear of AIDS and use of universal precautions among nurses; 3) knowledge of HIV/AIDS correlates negatively with fear of AIDS among nurses; 4) selected demographic variables correlate positively with fear of AIDS among nurses, the variables of race/ethnicity, age, and level of nursing education showing the strongest positive correlation. Research hypotheses 1 and 3 were accepted.



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## CHAPTER 1

### Introduction

#### Background

Since the beginning of the AIDS epidemic in the United States in 1981, health care professionals have encountered a bewildering array of information, advice, warnings, and evolving myths regarding HIV. In 1985 the Centers for Disease Control and Prevention (CDC) advocated the use of Hepatitis B precautions when caring for patients who were HIV seropositive. In 1987, the CDC published their recommendations for universal precautions to be used for the protection of health care personnel when providing hands-on care with all patients, given the difficulty of identifying which clients might be infectious (Burtis & Evangelisti, 1992). Universal precautions assume that all persons are potentially infectious, and that uniform behaviors should be practiced by all workers at risk of coming into contact with the blood or body fluids of other individuals. As a result of the recommendations by the CDC for universal precautions, the Occupational Safety and Health Administration (OSHA) promulgated regulations in 1987-88 for the protection of workers throughout the health

care industry. A 1989 hospital survey by OSHA found that 95% of hospitals surveyed had implemented universal precautions (McDonald, 1993). All health care facilities receiving federal funds are required to be in compliance with OSHA regulations related to HIV.

At least one million Americans are HIV seropositive according to the most recent statistics from the CDC (Surgeon General's Report, 1993). Using the current CDC definition, nearly 400,000 have developed AIDS since the first reported cases in the U.S. in 1981 (Vella, Chiese, Volpi, Giuliano, Florida, Dally, & Binkin, 1994). With no immediate probability for a vaccine, and only symptomatic treatment available, the best defense against HIV seems to be infection control through the altering of human behavior (Becker & Joseph, 1988). This caveat includes health care workers.

Huerta & Oddi (1992) noted that the occupational risk of infection with HIV is about 0.5% per year of exposure; this is true even in the absence of specific infection control procedures (Meisenhelder & LaCharite, 1989). Jemmott, Freleicher & Jemmott (1992) agreed, and pointed out that in most cases it is the health care workers' own high-risk behaviors which lead to their becoming HIV positive. Sim (1992) states that health care workers must expect a certain degree of risk by the very nature of their professional practice, and certainly nurses have always dealt

with infectious processes, many of them potentially fatal. But Fowler (1988) pointed out that when the risk can be reduced the health care professional is ethically obligated to do so, and not to jeopardize her/his own safety through carelessness. If universal precautions are the standard for protection from bloodborne infections, not observing them surely constitutes careless and unethical behavior.

What is surprising and revealing about AIDS, its image and perceived consequences, is that universal precautions were not required prior to the AIDS threat to deal with other bloodborne infections. According to the National Academy of Sciences' 1988 AIDS update, health-care workers run a 6-30% risk of contracting Hepatitis B from a single needle-stick injury; the risk of acquiring AIDS in the same manner is estimated to be approximately 0.5% (Siminoff, Erlen & Lidz, 1991). The Hepatitis B virus is much more prevalent than HIV, and Hepatitis B infection is potentially as devastating as AIDS (Burtis & Evangelisti, 1992). For those persons who develop fulminant hepatitis B, the mortality rate is over 60%; those with chronic hepatitis have a 25-40% risk of developing cirrhosis or hepatocellular carcinoma (Tierney, McPhee, & Papadakis, 1994, p. 531). In the guidelines for universal precautions published by OSHA, Hepatitis B is cited as a greater risk to healthcare personnel than HIV (Miramontes, 1990). Yet HIV is seen as the greater danger, in spite

of its lower index of contagion. This may be due partly to the availability of the Hepatitis B vaccine, which OSHA has now mandated that all healthcare workers be offered if they have the potential for exposure to patients' blood or body fluids (McDonald, 1993).

Universal precaution guidelines (see Appendix A) assume that every client is potentially infectious and outline protective measures for various situations. This researcher has observed, both in the hospital and in an outpatient clinic setting, that use of universal precautions by nursing staff is highly variable, ranging from no precautions to overly cautious behavior (e.g., gowns and gloves for all patient contacts). This observation led to the question whether the variability in behavior might be related to level of knowledge about HIV, or to nurses' fears of becoming infected with the virus.

Kerr (1991) stated that to effectively alter nursing behaviors, HIV education must include both factual information and the exploration of fears, attitudes and myths. In looking at the effect of attitudes on quality of care, Siminoff, Erlen & Lidz (1991) remarked about the lack of exploration of a relationship between nurses' knowledge about AIDS and their fears of caring for AIDS patients. Kerr (1991) suggested that education programs about HIV need to provide individuals the awareness that they can control their situations to be safe from infection.

### Problem

Inconsistent use of universal precautions is a problem if we assume that such precautions are needed to protect health care workers from infection with HIV. Enforcing the use of universal precautions is warranted based on the fact that the federal government has incorporated universal precautions as guidelines for behavior by health care professionals, and compliance is a factor for allocation of federal funds. Use of these precautions is further warranted by the real risk, however small, of infection of the nurse with the virus through contact with blood or body fluids of infected persons. This study seeks to answer the question, "What is the relationship between use of universal precautions by nurses, their knowledge of HIV, and their fears of becoming infected with HIV?"

### Purpose

The purpose of the study is first, to identify the level of use of universal precautions by a sample of registered nurses, and to explore the relationship of the use or nonuse of these practices with the nurses' knowledge of HIV and/or fear of AIDS. Second, to identify demographic factors that correlate with attitudes about AIDS and universal precautions behaviors.



### Need for the Study

The study of the use of universal precautions by nurses is an important one for several reasons.

1. Most people infected with the virus are not aware that they harbor it (Damrosch et al, 1990); those who know they have it may not tell.

2. Protection from unreasonable risk should be available to all nurses.

3. Universal precautions are mandated by the federal government for institutions receiving federal monies. Therefore, not using them is not an option. It seems important to implement them correctly and efficiently, given that:

- a. Implementation of universal precautions entails expense and inconvenience for an already financially strapped and complicated business (Richardson, 1992);

- b. In an increasingly waste-conscious era, universal precautions require the use of vast amounts of disposable articles;

- c. Enforcement of universal precautions nationally will increase the federal bureaucracy and health care budget.

For all the above reasons it seems important to examine the actions, knowledge, and fears of nurses, the single largest group of health care

professionals who provide direct care to HIV patients, and consequently are at risk for contracting HIV from their clients.

The issue of homophobia has been a major topic in the research about nursing and AIDS. To have included it as a variable in the present study would have greatly increased the magnitude and complexity of the study. For the purpose of clarity and simplicity, the researcher chose not to examine homophobia in the present study.

As alluded to above, other bloodborne infections besides HIV, especially Hepatitis B, carry a considerable risk for health care workers. Education about universal precautions is important for all infectious disease processes. For the purpose of clarity and to limit the magnitude of the study, the researcher has elected to focus on HIV/AIDS exclusively.

## CHAPTER 2

### Literature Review and Conceptual Framework

#### Introduction

A number of studies have been done concerning the problem of infection control related specifically to the human immunodeficiency virus. HIV is seen as "special" due to its apparent 100% mortality, its insidious nature, its property of destroying immune competence, and the social stigmas attached to it. Along with the dawning awareness of these special characteristics of the virus came the perception that new methods of infection control were needed to protect health care workers from exposure to the virus. To meet this need guidelines for infection control practices were promulgated by federal agencies for use by all direct health care providers in all health care settings. The inconsistent use of these guidelines raises questions regarding the effect of health care workers' knowledge and attitudes on their infection control behaviors.

A literature review was conducted for the years 1988-1994, of research regarding nurses' knowledge and attitudes about HIV/AIDS, and their use of universal precautions.

### Universal Precautions

There is a great deal of research in the literature related to universal precautions, much of it examining the behavior of nurses. Gruber, Beavers, Johnson, Brackett, Lopez, Feldman & Ventura (1989) looked at nurses' knowledge of HIV and their use of universal precautions. Their literature review found evidence of resistance to the implementation of universal precautions. However, their study revealed no correlation between knowledge and practice of universal precautions, nor between demographics and use of universal precautions. They did not include racial or cultural data in their demographics. They suggested that perhaps increased knowledge led to increased confidence, and therefore decreased use of universal precautions. They questioned whether fear might be a major factor in behavior related to AIDS patients, but their study did not include the fear variable.

Van Wissen (1993) surveyed 286 hospital-based nurses. She found inconsistent use of universal precautions, lack of consensus regarding the adequacy of infection control information provided by the employer, and nearly unanimous agreement on the value of education programs about AIDS.

DeVries, Burnette and Redmon (1991) evaluated the effect of performance feedback on nurses' use of universal precautions. Glove-

wearing was the behavior selected to measure the use of universal precautions. The investigators found that while performance feedback did result in increased glove-wearing overall, nurses still failed to wear gloves under certain circumstances, regardless of their level of knowledge. Some reasons given were that patients were known friends, and/or that it was difficult to work with gloves on. Burtis and Evangelisti (1992) studied the change in attitudes of staff nurses concerning care of patients with AIDS and Hepatitis B after instituting universal precautions. They found that knowledge was not significantly increased following inservice education, and that overly cautious, yet sporadic, infection control behaviors continued after the inservice.

Richardson (1992) conducted research posing the question of relationships between levels of knowledge of human immunodeficiency virus, fear of immune deficiency syndrome, and universal precautions. Clearcut answers were not obtained, with Richardson concluding that one very significant finding was that 30% of her respondents did not have faith in the ability of universal precautions to protect them from HIV.

The role of fear in influencing attitude and behavior change, and the effect of fear on cognitive function have been studied extensively in the social sciences. Rogers developed the Protection Motivation Model, which relates fear to severity of the threat and its probability of occurrence.

According to this model, fear is a component of the perception of the seriousness of the risk. Fear may influence the cognitive processing of information, and promote either adaptive or maladaptive coping behaviors (Tanner, Hunt & Eppright, 1991). Cole and Slocumb (1993) found that increased knowledge was not effective in the presence of negative attitudes; thus nursing education must address both cognitive and affective needs in order to promote high-level care for AIDS patients.

The fear element seems crucial to understanding the human response to the AIDS risk. O'Donnell, O'Donnell, Pleck, Snarey, and Rose (1987) state that fear of contracting a disease may interfere with a health-care worker's objectivity concerning the transmissability of the disease. Thus fear may affect the ability to acquire and utilize knowledge, and may foment irrational behaviors in the face of a perceived threat.

Robbins, Cooper and Bender (1992) studied the relationship among attitudes, knowledge, and degree of contact with AIDS. They found that knowledge alone did not reduce levels of fear. Cole and Slocumb (1993) concluded from their research with 357 nurses that attitudes were an important determinant of the quality of care provided to AIDS patients, and therefore education programs should be guided partly by awareness of prevailing attitudes.

The same themes: action based on fear rather than objective rationales, the belief that risk remains high in spite of universal precautions, and sporadic use of established infection control procedures, were found in other studies as well (Jemmott, Freleicher & Jemmott, 1992; McNabb & Keller, 1991; Hunt, Waddell & Robathan, 1990; Breault & Polifroni, 1992; Wallack, 1989; and Gruber et al, 1989).

Wallack (1989) reported on research conducted in 1985 at Beth Israel Hospital in New York City, that investigated fears and attitudes toward AIDS patients among health care professionals. In this study members of ethnic minorities, especially Asians, were less trusting of information on safety and risk factors provided by the institution, and more uncomfortable dealing with AIDS patients than their American-born colleagues. This is of interest in terms of the development of appropriate educational programs for multicultural groups of health care workers; the present study seeks to add to the knowledge in this area.

Meisenhelder and LaCharite (1989) found no relationship between risk of exposure and fear of contagion. They described fear on a continuum from no fear to extreme fear, and stated that nurses' failure to observe universal precautions indicated a lack of fear of contagion. They found that even with evidence of knowledge about HIV, health care workers tended to mistrust the assurances of employers and government

agencies regarding risk factors. This seems to suggest that knowledge and attitudes are not necessarily congruent. In a later study Meisenhelder (1994) found that the two factors most likely to ameliorate fear of contagion among nurses caring for AIDS patients were knowledge about transmission and extended contact with a person with AIDS.

With regard to infection control, McNabb and Keller (1991) found that universal precautions were used correctly in an emergency room with 27 patients known to be HIV seropositive; however, the precautions were not taken with approximately 2300 other patients who had not been tested. Thus these health care workers were not employing "universal" precautions at all. It is unclear to this researcher what these results imply in terms of knowledge about HIV or fear of AIDS. In fact, such behavior may imply a lack of belief in the necessity for universal precautions. Hunt, Waddell, and Robathan (1990) found that opinions varied widely among nurses and physicians regarding the importance of these precautions. This issue is pertinent to the study, since some noncompliance with universal precautions may stem from a belief that the guidelines are excessive, unnecessary, or ineffective.

Tompkins (1991) suggested that infection control procedures already in place for dealing with Hepatitis B should have been adequate protection against HIV. She maintains that universal precautions were promoted as a



political tool for dealing with HIV, not as the logical evolution of infection control. This argument ignores the fact that universal precautions were advocated to protect against Hepatitis B as well as HIV. In fact, one might say that traditional infection control measures were always inadequate, and that the AIDS crisis simply further illuminated the already acknowledged need for universal precautions. It may be that there are two groups of health care workers: Those who see HIV as another infectious disease which should be handled similarly to Hepatitis B or other bloodborne infections, and those whose fear of AIDS causes them to place it in a category apart from other contagious diseases, and perceive a need for special protective measures.

Turner (1993) presented a critical review of research literature for the years 1988-1991, dealing with nurses' knowledge, attitudes and risk behaviors related to AIDS. She reported the recurring themes of knowledge deficits about HIV/AIDS, and the importance of the affective component in determining caregivers' behavior toward AIDS patients. A major caveat identified by Turner is the methodological weakness of most of the studies, due to absence of literature reviews, nonrandom sampling, lack of a conceptual framework, and failure to adequately address bias and limitations of the studies. She concluded that research to date (i.e., through 1991) had failed to discover how to effect positive and consistent

changes in nurses' knowledge and attitudes about AIDS, and in their use of universal precautions.

To summarize, review of the literature reveals a great deal of interest in the behaviors of health care workers related to HIV and universal precautions; however, the studies to date have raised more questions than they have answered. It is unclear to what extent the inconsistent use of universal precautions is related to either knowledge or fear of AIDS; furthermore, there apparently is considerable diversity of opinion regarding the appropriateness of the precautions, or their effectiveness. Further investigation of these issues is warranted.

The Health Belief Model provides a basis for understanding why health care personnel respond as they do to the directives of universal precautions. It served as the conceptual framework for this study.

### Conceptual Framework

The Health Belief Model (HBM) was developed by a group of social psychologists investigating the health behavior of individuals, especially with regard to health maintenance and prevention. In the 1950's the U.S. Public Health Service focused its efforts largely on prevention. The widespread failure of the public to avail themselves of the free screening tests and other low-cost preventive measures prompted the

research that led to the development of the Health Belief Model (HBM) (Becker, 1974).

The authors of the HBM were influenced strongly by the theory of Kurt Lewin. Lewin's theory reflects a phenomenological orientation, i.e., the belief that an individual's perception of the world, rather than the actual physical environment, is the primary determinant of his behavior. What the individual expects in uncertain situations, his goals and his behavior, will be shaped by his perceptions, which constitute reality for that person. In order to explain or modify behavior, the researcher must recognize, understand, and work within the perceived reality framework of the subject.

The Health Belief Model has been described as an expectancy model; i.e., it allows description and analysis of behavior under conditions of uncertainty (Maimon & Becker, 1974). Within this framework, health behavior is influenced by the following components:

1. The individual's readiness for change, mediated by two factors: Perceived susceptibility to a disease, and perceived seriousness of the risk;
2. Modifying factors, such as age, income, education, or medical history;

3. External cues, such as media advertising, advice from friends, or clearly perceived benefits to be derived from a given behavior (Edelmen & Mandle, 1990).

Having identified the individual's perception of his health state and/or disease risk, the HBM suggests that the likelihood of the person taking action depends on two factors: Perceived benefits of the action, and perceived barriers to the action (Edelman & Mandle, 1990).

A basic assumption of the HBM is the phenomenologic view that individuals will choose their behaviors based on their own perceptions of risk. Furthermore, these perceptions will develop and gel as a consequence of a whole host of factors, chief of which are the perceived threat of harm to the individual from the disease, and the perceived benefit if a particular health-promoting behavior is followed. Decisions about level of risk and degree of benefit are influenced by many modifying and external factors.

Richardson (1992) used the HBM in her study of knowledge of HIV, fear of AIDS, and use of universal precautions in a sample of nurses. This research followed her methodology closely with a different sample.

### Health Belief Model Concepts and Study Variables

Perceived susceptibility to a disease. Perceived susceptibility is related to knowledge of the HIV disease process, its pathophysiology, communicability, and epidemiology. Perceived susceptibility is related to degree of contagion and likelihood of exposure; these are cognitive concepts which are learned as part of the knowledge base of health care workers.

Perceived seriousness of the risk. This is related to the study variable fear of AIDS. Perceived susceptibility and perceived seriousness are somewhat overlapping. Both have a cognitive and an affective component, but the emphasis is arguably different. Whereas with the issue of susceptibility the individual is addressing the question, "How likely am I to acquire this disease?", the concept of seriousness of the risk poses the question, "How bad will it be for me if I do get this disease?" In discussing the historical development of the HBM, Rosenstock (1974) notes that perception of the seriousness of a risk will be a function partly of the extent of the emotional response created in the person by thoughts of having a particular disease. So fear of suffering, of death, or of social stigma, will be an important factor in an individual's perception of seriousness of a risk.

If the HBM is effective in describing and predicting behavior, the Lewinian viewpoint is supported, i.e., that it is the individual's perception that defines reality (Rosenstock, 1974). Therefore, fears about AIDS and beliefs about the effectiveness of universal precautions as protective against HIV, will influence behavior to a greater extent than academic knowledge about HIV. In his discussion of the HBM as it might be applied to preventive health behavior, Rosenstock (1974) stated that the relative importance of perceived seriousness of risk had not been clarified by research, but that studies had demonstrated that extremes of fear, either very high or very low levels, tended to result in dysfunctional behavior. Thus we may postulate that fear of AIDS will tend to promote irrational behaviors, such as inconsistent, excessive, or lack of use of universal precautions, depending on the degree of fear and the individual's integration of the cognitive and affective components in thinking about the disease.

Modifying factors and external cues. For this study these are demographic variables and environmental stimuli, respectively, which were identified through the use of a personal information questionnaire. Rosenstock (1974) explained that demographic variables were viewed by the developers of the HBM as modifying individual perceptions, especially perceptions of the benefits of given actions. Research has supported this

belief; for instance, women have consistently higher rates than men for utilization of health care services (Rosenstock, 1974). If in fact health beliefs and consequent actions are modified by demographic traits, it would be useful to elucidate this relationship, in order to tailor educational programs to meet the needs of a given target population.

Benefits and barriers to behavior. These relate to perceptions about universal precautions in the present study, to beliefs about their effectiveness and appropriateness, and use of the precautions in practice. According to the HBM, an individual may see any given action as "inconvenient, expensive, unpleasant, painful, or upsetting" (Rosenstock, 1974). These opinions would constitute barriers to acting. For example, the inconvenience and expense involved in implementing universal precautions may be barriers to utilization of these practices. Rosenstock explains further that if the motivation to act is strong (e.g., the desire to protect oneself from infection with HIV), and the benefits of a particular action seem clear (e.g., universal precautions are accepted as protection against HIV), but the barriers to action are perceived as great, the person may vacillate among different behaviors, or may minimize the threat by ignoring it (e.g., by rationalizing--"I'm in a low risk group;" "I've never stuck myself, so it won't happen now"). Exploring the attitudes of nurses concerning universal precautions may clarify whether the precautions are

perceived more as benefits or as barriers to dealing with HIV, and may help to explain the infection control behaviors of the respondents.

The HBM assumes that there is some trigger to action, some factor which finally prompts the individual to behave in a certain way, after susceptibility, severity of risk, and benefits and barriers have been internalized. This trigger focuses the person's attention on the issue and prompts him to act (Maimon & Becker, 1974). In this study the trigger might be the requirements of the workplace, seeing a friend die from AIDS, or some other stimulus. The personal information questionnaire attempted to identify possible triggers to action in this study.

### Assumptions

Assumptions for this study are:

1. That subjects do utilize universal precautions to some degree.
2. That self reporting of attitudes and behaviors will yield valid data (Richardson, 1992).
3. That the participants will honestly and accurately report their feelings and behaviors.

### Research Question and Hypotheses

The research question is, what relationship exists between knowledge of HIV, fear of AIDS, and use of universal precaution practices



in registered nurses? Research hypotheses are:

1. There is a positive correlation between knowledge of HIV/AIDS and use of universal precautions among nurses.
2. There is a positive correlation of fear of AIDS with use of universal precautions among nurses.
3. Knowledge of HIV/AIDS correlates negatively with fear of AIDS among nurses.
4. Selected demographic variables correlate positively with fear of AIDS among nurses; the variables of race/ethnicity, age, and level of nursing education will show the strongest positive correlation.

#### Definition of Terms

HIV: The human immunodeficiency virus which causes AIDS.

AIDS: Acquired immune deficiency syndrome, a disease process caused by the human immunodeficiency virus, characterized by the loss of immune competence, and manifested by the presence of one or more opportunistic infections and/or certain malignancies, progressive debilitation, and eventual death.

Universal Precautions: Infection control behaviors described by OSHA to maximize protection of health care workers from HIV and Hepatitis B.

Knowledge of HIV: Accurate relating of information concerning what is presently understood about HIV, measured in this study by the NLN Caring for Persons with AIDS Test.

Fear of AIDS: Fear of acquiring the disease caused by the HIV virus, measured in this study by the University of Texas Fear of AIDS Scale.

Use of Universal Precautions: Behaviors consistent with observation of the precautions described by OSHA to provide maximum protection for health care workers from HIV and Hepatitis B. Use of universal precautions is measured in this study by the NLN Caring for Persons with AIDS Test. The test has items relating to both the knowledge of AIDS variable and the use of universal precautions variable.

## CHAPTER 3

### Methodology

#### Research Design

The research design used a descriptive survey, which attempted to identify the participants' knowledge of HIV, their degree of fear of AIDS, and their use of universal precautions in direct client practice. The survey included a section on demographics to describe the sample.

#### Setting and Sample

The research setting was a county hospital in the southwestern United States. From the total population of over 700 nurses at the hospital, a random sample of 150 names was selected, using a table of random numbers and blindly selecting the starting point. Of the sample of 150 nurses, 144 agreed to participate.

Having obtained permission to conduct the survey at that institution (see Appendix B), the questionnaire packet was distributed by the researcher to all participants, with the assistance of the unit manager of each nursing unit. The sole criterion for a participant was that he/she be a registered nurse working at the hospital. All human subject rights

protocols at the hospital and the University of Nevada Las Vegas were observed (see Appendix B).

Data collection was accomplished by distributing to each participant a packet containing the following items:

1. A cover letter introducing the researcher and explaining the study. This letter also contained subject rights information, including assurance of confidentiality and of the right to refuse to respond to any or all of the survey (Appendix B).
2. The NLN Caring for Persons with AIDS Test (Appendix C).
3. The University of Texas Fear of AIDS Scale (Appendix C).
4. A personal information form (Appendix C).

To partially control for response bias, the order of presentation of the NLN Scale and the Fear of AIDS Scale were alternated in the packets, with half the participants answering the NLN survey first, and half answering the Fear of AIDS Scale first. Participants were instructed to complete the materials in the order in which they appeared in the packet.

#### Validity and Reliability of Tools

The NLN Caring for Persons with AIDS Test. This tool was used to assess the knowledge of AIDS and use of universal precautions of the

sample. It is copyrighted by the NLN Testing Service. They furnished the tool, along with validity and reliability information.

To establish reliability for this tool with this research sample, the following were considered:

1. Similarity between the samples; information received from the NLN confirms that they did reliability testing with a large group of nurses (N = 595).

2. The items were developed by two nursing practitioners in consultation with the NLN Test Service staff. Another group of item reviewers evaluated the items, and the test was given to 595 nurses in 54 institutions in 21 states. Test reliability was measured by the Kuder-Richardson Formula 20 with the following results:

	# Items	Mean	SD	KR20
Knowledge Items	21	15.68	3.10	0.68
Application Items	39	29.81	5.12	0.76

3. Cronbach's Alpha and split-half reliabilities were computed to test for internal consistency with the current sample.

To establish validity, the tool was submitted for review to experts in the Nursing Department of the University of Nevada Las Vegas (UNLV). Areas to be evaluated included AIDS, caring behavior (related to

willingness to care for certain populations of patients), and psychometrics (see Appendix B).

The University of Texas Fear of AIDS Scale. This instrument was developed in 1985-1987 to provide a reliable method of measuring fear of AIDS (Richardson, 1992). The initial sample consisted of 90 freshmen in introductory psychology courses. Based on medians and Q values, items were deleted until the final scale contained 14 items. Alternate forms of the scale were administered to different groups of psychology students, and reliability coefficients were computed. Cronbach's alpha for the final 14-item scale was .80 (Bouton et al., 1987).

Construct validity was established by factor analysis, which yielded three factors which accounted for 52.4% of the variance. These factors were labelled "Fear of Contact," "Public Health," and "Personal" (Bouton et al., 1987).

Richardson (1992) conducted a pilot study of the tool to determine the reliability of its use with nurses. She obtained a coefficient alpha of .83. She concluded that the instrument was reliable for her sample. She did not conduct a separate examination for validity.

A reliability check was conducted for this scale in a similar fashion to the NLN test; it also was submitted for review by experts, as with the

NLN tool, to establish content validity. Comments by the expert reviewers are included in Appendix B.

The personal information form addressed a number of demographics (see Appendix C). Clarity of the items was checked by giving the form to a group of ten nurses for review and feedback, prior to distributing the packets to the study sample. No problems were identified regarding the clarity of the tool.

## CHAPTER 4

### Results

This chapter will present results describing the sample of participants. Analyses related to the hypotheses will follow.

#### Demographics of the Sample

The sample for this study was comprised of 109 registered nurses working at an urban county hospital in the southwestern United States. The random sample of 150 nurses was selected from the total population of over 700 registered nurses at the hospital. Of these 150, 144 agreed to participate in the study. Thirty-five packets were returned blank or only partly completed; thus the compliance rate was 72.6%. To protect the anonymity of the participants, no names were used on the questionnaires. Tables 1-5 enumerate selected characteristics of the final sample of 109 nurses.



Table 1

Summary of the Age of the Participants

Age in Years	N	Percent
1. $\leq 30$	15	13.8
2. 31-45	53	48.6
3. $\geq 46$	39	35.8
Missing	2	1.8
Total	109	100.0

$\bar{X} = 2.252$       S.D. = 0.728

Table 2

Marital Status of the Participants

Marital Status	N	Percent
1. Married	69	63.3
2. Never Married	17	15.6
3. Divorced/Widowed	20	18.4
Missing	3	2.7
Total	109	100.0

Table 3  
Highest Level of Nursing Education of Participants

Level of Education	N	Percent
1. RN Diploma	27	24.8
2. ADN	41	37.6
3. BSN	38	34.9
4. MSN	3	2.8
Total	109	100.0

Table 4

Responses to the Question"Do You Consider Yourself Religious?"

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Response	N	Percent
1. Yes	68	62.4
2. No	41	37.6
Total	109	100.0

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Table 5

Responses to the Question"Do You Have Children at Home?"

Children at Home	N	Percent
1. Yes	58	46.8
2. No	51	53.2
Total	109	100.0

Ninety-four percent of the participants consider their health to be "good" to "excellent." Seventy percent indicated they "do not smoke now," and over half of those persons "never did." Eighty-four percent work full time, and 89% indicated they regularly work with HIV/AIDS patients.

The majority stated they had six or fewer hours of inservice education on either HIV (61%) or universal precautions (83%), and 70% indicated they had no role model at work for use of universal precautions.

Concerning their beliefs about HIV, 52 participants (48%) believed that modes of transmission of HIV are not well established. Ninety-three, or 85%, believed they could contract HIV through their work, and 45 (41%) were not confident that use of universal precautions would protect them from HIV. Sixty-four (59%) believed universal precautions provide adequate protection against HIV.

In this study 37 participants (34%) reported they knew someone (besides patients) who is HIV positive. These participants scored somewhat higher on the use of universal precautions than those who did not know someone who was HIV positive.

Ethnic groups that have been identified in the literature as having distinct attitudes about AIDS patients are Afro-American, Asian, Filipino, and Hispanic. Due to the small number of participants in each of these

groups, no statistical analyses were done and no conclusions drawn regarding responses by ethnic groups from this study.

The majority of participants stated that they practiced good health behaviors: no smoking (77%); use of seatbelt (80%); had hepatitis B vaccine (71%); and daily activities to promote good health (89%).

### Instruments

#### Knowledge of HIV/AIDS

The NLN Test uses a multiple choice format; scores on the test for knowledge of HIV had a possible range of 0-21. The range of scores for this sample was 6-20. The mean was 13.8 and the standard deviation was 3.59. The higher the score the greater the knowledge level. Thirty-two respondents (29%) scored 80% or higher on the knowledge questions; 22 (20%) scored 50% or lower. These results indicate a wide variability of knowledge of HIV in this sample, based on scores on this instrument.

Reliability testing was done for this test. Cronbach's Alpha and split-half reliabilities were computed; results are shown in Table 7.

#### Fear of AIDS

The University of Texas Scale used Likert-type responses that ranged from 1 (strongly agree) to 5 (strongly disagree). The lower the

score, the greater the fear of AIDS. A midrange score suggests the respondent is undecided. For the study sample, the individuals' score for the 14 items ranged from 18 to 58 (the possible range of raw scores is 14 to 70), with a mean of 36.385 and a standard deviation of 8.47. Table 6 gives the distribution of scores for this sample.

Reliability testing was done for this tool. Cronbach's Alpha and split-half reliabilities were computed. Table 7 summarizes the results.

#### Use of Universal Precautions

Fifteen questions on the NLN Test dealt directly with use of universal precautions. Scores ranged from 3-15 correct, with a mean of 10.78 and standard deviation of 2.85. Forty-six participants (42.2%) responded correctly to 80% or more of the questions. Table 6 gives the breakdown of scores.

#### Testing the Hypotheses

In this section each hypothesis will be discussed, including results obtained and whether the assumptions were met for the statistical analysis.



Table 6

Distribution of Scores for Knowledge of HIV/AIDS, Fear of AIDS, and  
Use of Universal Precautions

Instrument	Range	N	Mean	S.D.	Skewness
1. NLN Test	6-20	97	13.832	3.59	-.552
2. Fear of AIDS	18-58	109	36.387	8.47	.155
3. Use of U. Prec.	3-15	97	10.78	2.85	-.593

Table 7

Reliability Statistics for NLN Test and U. of Texas Tool

Tool	N	Number of Items	Cronbach $\alpha$	Guttman Split Half	
				Part 1	Part 2
NLN Total Test	97	60	.89	.78	.86
Knowledge	97	21	.76	.59	.66
U. Prec.	106	15	.71	.52	.67
Fear of AIDS	109	14	.80	.78	.47

Hypothesis 1. There is a positive correlation between knowledge of HIV/AIDS and use of universal precautions among nurses.

A scatterplot was run to determine the relationship between these variables; it showed a linear relationship. The Pearson Product Moment Coefficient was calculated between Knowledge of HIV total scores and total scores for Use of Universal Precautions. Results were  $r = .5687$  and  $p = .01$ . The findings indicate about 28% of the variance accounted for between these two variables, and they allow acceptance of the research hypothesis that there is a positive correlation between knowledge of HIV/AIDS and use of universal precautions.

Hypothesis 2. There is a positive correlation between fear of AIDS and use of universal precautions among nurses (i.e., a higher level of fear will prompt more consistent use of universal precautions).

The scatterplot for these variables showed a negative linear relationship. The histograms for scores on the Fear of AIDS Scale and for Use of Universal Precautions had a relatively normal distribution, with a skewness of .155 for Fear of AIDS and -.593 for Use of Universal Precautions. The Pearson Product Moment Coefficient was calculated for Fear of AIDS with Use of Universal precautions. Results were  $r = -.5199$  and  $p = .01$ . The findings do not allow acceptance of the research hypothesis; there is a negative correlation of fear of AIDS with use of

universal precautions. Therefore the null hypothesis is retained. This significant finding is the opposite of the predicted and expected result.

Hypothesis 3. Knowledge of HIV/AIDS correlates negatively with Fear of AIDS among nurses.

The plot for these variables showed a linear relationship in a negative direction. As noted above, these variables had a relatively normal distribution. The Pearson Product Moment Coefficient was calculated for these variables. Results were  $r = -.3949$ ,  $p = .01$ . These findings allow acceptance of the research hypothesis; knowledge of HIV/AIDS is negatively correlated with fear of AIDS. The findings indicate that about 15.5% of the variance between these two variables was accounted for. Correlation statistics for the major study variables are summarized in Table 8.

Table 8

Pearson Produce Moment Correlation Coefficients for Major StudyVariables

Hypothesis	N	Pearson r	p (2-tail)	%Variance
1. Knowledge with U. prec.	97	.5687	.01	28.0%
2. Fear with U. prec.	109	-.5199	.01	27.0%
3. Knowledge with Fear	97	-.3949	.01	15.5%

Hypothesis 4. Selected demographic variables correlate positively with fear of AIDS among nurses; the variables of race/ethnicity, age, and level of nursing education will show the strongest positive correlation.

As stated previously, the question of race/ethnicity could not be adequately addressed in this study due to the small numbers of participants in all ethnic groups except caucasian American. Anova was computed for the variables of age and level of nursing education, with the dependent variable Fear of AIDS. No significant relationship was found for either independent variable.

Due to the structure of the demographic questions, the data collected for a number of variables were not interval-level. Therefore the assumptions for the use of parametric analysis were not met, and nonparametric analyses were used.

Other demographic variables were included in this analysis, to identify how these variables might fit into the Health Belief Model.

Spearman correlation was computed for age, religiosity and number of children at home with Fear of AIDS and Use of Universal Precautions. No significant relationship was found. Based on these findings, the research hypothesis was not supported, and the null hypothesis was retained.

Several questions arose from examination of the data, and consideration of it within the framework of the Health Belief Model. For example, are hours of inservice education related to knowledge of HIV/AIDS or fear of AIDS? Does the level of nursing education or number of hours of inservice affect one's belief about modes of transmission of HIV, or about the effectiveness of universal precautions? Did those persons who believed universal precautions are effective score higher on Use of Universal Precautions? Did having a role model for universal precautions affect scores on the universal precautions questions?

Pearson's  $r$  was computed to test the relationship of hours of inservice on HIV with Knowledge of HIV/AIDS;  $r = .2866$ , and  $p = .01$ . For the Fear of AIDS Scale,  $r = -.2641$ , and  $p = .01$ . Therefore, with more hours of inservice, knowledge increased and fear decreased. For the Use of Universal Precautions Test, there was no significant relationship.

Chi Square was calculated to test some of the remaining questions. No significant relationships were found for the paired variables level of nursing education and hours of inservice education with belief that modes of transmission are well established, or that universal precautions provide adequate protection from HIV.

It was notable that 52 participants (48%) believe that modes of transmission of HIV are not well established. The question arose whether

the level of nursing education was related to belief about modes of transmission. Nurses educated in three-year diploma schools have had a great deal of clinical exposure to infection control practices. Nurses with a baccalaureate presumably have been educated in pathophysiology and have developed critical thinking skills beyond the level of the nurses with an associate degree. In examining the relationship between belief regarding modes of transmission and the level of nursing education of the participants, it was found that a majority of nurses with a Diploma, a BSN or an MSN believed that modes of transmission are well established. However, only 39% of the Associate Degree nurses held a similar belief.

The researcher wondered whether use of universal precautions was related to belief that the precautions will provide protection from infection, or to having a role model for use of the precautions. T-tests were run to test for these relationships, with Use of Universal Precautions as the dependent measure. Results, summarized in Table 9, show no significant relationship between these variables.



Table 9

Relationship of Use of Universal Precautions (U.P.) to Belief They  
Provide Adequate Protection and to Having a Role Model for  
Their Use\*

Variable	Group	N	t	df	2-tail Prob.
1. Belief that U.P. will Protect	1	63	0.12	35.33	0.906
	2	20			
2. Having a role model	1	27	0.07	43.07	0.947
	2	74			

\*The requirement for homogeneity of variance was not met, so the separate t-test was run.

Scores on the questions dealing with the use of universal precautions showed considerable variability. The researcher wondered what variables accounted for the scores obtained on these questions. The variables which showed a linear correlation with Use of Universal Precautions were utilized to run a multiple regression analysis. Use of Universal Precautions total score was the dependent variable, and Knowledge of HIV, Fear of AIDS, and highest level of nursing education were the independent variables. Richardson (1992) utilized these variables and did a regression analysis in her study. She also included as an independent variable, "Belief that modes of transmission of HIV are well established." However, with this sample, beliefs about certainty of modes of transmission did not show a relationship with Use of Universal Precautions, and therefore this variable was not included in the regression.

In the regression analysis Knowledge entered at step one, and Fear at step two. Table 10 summarizes the results. The table indicates that approximately 40.7% of the variance was accounted for by these two variables.

Table 10

Multiple Regression with Use of Universal Precautions as the Dependent Variable

Step	R <sup>2</sup>	R <sup>2</sup> Change	F	Signif. F
1. Knowledge	.32344	.32344	45.4	.0000
2. Fear	.40701	.08358	32.26	.0000

In summary, based on analysis of the data, research hypotheses 1 and 3 were accepted. Hypotheses 2 and 4 were not supported, and the null hypotheses were retained.

## CHAPTER 5

### Discussion

#### Intent and Format of the Study

This researcher had observed considerable variability in the use of universal precautions among the nurses at one medical center. Discovering the reasons for this variability will help identify ways to improve the use of universal precautions by registered nurses in acute care settings.

Therefore, this research was conducted with two goals: To test previously conducted research, and to identify areas of need for inservice education related to use of universal precautions within the study sample. There has been a great deal of research related to nursing and HIV/AIDS, and a number of studies have looked at universal precautions in that context.

This research followed closely the format of a study conducted by Richardson (1992), in order to test her findings with a different sample.

In a summary of nursing research related to knowledge and attitudes about AIDS, and use of universal precautions among nurses, Turner (1993) stated that most of the studies she reviewed, covering the period 1988-1991, were weak for one or more of the following reasons: Lack of a literature

review; lack of a conceptual framework; nonrandom sampling; and lack of consideration of the bias and limitations of the study. The present research attempted to deal with each element of this criticism, as follows:

1. A literature review was conducted for the years 1987-1994, using Medline and CINAHL, as well as a hand search to identify pertinent studies.
2. The Health Belief Model (HBM) was selected as the conceptual framework to guide the study, and to structure the discussion of the results.
3. From the total population of over 700 registered nurses at the institution, the sample was obtained by selecting 150 names, using a table of random numbers.
4. Careful consideration was given to the limitations of the study; they will be discussed in this chapter, along with suggestions for future research.

#### Relationship of Concepts in the Health Belief Model (HBM) to Study Findings

According to the HBM, to take a particular action to prevent acquiring a disease, an individual must believe he/she is susceptible to the disease; that acquiring the disease would be a bad, or fearful, event; and that the action in question would significantly reduce the chance of

becoming infected. In this study, only 29% of participants scored 80% or higher on the knowledge of AIDS questions. This tool was originally thought by the researcher to be a measure of a person's awareness of susceptibility. However, "knowledge of HIV" includes a great deal more than awareness of susceptibility, and therefore the low percentage of high scores does not necessarily indicate a lack of awareness of susceptibility. Another reason the scores were lower than expected could be that many of the questions on the tool require detailed knowledge about drugs and other aspects of treatment of AIDS patients. Persons not working specifically on an AIDS unit may not have such a depth of knowledge about treatment, yet still may be aware of their susceptibility to the disease. Perhaps a different tool would provide a better measure of this concept. Knowledge of HIV does show a positive correlation with use of universal precautions (Table 8), which supports the model.

As discussed in chapter two, perceived seriousness of risk was measured by the University of Texas Fear of AIDS Scale. Overall, as seen in Table 6, participants' responses reflected a moderate fear of AIDS, with few persons at either the high or low ends of the scale. It should be noted that if the mid-range scores reflected a preponderance of individuals' responses of "3" on the scale, the interpretation of the scores would be that the respondents were undecided, rather than moderately afraid. However,

the individual scores were spread across the possible range of responses, from 1-5, and the mean scores grouped around "3" do not necessarily indicate indecision. This is a caution/limitation in interpreting the findings, however.

The negative correlation of level of fear with use of universal precautions suggests that perception of the seriousness of the risk has some impact on behavior. However, increasing fear apparently tends to decrease use of universal precautions. This result is directly opposite to the expected findings, and the negative correlation of  $-.5199$ , significant at the  $.01$  level, suggests that fear may play an important role in influencing universal precautions behavior. If fear of AIDS is a measure of perception of the seriousness of the risk, this finding does not fit the model. It does, however, agree with other writings regarding the effect of fear on behavior (O'Donnell, O'Donnell, Pleck, Snarey, & Rose, 1987; Robbins, Cooper & Bender, 1992; Tanner, Hunt & Eppright, 1991; Cole & Slocumb, 1993). Further study is needed to examine this relationship of fear of AIDS to use of universal precautions.

Another variable that might affect avoidance behavior is beliefs about whether modes of transmission are well established, since according to the HBM, what a person believes to be true constitutes reality for that



person. Scores for use of universal precautions in this sample did not vary based on variation in beliefs about modes of transmission.

Whether the action in question (use of universal precautions) would effectively prevent exposure to the disease is an important variable in the HBM. In the present study, 59% of the participants believe that universal precautions will protect them from infection with HIV; 19% believe they will not; 22% are unsure. Scores on the use of universal precautions did not vary significantly between these groups, as shown in Table 9. These findings do not strengthen the credibility of the model.

The HBM states that modifying factors and external cues affect individual behavior with regard to the major variable. In this study age, religiosity, whether there are children at home, and level of nursing education were seen as possible modifying factors. External cues were knowing people who are HIV-positive and caring for patients who are HIV-positive.

The demographic factors of age, religion, and having children at home were not related to use of universal precautions in this study, nor to scores on the Fear of AIDS Scale. Those participants with higher levels of nursing education tended to score higher on the use of universal precautions questions. This may suggest that education increases rational

behavior; it also may reflect an increased ability to integrate organizational imperatives, and may have little to do with clinical considerations.

Meisenhelder (1994) found that having a personal relationship with someone who is HIV positive tended to reduce levels of fear about HIV/AIDS. In this study personal involvement with HIV tended to increase use of universal precautions. The question therefore arises whether personal experience with HIV increases awareness of the need for universal precautions, and whether this behavior is related to fear, or simply to a more rational approach to dealing with the disease. This data neither supports nor refutes Meisenhelder's findings, but suggests an avenue for further study. In this research the nature of the personal involvement was not defined, that is, whether it was with a casual acquaintance, a close friend, or a close or distant relative. Elaboration of this variable would be helpful in analyzing the data.

The HBM defines benefits and barriers to action that influence a person's behavior. The main benefit to the individual from the use of universal precautions is protection from infectious disease, specifically HIV. Scores on the use of universal precautions questions were similar regardless of the person's beliefs about the effectiveness of the precautions. It is uncertain what this implies. Perhaps nurses use universal precautions out of fear, even though they lack confidence in them, or perhaps they are

simply following the rules of the institution. An important caveat in this regard is the role of peer pressure. It is probable that nurses pattern their behavior after that of their colleagues; if some health care professionals are inconsistent in their use of universal precautions, those around them may consciously or subconsciously mimic their behavior. This form of role modeling is difficult to identify formally, yet it may be a strong influence on behavior.

Barriers to the use of universal precautions were not specifically addressed in this study. Several articles in the literature review discussed perceived barriers (Burtis & Evangelisti, 1992; DeVries, Burnette, & Redmon, 1991; McNabb & Keller, 1991). It is not known whether the participants' use of universal precautions in this study is affected by barriers to action, or if it is, what those barriers may be.

In this study triggers to action were identified as having a role model for universal precautions and having had inservice education regarding HIV or universal precautions. Use of Universal Precautions could not be distinguished by the existence of a role model or by belief that the universal precautions behavior will protect one from HIV. Amount of inservice education also was not related to scores on the use of universal precautions. These findings suggest that these variables are not triggers to action for this sample. To explore this idea further, the nature

of the inservice programs should be defined, and participants identified by hospital department. Some departments at the medical center have periodic classes, bulletin board updates, posters, and so on, while other departments do not. Frequency and type of exposure to information may affect scores on the use of universal precautions. Analysis of the data obtained from such an inquiry may suggest particularly effective methods of educating nurses about universal precautions.

#### The Health Belief Model as a Predictive Model

The HBM was developed to predict the likelihood of a person taking a particular action to avoid a threat to his health. Results of this study provide support that the model has some limited predictive utility; it must be remembered that discrepancies in the fit of these results with the model may be related to limitations in the study rather than in the model.

The positive correlation of knowledge of HIV/AIDS with the use of universal precautions fits the model. However, scores on use of universal precautions did not vary according to the participants' responses about their beliefs regarding the effectiveness of the precautions. Since a basic premise of the HBM is that the individual's perception constitutes reality for that person, this finding does not support the model.

The only external cue identified in this study which related at all to use of universal precautions was whether the participant knew persons who are HIV-positive. The two triggers to action identified, having a role model for use of universal precautions and having inservice education, did not predict the level of use of universal precautions.

Based on the results of this research, the HBM may have some predictive value, but needs to be further tested with a larger sample and revisions to the study design. Future studies would benefit from revision of the Personal Information Questionnaire to more clearly identify benefits, barriers, and triggers to action. Also, as noted above, sample selection could be tailored to provide for analysis of difference according to ethnic groups. Instruments other than those utilized in this study may be available that would more easily lend themselves to analysis of the research hypotheses in this study.

#### Comparison of Findings with Those of Previous Research

This research followed closely the format of a study by Richardson (1992). Her random sample consisted of 159 registered nurses from two medical centers in the northeastern United States. She used the NLN Caring for Persons with AIDS Test, the University of Texas Fear of AIDS Scale, and a personal information questionnaire similar to the one used in

this study. Her results showed that knowledge and fear were related to the use of universal precautions ( $p < .01$ ). In her sample, belief that modes of transmission are known was related to use of universal precautions, as opposed to the findings in this study. In her regression analysis, 32% of the variance for the variable "compliance with universal precautions" was attributed to the three variables, knowledge of HIV, fear of AIDS, and belief that modes of transmission are well understood.

The results of this research agree in part with Richardson's findings. However, in this study there was no correlation between belief that modes of transmission are known and the major study variables of Knowledge of HIV/AIDS, Fear of AIDS, and Use of Universal Precautions. In the regression analysis in this study, 40.7% of the variance for the variable "use of universal precautions" was accounted for by knowledge of HIV/AIDS and fear of AIDS. In Richardson's study 28% of the variance was accounted for by these variables.

For the results obtained in this study to be meaningful and generalizable to other population groups, the sample should be representative of the larger population of registered nurses. It is not certain that the 109 participants in this study are representative of the population of registered nurses working in acute care settings in Southern Nevada. However, the medical center selected has approximately 500

beds, and employs over 700 registered nurses. It serves a cross-section of the population, including indigent as well as insured patients. The sample was obtained by random selection from the total population of registered nurses at the medical center. Given these considerations, the sample should be a fair representation of a cross-section of nurses, at least in this urban southwestern setting.

#### Limitations of the Study

This research was conducted using a small sample ( $N = 109$ ) from a single institution. The medical center selected is a county hospital and a teaching facility for the state's school of medicine. Therefore, results may not be generalizable to other population groups, although as noted above, the researcher believes that the sample may represent the population of nurses in one southwestern city who work in an acute care facility.

An original intent of this study was to examine differences among different ethnic groups in their attitudes toward AIDS patients. The characteristics of the sample precluded such an analysis. The majority (55%) of the sample identified themselves only as caucasian American, and other ethnic groups were represented only in very small numbers. Therefore, extreme caution is required in applying conclusions from this study to other ethnic groups.

The issue of homophobia was deliberately excluded from this study, because the researcher identified this variable as a major area of investigation, and chose to limit the scope of the present study, in the interest of clarity and simplicity. Homophobia has been identified in the literature as a major concern in the health care of HIV-positive patients. It is not identical with the variable "fear of AIDS," although there may be a correlation of these variables. Excluding examination of homophobia from the study may limit the predictive power of the results.

From the standpoint of the HBM, the concept of barriers to action was not addressed in this study. In replicating this research, the personal information questionnaire might be revised to include questions concerning barriers to action, such as inconvenience of using the precautions. One possible barrier that was noted in the results was the belief of 41% of the participants that universal precautions might not protect them from infection. If this is identified as a barrier to action, the HBM is not supported in this regard, because this variable was not a significant factor in the variability of scores measuring the use of universal precautions with this sample.

The reliability assessment of the tools supported the appropriateness of their use with this population. However, in the Guttman split-half analysis of the University of Texas instrument, the results were uneven.



This should be noted in consideration of the results of the fear variable, since it may indicate limited generalizability of the results for that variable.

Finally, the bias associated with self-reporting permeates this study, as it does much of the research reviewed in the literature. Personal accounts of behavior reflect the perception of the respondent, and may also be altered by the respondent's desire to be viewed in a certain way. A premise of the HBM is that individual perception constitutes reality for that person, so in that context the self-report bias is acceptable. However, the analyst must remain aware of the possibility of deliberate bias introduced by respondents wishing to make a certain impression.

#### Implications and Recommendations for Future Research

The results of this research generally are parallel to those of similar studies reviewed in the literature. The present study raises a number of questions, and has implications for nursing educators, administrators and researchers.

Forty-one percent of the participants indicated a lack of confidence that universal precautions would protect them from HIV infections, yet 90% of these persons believed that they could contract HIV through their work. This may indicate a lack of confidence in either scientific or

governmental authorities, or it may reflect a fear of AIDS that overcomes logical thinking.

The variability of scores on the knowledge questions indicates a need to develop more effective educational methods and materials, since the majority of nurses work with HIV patients (89% in this sample), but a much smaller percentage scored high on the knowledge test.

The scores on the Fear of AIDS Scale did not yield clearcut answers about the role of fear in influencing the behavior of nurses. Although there is apparently some relationship of fear to the use of universal precautions, the expected positive correlation between these variables was refuted by the findings of this research. The fears and attitudes of nurses related to the care of HIV patients in general, and the use of universal precautions in particular, need to be addressed in continuing research, to understand and address the educational needs of this population.

Given the number of ethnic minorities represented in the population of nurses in the United States, cultural differences need to be addressed in designing educational and inservice programs. Future research intending to examine cultural differences should design the sample selection process to provide adequate numbers of participants, randomly selected, from the ethnic groups under consideration.

The variables influencing use of universal precautions are complex. Future research needs to address barriers to their use, and should look at the extent to which their use reflects clinical concerns, and to what extent it is simply a response to organizational rules and regulations. It is certain that there are important determinants of behavior that have not been addressed, or relationships among variables that have not been adequately evaluated in this research. In the interest of protection of nurses, consistency in patient care, and adherence to governmental regulations, further research is needed to illuminate the needs of the target population, and to design educational programs to meet those needs.

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## **APPENDIX I**

### **Universal Precautions**



Universal Precautions  
Defined by the Occupational Safety  
and Health Administration

Universal precautions are recommended to be used with all patients to prevent exposure to blood, body fluids, or other potentially infectious substances. All blood and body fluids are to be considered potentially infectious.

1. Contaminated needles must not be recapped, bent, or broken; they and all other contaminated sharps must be disposed of in special containers.
2. Gloves shall be worn when contact with blood or body fluids is anticipated.
3. Masks, gowns, and goggles or face shields should be worn as needed for protection from splashes of blood or body fluids.
4. Hands must be washed after each patient contact, and immediately upon removing gloves. Hands or other skin surfaces must be washed immediately after any contamination with blood or body fluids.

Source: Federal Register Part II, Department of Labor, Occupational Safety and Health Administration, 56(235), 64176-64178.

## APPENDIX II

### Correspondence

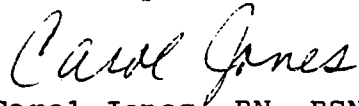
6516 Lowden Lane  
Las Vegas, Nevada 89107  
April 5, 1993

Robert K. Young, Ph.D.  
Department of Psychology  
The University of Texas at Austin  
Mezes Hall 330  
Austin, Texas 78712

Dear Dr. Young:

As a graduate student in nursing at the University of Nevada, Las Vegas, I am planning a thesis surveying the compliance of nurses with universal precautions, and attempting to correlate these practices with their knowledge and fear of AIDS. I am writing to request permission to use the University of Texas Fear of AIDS Scale as part of the survey packet, and also to request information concerning the development of the instrument, and its validity and reliability. Thank you in advance for your kind attention to this; I appreciate your assistance.

Sincerely,

A handwritten signature in cursive script that reads "Carol Jones".

Carol Jones, RN, BSN, MA



DEPARTMENT OF PSYCHOLOGY  
THE UNIVERSITY OF TEXAS AT AUSTIN

Mezes Hall 330 • Austin, Texas 78712 • (512) 471-1157

73

April 13, 1993

Ms. Carol Jones  
6516 Lowden Lane  
Las Vegas, NV 89107

Dear Ms. Jones,

I have received a number of requests for reprints of the AIDS papers which appeared in the Journal of Personality Assessment and in the Journal of Applied Social Psychology. Many people have asked for additional information. Because of this I have sent you the enclosed. If you get more than you wanted, accept my apologies. Please find:

- 1) A reprint of the AIDS and Homophobia scales paper;
- 2) A reprint of two papers which used those scales;
- 3) Form A of the 1989 questionnaire. The 1989 questionnaire differs from the 1988 questionnaire slightly: Items 36 and 37 are new (2 control items from the change scales on page 4 were discarded). In addition, a few items on the knowledge scale (pages 5, 6, and 7) have been updated to reflect current information.

It should be noted that Form B, which is not included, is simply Form A with items 1-35, 38-60, and 61-77 arranged in a different order.

Finally, you may use and/or reproduce any of this material if you will be using it for research purposes.

If you have any questions, please don't hesitate to ask.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert K. Young", followed by a small flourish.

Robert K. Young  
Professor

## DEPARTMENT OF NURSING

UNIVERSITY OF NEVADA, LAS VEGAS

4505 MARYLAND PARKWAY • LAS VEGAS, NEVADA 89154-3018 • (702) 739-3360

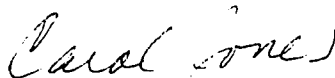
April 26, 1993

Ms. Elaine Zimblar, R.N., M.A.  
Senior Consultant for Test Services  
350 Hudson Street  
New York, New York 10014

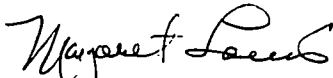
Dear Ms. Zimblar:

As a graduate student in nursing at the University of Nevada Las Vegas, I am planning a thesis surveying the compliance of nurses with universal precautions, and attempting to correlate these practices with their knowledge of HIV and fears about AIDS. I am writing to request a copy of the National League of Nursing's Caring for Persons with AIDS Test, which I would like to use to measure knowledge of AIDS and compliance with universal precautions. I also am requesting any information you can share with me concerning the validity and reliability of this tool. Thank you in advance for your attention to this; I appreciate your assistance.

Sincerely,



Carol Jones, R.N., B.S.N., M.A.  
6516 Lowden Lane  
Las Vegas, Nevada 89107



Margaret Louis, R.N., Ph.D.  
Faculty Advisor

May 4, 1993

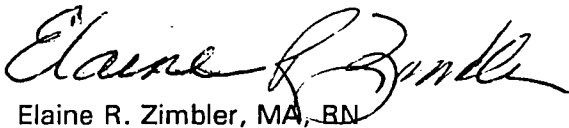
Ms. Carol Jones, RN, MA  
6516 Lowdon Lane  
Las Vegas, NV 89107

Dear Ms. Jones:

In response to your request regarding the use of NLN's Caring for Persons with AIDS test as part of a study to correlate nurse's compliance with universal precautions and their knowledge of HIV/AIDS, I am enclosing a copy of the test in addition to the administrators manual. The administrators manual includes information regarding the validity and reliability of the test. You will note that the test is for review purposes only and needs to be returned to me when you are finished reviewing it.

Should you be interested in administering the test, you will need to contact me and we can discuss the details of administration.

Sincerely yours,



Elaine R. Zimbler, MA, RN  
Acting Director, Test Service

ERZ/jcs



NLN CONVENTION  
JUNE 6-10, 1993  
BOSTON



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May 23, 1993

Elaine R. Zimbler, MA, RN  
Acting Director, Test Service  
National League for Nursing  
350 Hudson Street  
New York, New York 10014

Dear Ms. Zimbler:

Thank you very much for sending me the copy of the NLN's Caring for Persons with AIDS test. Having reviewed it and discussed it with my faculty advisor, I wish to use the test as part of my study to correlate nurses' compliance with universal precautions and their knowledge of HIV/AIDS. As you requested, I am returning the copy you sent. Please let me know what is required for me to administer the test.

Thank you very much for your assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Carol Jones".

Carol Jones, MA, RN  
Graduate Student, Department of Nursing  
6516 Lowden Lane  
Las Vegas, Nevada 89107

**National League for Nursing**

350 Hudson Street • New York, New York 10014 • 212-988-9393

Claire M. Fagin, PhD, RN, FAAN  
President

7/1 - 77

June 1, 1993

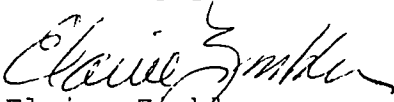
Carol Jones  
6516 Lowden Lane  
Las Vegas, NV 89107

Dear Ms. Jones:

I received your letter dated May 23 and I think it would be most appropriate for you to call me at 1-800-669-9656 ext. 204, so we can arrange for you to administer the NLN test, Caring for Persons with AIDS.

I shall be out of the office from June 6 - 14, however I will be calling in for messages.

Sincerely yours,



Elaine Zimble  
Acting Director, Test Services

EZ/jcs

h:\workdocs\zimble\letters\jones



NLN CONVENTION  
JUNE 6-10, 1993  
BOSTON



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January 24, 1994

To Whom It May Concern:

In order to complete the requirements for the Master of Science in Nursing at the University of Nevada Las Vegas, Carol Jones has permission to conduct a survey of a sample of nurses at University Medical Center. The tools will consist of a personal information questionnaire, the University of Texas Fear of AIDS Scale, and the National League for Nursing Caring for Persons with AIDS Test.

Participation in the survey will be completely voluntary, and confidentiality will be strictly observed. The results of the study will be shared with the Department of Nursing at University Medical Center, and with participants in the survey if they so desire.

Sincerely,

A handwritten signature in cursive script that reads "Elaine Young".

Elaine Young, R.N.  
Director of Staff Development

**UNIVERSITY MEDICAL CENTER**

1800 W. Charleston Blvd. • Las Vegas, Nevada 89102 • (702) 383-2000

An Equal Opportunity (including the handicapped) – Affirmative Action Employer



March 17, 1994

Ms. Carol Jones  
6516 Lowden Lane  
Las Vegas, Nevada 89107

Dear Carol,

The NLN Test seems most appropriate for hospital based nurses. By far the majority of questions (approximately 40) test knowledge and application related to the disease process, universal precautions and drug therapy. Only five or six questions directly test knowledge of transmission of HIV and prevention. No questions are related to pediatric HIV.

Per your abstract, you will be surveying hospital nurses. The tool will address knowledge about HIV and universal precautions. The instrument does not deal adequately with 1) psycho-social issues, 2) community services (one question only), 3) epidemiology (one question), or 4) issues of particular populations, i.e., drug users, pregnant women, or 5) home care.

I know of no better instruments to attempt to answer the questions of your study.

Good luck. I would be interested to read your thesis when you are finished.

*Vicky Carwein*  
Vicky Carwein, R.N., D.N.S.  
Dean, College of Health Sciences



## M E M O R A N D U M

TO: Carol Jones, R.N., B.S.N., M.A.  
FROM: Mary Koithan<sup>ML</sup>, R.N., PhD (Candidate)  
DATE: March 3, 1994  
RE: Instrument Evaluation

I would first like to comment about the timeliness and significance of your proposed study. I believe that with all of the local and national press lately indicating an increase in the fear about HIV/AIDS among the public and health care professionals in spite of extraordinary educational efforts this is a much needed investigation. I liked the tenor of the abstracted proposal and some of the theoretical links you made in our discussion on the phone.

Let me first comment about the tools and my general impressions. I believe that the tools adequately address the nature of the questions that were asked in the abstract. I might, however, add questions which target fear about "deviant behavior" in general as it is supposedly related to some people's fear about HIV/AIDS. The tool about fear targeted homophobia in particular, while recent articles have identified "abnormal, unacceptable" behaviors as a whole as the basis of fear, bias, and prejudice. Therefore, questions which include drug abuse, needle sharing programs, or homelessness might be indicated. Additionally, male/female disease and children's disease beliefs might also increase the validity about the nature/foundation of fear in HIV/AIDS. Including specific questions about daycare/foster care/adoption might be the most telling.

The NLN test is fine. I believe that Dr. Carwein will provide you with good expert comments. My only impression/question might be about the assumed level of knowledge of the staff nurse, HIV/AIDS infection, and pathophysiology.

Now, let me comment about the concept of care as it might relate to the study. I believe that nursing's social and moral commitment to care is founded deep within the historical and philosophical traditions of the profession. Any care undertaken with any person, regardless of disease process, should be approached through the ontological and moral caring attitude. This belief is best explained in the 1990-93 writings of Jean Watson, Ruth Neil, Peggy

Chinn, and Sally Gadow. Fear which has its basis in biases, prejudice, and ignorance is antithetical to this caring commitment. Caring, from this perspective, is grounded in honesty, trust, regard for the human being, and knowledge. Therefore, the moral commitment to care provides your study with its significance for the discipline and should provide you with a justification for the conduct of this research.

Beyond this implication, however, I truly believe the attempt to pull caring into the fabric of the research design, hypotheses, variables, and measurement instruments would be more destructive than constructive. The instruments that you have chosen fit well with your Health Belief Model; your assumptions about fear, knowledge, and actions; and the concepts that you have selected. They do not reflect the concept of caring from Watson's perspective which is philosophically inconsistent with the Health Belief Model. Therefore, I believe you could use caring within the significance in a limited fashion, but I would advise against trying to pull it into the very essence of your study.

If you want to try to link caring with the instruments selected the idea of knowledgeable caring and honesty with self and others are a way I could think about doing it. Mayeroff's (1971) On caring would help you see it very simplistically. If you decide to pursue this, I would like to discuss it further with you and give you further direction.

Carol, I wish you the best of luck. This is really going to be a great idea, and you should have fun. Let me know if I can be of any further assistance.



August 24, 1994

Carol Jones  
6516 Lowden Lane  
Las Vegas, NV

Report of review of tools for your HIV/AIDS study.

U. of Texas tool:

The items are clear. The options are clear and unique or independent. Five options are used for answers: Strongly agree, agree, undecided, Disagree and Strongly Disagree.

It is difficult to determine positive or negative aspect of answers for items 8, 10, 11, 13. This must be kept in mind when analyzing the data.

NLN tool:

The directions are clear and detailed. The main concern is currency of information and options. The tool is copyrighted in 1988 based on guidelines for 1987. Need a content expert to validate currency of stems and distractors as well as "correct" answer. Would suggest cross checking the content with more current "guidelines".

Item 5 seems to have more than one possible "correct" answer.

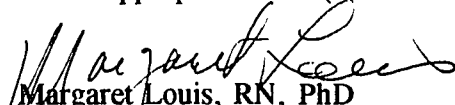
The items are appropriate in terms of no clues given via grammar, wording of items, placement of "correct" item, length of distractors etc.

Demographic data:

Options are clear.

Readability is appropriate to the population of interest.

Tools meet basic psychometric guidelines. Reliability should be validated for this sample and if it is of appropriate level (i.e. .8 or above) the tools have good support for validity and reliability.

  
Margaret Louis, RN, PhD  
Associate Professor  
Department of Nursing  
University of Nevada, Las Vegas

Department of Nursing  
University of Nevada Las Vegas

**To the Participant:**

I am a graduate student in nursing at UNLV. In my master's thesis I am exploring nurses' use of universal precautions, and their attitudes and opinions about these practices. You are being asked to participate in a survey about these topics. You have been selected as part of a random sample of nurses at UMC to receive this packet, which contains three brief questionnaires. It will take you about 30 minutes to complete.

By returning the completed questionnaires, you are consenting to participate in the study. You need to know that your participation is entirely voluntary; that you may choose to answer all or only part of the questions; and that your responses are entirely confidential.

Results of the study will be published; however, only grouped data will be reported. You are encouraged not to put your name on the packet.

There is no known risk to you for participating. Benefits of this study may include improved education and inservice programs for nurses regarding universal precautions.

Thank you very much for your assistance in this project. I truly appreciate your participation. Please complete the forms in the order in which they are presented, and return them, sealed in the envelope provided.

Sincerely,

Carol Jones, R.N., B.S.N., M.A.

## **APPENDIX III**

### **Human Subject Rights**



March 28, 1994

Carolyn Jones, RN, BSN  
6516 Lowden Lane  
Las Vegas NV

Dear Ms Jones:

The Department of Nursing Human Subjects Rights Committee met and approved your proposal "The relationship of nurses' knowledge of HIV, fear of AIDS, and compliance with universal precautions" with the following recommendations. The Committee requests you make the changes before submitting to the University Human Subjects Rights Committee.


-Modify the Demographic Portion of your tool to include ONLY those items that are directly related to your research questions.

You have a study that should result in useful information about nurses' behavior in relation to AIDS. The Committee wishes you well in completing it. If any of the above is not clear or you wish to discuss any of the points please do not hesitate to call myself or any of the other committee members.

We wish you well in completing your study and are looking forward to hearing about your findings.

If you make any major change in your project please notify the Committee.

Sincerely,

  
Margaret Louis, RN PhD  
Chairperson  
Human Subjects Rights Committee  
Department of Nursing, UNLV





**TO:** Carol Jones *William Schulze*  
**FROM:** Dr. William E. Schulze, Director, Research Administration  
**DATE:** 8 April 1994  
**RE:** Status of human subject protocol entitled:  
"The Relationship of Nurses Knowledge of HIV, Fear of  
AIDS and Compliance with Universal Precautions"

---

The protocol for the project referenced above has been reviewed by the Office of Research Administration, and it has been determined that it meets the criteria for exemption from full review by the UNLV human subjects committee. Except for any required conditions or modifications noted below, this protocol is approved for a period of one year from the date of this notification, and work on the project may proceed.

Should the use of human subjects described in this protocol continue beyond a year from the date of this notification, it will be necessary to request an extension.

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*Margaret Lewis*  
Committee Chairman's Signature

### Description of the Study

1. **Subjects.** All registered nurses at University Medical Center will constitute the sample population. This is not considered a vulnerable population for the purposes of this study. There will be no monetary compensation.

2. **Purpose, Methods, Procedures.** This study seeks to determine the relationship among knowledge of HIV, fear of AIDS, and compliance with universal precautions in a sample population of registered nurses. A descriptive survey tool will be developed, comprised of the National League for Nursing's Caring for Persons with AIDS Test, the University of Texas Fear of AIDS Scale, and a personal information questionnaire. The random sample will consist of approximately 150 nurses working in various departments of the county hospital in Las Vegas, Nevada. The survey will be distributed personally to each participant. Confidentiality will be preserved by utilizing a numbering system on the survey, and having the participants return questionnaires in an unmarked, sealed envelope.

3. **Risks.** No risk is anticipated to subjects. However, each participant will be assured in advance that if she or he perceives that a risk is involved, there is no obligation to participate, nor any penalty for nonparticipation.

4. **Benefits.** Benefits for the participants will parallel those for all health care workers; i.e., better understanding of their perceptions about AIDS and how those perceptions affect their behavior. It is hoped that from this will come improved educational offerings for nurses, which will take into consideration both cognitive and affective needs related to HIV; this will promote more consistent, effective infection control behaviors.

Benefits to society may be a contribution to greater cost effectiveness and a more intelligent approach to health care.

5. **Risk-Benefit Ratio.** No risk has been identified for participation in this study.

6. **Cost.** There will be no cost to the participants, other than approximately 30 minutes of their time to read the cover letter and complete the questionnaires.

7. **Informed Consent.** Informed consent will be obtained by attaching a cover letter to the questionnaires. This will assure the participants of confidentiality, and of their right to refuse to answer all or part of the survey. They will be assured of no penalty for refusing to participate. The letter will state that by completing and returning the forms they are consenting to participate in the study.

## **APPENDIX IV**

### **The Instruments**

The Caring for Persons with AIDS Test was used with the permission of the NLN Testing Service. The test is protected by copyright, so cannot be reproduced here. For further information contact:

Testing Service  
National League for Nursing  
350 Hudson Street  
New York, New York 10014

### The University of Texas Fear of AIDS Scale

Read each statement carefully. Indicate the degree to which you agree or disagree. Please note that these are strictly your opinions; there is no right or wrong answer.

SA -- Strongly Agree

A -- Agree

U -- Undecided

D -- Disagree

SD -- Strongly Disagree

1. The military should test its personnel for AIDS.  
1. SA 2. A 3. U 4. D 5. SD
2. A centralized file containing the names of all people known to have the AIDS virus should be created.  
1. SA 2. A 3. U 4. D 5. SD
3. Gay bars should be closed.  
1. SA 2. A 3. U 4. D 5. SD
4. If I found out a friend had AIDS, I would be afraid to hug him/her.  
1. SA 2. A 3. U 4. D 5. SD

5. AIDS is God's way of punishing homosexuals.
1. SA 2. A 3. U 4. D 5. SD
6. I would object to sending my non-infected child to a school which had a child who has AIDS.
1. SA 2. A 3. U 4. D 5. SD
7. The public should be informed as to who has AIDS, so that individuals can protect themselves.
1. SA 2. A 3. U 4. D 5. SD
8. I believe public officials when they say AIDS cannot be transmitted through casual contact.
1. SA 2. A 3. U 4. D 5. SD
9. Persons with the active AIDS infection should be isolated (quarantined) from those who do not have AIDS.
1. SA 2. A 3. U 4. D 5. SD
10. AIDS will become a severe and widespread epidemic.
1. SA 2. A 3. U 4. D 5. SD
11. The FDA should relax its usual restrictions on releasing new drugs for AIDS treatment.
1. SA 2. A 3. U 4. D 5. SD
12. I am worried about catching AIDS in a public restroom.
1. SA 2. A 3. U 4. D 5. SD



13. I feel there is now an AIDS cure that is not being released by health officials because of testing procedures designed to protect doctors and drug companies against lawsuits.

1. SA 2. A 3. U 4. D 5. SD

14. If I found out a friend or lover had AIDS I would be afraid to kiss him/her.

1. SA 2. A 3. U 4. D 5. SD

Items are used with permission of the University of Texas. Development of this scale is discussed in Bouton, R.A., Gallaher, P.E., Garlinghouse, P.A., Leal, T., Rosenstein, L.D., & Young, R.K. (1987). Scales for measuring fear of AIDS and homophobia. Journal of Personality Assessment, 51(4), 606-614.

### Personal Information Form

Some of the following items request quite specific information. They are included because the literature suggests that there is a relationship between these characteristics and nurses' opinions and behaviors. Please answer all of the questions. You are assured of complete confidentiality. Circle the appropriate response(s), or fill in the blank.

1. Age \_\_\_\_\_
2. Marital status
  - 1) never married    2) married    3) divorced
  - 4) widowed
3. What cultural group do you identify with besides American?
  - 1) Afro-American    2) Asian    3) Filipino
  - 4) German    5) Hispanic    6) Irish    7) Italian
  - 8) Jewish    9) West Indian    10) None    11) Other
4. Would you describe yourself as a religious person?
  - 1) Yes    2) No
5. Number of children living at home \_\_\_\_\_
6. How would you describe your overall health?
  - 1) Excellent    2) Good    3) Fair    4) Poor
7. How many cigarettes do you smoke daily?
  - 1) None    2) 1-9    3) 10-20    4) more than 20

8. If you don't smoke now, did you smoke in the past?  
1) Yes 2) No
9. Do you use a seatbelt in a motor vehicle?  
1) Always 2) Usually 3) Sometimes 4) Never
10. Have you received the Hepatitis B vaccine?  
1) Yes 2) Not yet 3) Do not plan to
11. Do you regularly practice behaviors to maintain or improve your own health (diet, exercise, stress reducing activities)?  
1) yes, regularly 2) yes, occasionally 3) No
12. Highest nursing education  
1) RN diploma 2) Associate degree 3) Baccalaureate  
4) Master's degree 5) Doctorate
13. Have you worked, or are you now working, with patients with AIDS?  
1) Yes 2) No
14. Amount of time you are employed in direct patient care  
1) Full time 2) Part time
15. Number of hours of inservice education or CE workshops you have had on HIV/AIDS  
1) 1-3 2) 4-6 3) 7-12 4) more than 12
16. Number of hours of inservice education or CE workshops you have had on universal precautions in the past two years  
1) 1-3 2) 4-6 3) 7-12 4) more than 12

17. Who has given you feedback on use of universal precautions?
- 1) coworkers 2) head nurse 3) patients
- 4) other 5) no one
18. Is there anyone that you work with that serves as a role model for use of universal precautions? If yes, who?
- 1) Yes 2) No Who? \_\_\_\_\_
19. Do you believe modes of transmission of HIV are well established?
- 1) Yes 2) No
20. Do you believe that you could contract HIV through your work?
- 1) Yes 2) No 3) Unsure
21. Do you believe that universal precautions will protect you from transmission of HIV?
- 1) Yes 2) No 3) Unsure
22. How many people do you know (not patients) who are HIV seropositive, or who have AIDS?
- \_\_\_\_\_
23. Do you have frequent contact with patients who are HIV seropositive?
- 1) Yes 2) No 3) Unsure
24. Please write any comments or opinions you wish to express about AIDS or universal precautions.