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Health Care Workers' Compliance with Glove Use and Variables that Influence Health Care Workers' Compliance with Glove Use

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HEALTH CARE WORKERS' COMPLIANCE WITH GLOVE USE AND VARIABLES THAT INFLUENCE HEALTH CARE WORKERS' COMPLIANCE WITH GLOVE USE

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ABSTRACT

HEALTH CARE WORKERS' COMPLIANCE WITH GLOVE USE AND VARIABLES THAT INFLUENCE HEALTH CARE WORKERS' COMPLIANCE WITH GLOVE USE

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This study examined health care workers' compliance with glove use and variables that influence health care workers' compliance with glove use. A descriptive correlational design using a questionnaire given to health care workers in a long term care facility was employed for this study. The sample consisted of 28 health care workers who worked at the long term care facility. A modified Survey of Health Care Workers Use of Gloves (Henry, Maki,& Campbell,1992) was used to collect the data.

Data analysis consisted of reporting means, standard deviations, and range of scores for glove use compliance and variables that influence glove use. T-tests were used to examine significant differences between the variables with glove use compliance. Pearson's correlations were used to examine relationships between the variables.

Significant findings of the research were: (1) The majority of health care workers use gloves more often if blood contact is suspected. (2) Health care workers in the long term facility felt that they didn't have contact with HIV or HBV patients. (3) Inservices are the most common cues to action in the long term care facility.

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CHAPTER ONE

INTRODUCTION

There is widespread recognition of the increased risk of transmission of bloodborne pathogens (Williams, Campbell, Henry, and Collier, 1994). Human Immunodeficiency Virus (HIV) and Hepatitis B Virus (HBV) are the two most deadly bloodborne pathogens. The use of universal precautions by health care workers can reduce the risk of transmission. Universal precautions are defined as the use of protective equipment such as gloves, masks, gowns, and goggles to reduce the risk of certain diseases. However, health care worker compliance with universal precautions is not 100% (Dajcsman, Dascal, Orenstein, and Frank, 1992). Therefore, health care workers are increasing their risk of transmitting a bloodborne pathogen when universal precautions are not used.

Historical Perspectives

Occupational Health and Safety Administration (OSHA) (1990) initiated the development of universal precautions. Steps were taken in response to reports of the first cases of occupational acquisition of HIV by health care workers in the mid 1980's. Labor groups representing health care workers requested the federal government to identify techniques designed to minimize the risk of possible transmission of bloodborne pathogens and to issue a mandate requiring health care agencies to provide protective devices and apparel for health care workers. The Center for Disease Control (CDC) (1991) published these recommendations. The practices and equipment

believed to reduce the risk of health care worker contact with bloodborne pathogens were labeled "universal precautions."

Health Care Workers' Risk of HIV and HBV Transmission

Health care workers' risk of HIV and HBV transmission has been documented in the literature. Lowenfels (1989) reported the following in regards to universal precautions: "This problem with noncompliance is significant, because more than 6 million health care workers are at risk in this country and there is a 0.3% risk of infection with a percutaneous exposure to HIV contaminated blood" (p. 1285). Williams, Campbell, Henry, and Collier (1994) reported that the CDC estimates that approximately 8700 health care workers are infected annually with HBV (acute or chronic infection) resulting in death for 200 health care workers every year. OSHA (1991) reports that the risk of becoming infected after a needlestick exposure to HBV can be as high as 3 in 10, whereas the risk of infection with HIV after a similar type injury is 1 in 250. The reported fatality rate is more than 80% for those infected with HIV and in the range of 1% - 2% after infection with HBV.

Statement of the Problem

Universal precautions have been created to decrease the transmission of HIV and HBV. CDC and OSHA have created recommendations to serve as guidelines in the clinical agencies. Compliance of the recommendations reduces the risk of bloodborne pathogens such as HIV and HBV. However, health care workers are not complying with the standards of universal precautions to the fullest extent as indicated by the numbers of health care workers who contract HIV and HBV every year.

There are many studies that report compliance of glove use by health care workers (Williams, Campbell, Henry, and Collier, 1994). However, few studies investigate the reasons for or against compliance (Williams, Campbell, Henry, and Collier, 1994). More studies are

needed that focus on the variables that influence compliance rates.

Statement of Purpose

The purpose of this study is to describe the variables which influence nurses' compliance with glove use. The findings from this study will contribute to the development of the research base on universal precautions. The results can be used by persons interested in developing interventions to increase nurses' compliance with glove use.

CHAPTER TWO

REVIEW OF LITERATURE AND THEORETICAL FRAMEWORK

Theoretical Framework

The theoretical framework used for this study is based on the work of Becker and Rosenstock (1974). The health belief model contends that persons will not perform preventative care or health screening unless they have minimum levels of relevant health motivation and knowledge, see themselves as vulnerable, see the condition as threatening, believe in the efficacy of intervention, and do not see too many difficulties in undertaking the recommended action. The health belief model includes the following variables: perceived susceptibility to a disease, perceived seriousness of the disease, and a personal evaluation of the barriers (obstacles) and benefits to the prevention of the disease. Health care workers' decisions to use universal precautions for reducing the exposure to bloodborne pathogens is similar to patient decisions in regards to health care practices.

Originally, the health belief model included four concepts: perceived susceptibility, perceived seriousness, perceived benefits, and perceived barriers. Fifth and sixth concepts, health motivation and cues to action, were added later. Health motivation is now considered central to the health belief model (Becker, Maiman, Kirscht, Haefner, & Drachman, 1977).

Theoretical Definitions

Perceived susceptibility is the belief or fear that one is individually vulnerable

to the disease. Hochbaum (1956) found that perceived susceptibility to tuberculosis consisted of two components: beliefs about whether tuberculosis was a possibility in the individual's case and the extent to which the individual accepted that he/she may have tuberculosis in the absence of symptoms. Perceived susceptibility has also been defined as the perceived subjective risks of contacting a specific condition within a specified time period (Champion, 1985). In this study, perceived susceptibility will be considered subjective.

Perceived seriousness may be determined by the emotional response to the disease. This would include the perceived effects on earning potential, social relations, and health. Champion (1985) contends that "perceived seriousness is the perceived degree of personal threat an individual relates to a specific condition"(p.29). Champion (1985) defines threat as "perceived harmful consequences of the condition in relation to altering the individual's physical health, role, social status, and ability to complete desired tasks"(p. 29).

Barriers to compliance are those factors that inhibit one from performing the action. Champion (1985) defines perceived barriers as "the negative component" of an anticipated behavior which would be undertaken for the purpose of preventing or detecting disease, maintaining health, and curing or lessening the undesirable consequences of a disease state. The negative aspects might involve problems such as monetary consequences, pain, changing habits, inconvenience, embarrassment, side effects, or need for new patterns of behavior" (p.30).

Benefits of compliance are those factors which encourage the individual to perform the action. Individuals weigh the barriers to compliance with the benefits of compliance to reach a decision whether or not to perform an action. Potential benefits reduce susceptibility or severity. Champion (1985) defines benefits as the "belief a person has regarding the effectiveness of a specific new behavior

or alternative behavior in preventing or detecting disease, maintaining health, and curing or lessening undesirable consequences of a disease state" (p.31).

Health motivation is an impulse or incentive to act in improving an individual's state of health (well being). Champion (1985) states that an impulse is internal and suggests a driving power. An incentive is external and implies an expected reward. Champion (1985) contends that health motivation is "a state of concern about general health matters which results in positive health activities and willingness to seek and comply with orders which are believed to decrease disease" (p.31).

A cue to action must occur before the behavior. A cue to action is the precursor (the impulse) to perform an action. The stimulus can either be internal or external. The action/compliance takes place after the stimulus and cue. The action/compliance can be negative or positive. The action/compliance is the process of doing and may not take all of the time (Champion, 1985).

Review of the Literature

The concepts searched in the literature were universal precautions and use of gloves. The literature reviewed will be compared using the following components: sample, design, variables, findings, statistics of the data, tool information, and limitations. (Table 1).

Kacsmarek, et al. (1991) used a correlational design to study a convenience sample of 405 health care workers of 22 hospitals and 4 ambulatory care centers in Iowa, Maryland, and Massachusetts. The tool consisted of observations of procedures that may involve contact with blood. The relationship between the perception of the risk for AIDS and glove use was studied. The study included glove use during phlebotomy, intravenous line maintenance, and initiation of intravenous lines. Glove use was significantly lower in states with average AIDS rates. Glove use was significantly higher in the states with a higher

AIDS prevalence. Some of the limitations of this study included the fact that some health care workers may have realized they were being observed, the study determined correlation only and not causation, and there was no mention of the health care workers' educational level.

Devries, Burnette, and Redmon (1991) found that increased glove wearing resulted from performance feedback. They used a pre-experimental one group post test design. Observations were done before, during the performance feedback, and after. Glove wearing among the 4 subjects increased from 22% to 49%. No other statistics were reported with this study. Some of the limitations included a small sample size, no use of a control group, and the inability to conclude that the outcome had any relation to the treatment.

Henry, Campbell, & Maki (1992) used a correlational design to compare observed and reported compliance of universal precautions at a Minnesota public teaching hospital. A convenience sample consisting of 88 emergency room employees was used. The following observations were made: 1) Gloves were the barrier most frequently worn (74%), 2) physicians were observed to use gloves more frequently than registered nurses, and 3) nurses were observed to recap more frequently than physicians ($t= 2.13$, $p<.05$). The survey revealed that the most common reasons for noncompliance involved time (71%), dexterity (61%), and patient appearance (50%). The study concluded that universal precautions were not consistently used by emergency room employees and that emergency room employees overestimate their compliance with universal precautions. The limitations of this study included a small sample size in one geographic location which limited generalizability, health care workers may have known they were being observed, and an in-service on universal precautions was offered to all employees which may have impacted the results.

Dajcman, et al. (1992) used a correlational design to examine recommended

Table 1 (A Comparison of Recent Literature Glove Use Compliance and Variables Which Impact Glove Use)

STUDY	SAMPLE	DESIGN	STATISTICS	TOOL	VARIABLES	FINDINGS	LIMITATIONS
Kacsmerick, Moore, McCrohan, Caquelin, Reynolds & Isreal (1991)	405 health care workers of 22 hospitals and 4 ambulatory care centers	Correlational	Fisher's Exact Test ($p<0.05$)	Observations Of Procedures	Risk of AIDS Glove Use	Glove use increases when working with AIDS clients	No mention of education May have known of observations
Henry, Campbell, & Maki (1992)	88 emergency room employees	Correlational	$t = 2.13$ p range < 0.5 - 1.0	Comparison of observations and survey	Observed glove use Reported glove use	Noncompliance because of time, dexterity, appearance	Inservice only one area May have been aware of observations
Devries, Burnette, & Redmon (1991)	4 registered nurses	Pre-experimental one group post test design	no statistics	Observations	glove use risk of AIDS	Performance feedback increases glove use	Small sample size No control group
Dajcman, Dascal, Orenstein, & Frank (1992)	806 health care workers	Correlational	no statistics	Observations	Universal precaution policies (Observed & Reported)	compliance with glove use	Study samples not similar No mention of educational levels
Gould (1994)	173 nurses in ICU and medical-surgical units of 2 hospitals	Correlational	mean=15.059, 1 d.f., $p < 0.001$	Observations	infection control criteria gove use	Gloves are the most worn barrier Gloves aren't worn as much as needed	Small sample size No control group
Gould & Ream (1994)	173 nurses	Correlational	mean = 12.464, 1 d.f., $p < 0.001$	Survey	views of infection control policies	Nurses' risks underperceived Nurses concerns infection control.	small sample size inability to determine degree of association between variables
Williams, Campbell, Henry & Collier (1994)	53 health care workers at a level 2 trauma center	Simple Descriptive Survey Design	$p < 0.005$	Survey	decisions glove use	HCWs more likely to wear gloves when blood contact anticipated.	
Lund, Hales, Dworkin, & Gilbert (1994)	477 health care workers on 19 care units in one hospital	Correlational	$p < 0.004$	Observations	glove use hand washing	No handwashing is common.	HCWs rarely wash hands after glove use

universal precautions guidelines and infection control precautions. There were 806 observations of 24 health care workers completed in the following manner: There were 344 observations of 7 health care workers in an emergency room, 293 observations of 12 health care workers in a dental clinic, and 169 observations of 5 health care workers in an outpatient plastic surgery unit. Observations were tracked using procedure monitoring sheets and administrative and engineering controls checklists. Of the 806 observations, 40.7% were totally compliant, 31.3% were partially compliant (able to abide by the guidelines some of the time), and 28% were not complaint with the guidelines and procedures. The limitations of this study included the following: behavior of one professional group did not correspond exactly to another group, study samples were not similar, and there was no mention of the health care worker's educational level.

Gould (1994) used a correlational design to study nurses' glove use in relation to infection control criteria. A convenience sample included 173 nurses in intensive care and medical-surgical units of 2 hospitals. The nurses were observed continuously for a period of two hours each. The findings revealed that gloves were needed more in the intensive care unit and that gloves are worn less often than necessary. Nurses in hospital A used nonsterile gloves on all occasions when gloves were used, and nurses in hospital B wore both sterile and nonsterile gloves appropriately ($x = 15.059$, 1 d.f., $p<0.001$). Limitations of this study included no control group for cross reference of the sample and the small sample size limited generalizability of the study.

Gould & Ream (1994) used a comparative descriptive survey design to study a convenience sample consisting of 173 nurses. The independent variable was the nurses' views of infection control (knowledge, opinions, and practice). The dependent variable consisted of one hospital with an infection control nurse

who utilized updated policies and another hospital which lacked an infection control nurse with very few updated policies. The findings demonstrated that nurses were interested in and concerned about infection control and that fears on behalf of patients were exaggerated. Moreover, risks to their own health were perceived less often than they occurred. Nurses frequently needed to update infection control information ($x = 12.464$, 1 d.f., $p < 0.001$). In other words, nurses' infection control data wasn't always current. The limitations of the study included: (1) a small sample size in one geographic location which limits generalizability

and (2) inability to determine degree of association between variables.

Williams, et al. (1994) used a simple descriptive survey design to survey a convenience sample of 53 health care workers at a level two trauma center. The relationship between the impact of a personal evaluation of benefits vis a vis obstacles and health care workers' glove use was studied. The findings included the following: Health care workers estimated they were more likely to perform handwashing and wear gloves if contact with blood was anticipated. The most common obstacles with universal precautions were lack of time, interference with technical skills, and perceiving patients to be at a lower risk for HIV or HBV. Health care workers with more than 3 perceived obstacles to universal precautions were less likely to use gloves if contact with blood was anticipated. Health care workers with a higher number of training experiences in universal precautions were more likely to use gloves if contact with blood was anticipated and they were less likely to recap needles ($p<0.05$ regarding all variables).

Lund, et al. (1994) used a correlational design to study health care workers' glove use and hand washing in relation to universal precautions and body substance isolation policies. The convenience sample consisted of 477 health care workers on 19 patient care units at one community teaching hospital during each of three

shifts. The findings indicated that no handwashing is common after contacts, incorrect handwashing occurred more often than correct handwashing, glove use was not as often as recommended, gloves were used more often than hands were washed, and health care workers rarely washed hands after glove use ($p<0.004$). Limitations of the study included the fact that no assumptions could be made regarding uniformity (even with the same institution), no data existed to determine which activity (glove use or handwashing) was more important in the prevention of infections, and the study concentrated on only one geographic area and limited generalizability.

Summary

Generally, the studies consisted of small sample sizes in one geographic area which limited generality. Also, they tended to use convenience samples, which were non-random. All of the studies needed replicating with different sample groups to compare the findings. The absence of data on the use of gloves and the variables which impact compliance, especialiy in reference to the long term care facility supported the need for this study. Therefore, this study will examine variables that influence health care workers' compliance with glove use.

Research Questions

The following specific questions were generated to examine the variables which impact nurses' compliance with glove use:

1. Does perceived susceptibility influence health care workers' use of gloves in the long term care facility?
2. Does perceived seriousness influence health care workers' use of gloves in the long term care facility?
3. What are the cues to action that influence health care workers' use of gloves in the long term care facility?
4. What are the benefits and obstacles that influence health care workers' use

of gloves in the long term care facility?

5. What are the health motivations that influence health care workers' use of gloves in the long term care facility?
7. What is the action/compliance of health care workers' use of gloves in the long term care facility?
8. Is there a significant relationship between perceived susceptibility, perceived seriousness, cues to action, evaluation of benefits and barriers, action/ compliance, and health motivation?

Definition of terms

Perceived susceptibility is the belief or fear that an individual is vulnerable. Perceived seriousness is the perceived effects of the emotional response to a disease. Cues to action are those prompts which assist us in performance. Benefits encourage one to perform an action.

Barriers are those factors which inhibit one from performing an action. Action/compliance is the performance. Long term care facility will be defined as a facility which services those clients with subacute and chronic conditions which do not require daily medical management.

CHAPTER THREE

METHODOLOGY

Research Design

A descriptive correlational design using a questionnaire completed by nurses and nurse assistants in a long term care facility was employed for this study. In this study, the use of gloves was the dependent variable. Perceived susceptibility, perceived seriousness, cues to action, obstacles, health motivations, and action/compliance were the independent variables.

Threats to external validity included the fact that some nurses may have reported ideal universal precautions rather than universal precuations they use on a daily basis. Some of the situations which may occur include: a long term care facility involved in the study may have provided an inservice to their staff shortly before the survey, and the nurses at one long term care facility might decide that they were going to organize a strong collective response.

Population and Sample

The population of interest was nurses and nurse assistants working in long term care facilities. Both registered nurses and licensed practical nurses were included in the study. The population consisted of 85 health care workers who met this criteria. Convenience methods were used to obtain the sample.

The sample consisted of 28 health care workers with years of experience in the health care field ranging from 1- 22 years (M = 6.5). Subjects had worked at the facility for 1 - 23 years (M = 12.33). There were 2 registered nurses, 4 licensed practical nurses, 21 nursing assistants, and 1 unknown. The registered nurses had the following degrees: Associate degree in nursing and bachelor degree in nursing.

Instrument

A modification of the survey used by Williams, Campbell, Henry, and Collier (1994) was used to collect the data (see appendix A). The survey was a self-report questionnaire to measure variables which influence universal precautions. It is based in part on Rosenstock's (1974) belief model and observations from clinical practice. The questionnaire took about 15 minutes to complete.

Subjects were asked to give the frequency of glove use. Perceived susceptibility, perceived seriousness, health motivation, barriers, and benefits were assessed by asking the subject to give the degree of agreement in response to statements. Subjects were to consider two bloodborne pathogens, HIV and HBV, when answering some of the questions. A sample list of barriers was provided and the subject marked the degree of frequency in which the barriers impact glove use. Knowledge of universal precautions was also assessed.

Modifications of the Questionnaire

The instrument was modified to reflect this study. Modifications included identification of participants and the location of the study. Furthermore, the questionnaire was modified to include only those questions which pertain to glove use, factors which impact glove use, and barriers to glove use. Questions pertaining to gowns, needle recapping, hand washing, masks, and goggles were deleted. Scales were added to assess degrees of agreement and frequency of the variables.

Scoring Guidelines. There were a variety of different methods used in the questionnaire. Some questions were scored by using self-reported frequency of the use of selected universal precautions. A 5 point scale was used to assess barriers. Frequency of occurence was assessed by using "always" to "never". A 5 point scale was used to assess level of agreement in response to variables which may impact glove use. This 5 point scale used strongly agree" to "strongly disagree".

The closed ended questions were coded accordingly: The answer yes received a point and the answer of no received no points. A 3 point scale from "never" to "always" was used to determine knowledge of universal precautions recommendations. Some knowledge questions were scored with one point if the participant gets the answer right and no points for all other answers.

Reliability and Validity. The tool has not been used widely. Two studies were found in which the tool was used in the literature review (Williams, Campbell, Henry, & Collier (1994) and Henry, Campbell, and Maki (1992)). Williams, Campbell, Henry, & Collier established face validity by means of a modified Delphi technique. No reliability has been established after several attempts to contact Dr. Henry by telephone calls, faxes, and letters.

Human Research Review Committee Approval

The study was submitted to Grand Valley State University's Human Research Review Committee. Approval was obtained from the agency before data was collected (Appendix A).

Confidentiality and Informed Consent

Confidentiality and informed consent were explained by a cover letter. The cover letter informed respondents that confidentiality was maintained (see appendix B). By returning the questionnaire, respondents were consenting to participate in the study.

Procedure

The investigator contacted the Director of Nurses at 7 long term care facilities by phone. One long term care facility agreed to participate. Some of the long term care facilities expressed disinterest due to state surveys, changing corporations, and one long term care facility stated the following: "Our policies don't include participation with research."

A consent form was sent to the agency and signed allowing the investigator to conduct the study (Appendix C). Once the form was signed, the research questionairres were delivered to the long term care facility.

The investigator delivered 85 questionnaires to the business office. Questionnaires were distributed with the pay checks. Participants had 10 business days to return the questionnaires to the business office. Subjects were asked to return the questionnaire whether or not complete. Subjects also signed a consent form (Appendix D).

All returned questionnaires whether or not completed were placed in a box by the business office staff prior to the return of the investigator. Participants may have been more willing to answer questions more honestly without face-to-face contact with the investigator when returning the questionnaire. There were 50 questionnaires returned. There were 28 completed questionnaires.

CHAPTER FOUR

DATA ANALYSIS

The analysis of the data was performed based on the total of 28 questionnaires. SPSS for MS WINDOWS was used. Frequencies were used to report glove use compliance and demographics. The means, standard deviations, and range of scores were used to report perceived susceptibility, perceived seriousness, cues to action, and health motivations. Pearson's correlation will be used to test the significance of relationships and t-test for independent samples will be used to test for differences between he variables.

The first two questions of the questionnaire were used to compare health belief scores (computed by range of scores with each variable) with those who were compliant with glove use and those who were not. Therefore, compliance means that glove use is estimated as 100% of the time. Noncompliance means that glove use is estimated to be less than 100% of the time. Table 2 shows compliance rates of the sample. There were three groups used: glove use with blood contact, glove use with body fluid contact, and glove use with any exposure. Table 2 shows the results.

Perceived Susceptibility

The first research question was the following: Does perceived susceptibility influence health care workers' compliance with glove use in the long term care facility? The scale used to measure perceived

Table 2

Glove Use Compliance Rates

Item	30%	50%	70%	80%	90%	100%	X(SD)
1. In situations where you believe your hands may come in contact with the blood of a a patient, how often would you estimate that you wear gloves?	1(3.6%)	0	1(3.6%)	2(7.1%)	6(21.4%)	18(64.3%)	92.9(14.6)
2. In situations where you believe your hands come in contact with the bodily fluids (besides blood) of a patient, how often would you estimate that you wear gloves?	1(3.6%)	1(3.6%)	3(10.7%)	4(14.3%)	7(25%)	12(42.9%)	87.1(17)

susceptibility was, 1 = always, 2 = frequently, 3 = sometimes, 4 = almost never, and 5 = never. The range of scores was 4 - 20. The higher the score, the less perceived susceptibility influenced the use of gloves. Table 3 highlights the results.

Difference Between Glove Use and Perceived Susceptibility. The range of scores were 14 -70 with those questions involving perceived susceptibility. The T-test for independent samples was used to test differences between perceived susceptibility and use of gloves. There was no statistical difference found with the use of gloves if contact with blood was suspected ($t = 1.59$, $df = 23$ $p = .13$). There was no statistical difference found with the use of gloves if contact with body fluids suspected ($t = .58$, $df = 23$, $p = .57$). Therefore, perceived susceptibility did not impact the use of gloves. Reliability coeffecients were computed with an alpha = .55.

Perceived Seriousness

The second research question was the following: Does perceived seriousness influence the use of gloves in the long term care facility? The range of scores was 5 - 25. The higher the score, the less perceived seriousness was viewed as an influence of glove use. Table 4 highlights this data.

Differences Between Glove Use and Perceived Seriousness. The t-test for independent samples was used to test differences. There was no statistical difference found if contact with blood was suspected ($t = 1.6$, $df = 23$, $p = .125$). There was no statistical difference found if contact with bodily fluid was suspected ($t = .58$, $df = 23$, $p = .57$). Reliability coeffeciants were calculated (alpha = .66)

Cues To Action

Research question 3 asked the following: What are the cues to action that influence health care workers' compliance with glove use in the long term care facility? Frequencies were used to calculate cues to action influencing glove use. Table 5 shows the results.

Table 3

Results Pertaining to Perceived Susceptibility

Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	X(SD)
16. Your chances of getting HBV or HIV are high.	2(7.1%)	15(53.6%)	6(21.4%)	3(10.7%)	2(7.1%)	2.6(1)
17. It is extremely likely that you will get HIV or HBV.	0	1(3.6%)	12(42.9%)	8(28.6%)	7(25%)	3.8(.89)
18. There is a good chance that you will get HIV or HBV.	0	3(10.7%)	12(42.9%)	9(32.1%)	4(14.3%)	2.9(1.2)
19. You are more likely than the average person to get HIV or HBV.	3(10.7%)	9(33.3%)	7(25.9%)	5(18.9%)	3(11.1%)	2.9(1.2)

Table 3(Continued)

Results Pertaining To Perceived Susceptibility

Items	Strongly Agree	Agree	Nuetral	Disagree	Strongly Disagree	X(SD)
42. I would wear gloves If I knew the patient had HIV.	18(64.3%)	6(21.4%)	2(7.1%)	2(7.1%)	0	1.6(.92)
43. I would wear gloves if I knew the patient had HBV.	18(64.3%)	7(25%)	1(3.6%)	2(7.1%)	0	1.5(.9)
44. I am the kind of person who gets sick often.	2(7.1%)	2(7.1%)	7(25%)	15(53.6%)	2(7.1%)	3.5(1)
45. I am not the kind of person who is likely to get HIV or HBV.	1(3.6%)	3(10.7%)	15(53.6%)	7(25%)	2(7.1%)	3.2(.88)

Table 4

Results Pertaining To Perceived Seriousness

Items	Strongly Agree	Agree	Nuetral	Disagree	Strongly Disagree	X(SD)
20. The thought of having HIV scares you.	15(53.6%)	9(32.1%)	4(14.3%)	0	0	1.7(.71)
21. The thought of having HBV scares you.	12(42.9%)	12(42.9%)	4(14.3%)	0	0	2.3(.98)
22. If you had HIV or HBV your life would be ruined.	5(17.9%)	13(46.4%)	7(25%)	2(7.1%)	1(3.6%)	2.3(.97)
23. Your feelings about yourself would change if you had HBV or HIV.	6(21.4%)	12(42.9%)	1(3.6%)	1(3.6%)	1(3.6%)	2.3(.9)
24. It would be costly if you had HIV or HBV.	15(53.6%)	11(39.3%)	2(7.1%)	0	0	1.5(.64)
25. It would be serious if you got HIV or HBV.	17(60.7%)	9(32.1%)	2(7.1%)	0	0	1.7(.8)

Table 4 (Continued)

Results Pertaining to Perceived Seriousness

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	X(SD)
34. I have contact with patients who have HBV.	1(3.7%)	6(22.2%)	11(40.7%)	8(29.6%)	1(3.7%)	3.1(.92)
35. I have contact with patients who have HIV.	1(3.7%)	6(22.2%)	11(40.7%)	8(29.6%)	1(3.7%)	3.1(.92)
36. I worry that my work activities put me at risk of contracting HIV or HBV.	3(10.7%)	14(50%)	7(25%)	2(7.1%)	2(7.1%)	2.5(1)
37. I would rather have any disease besides HIV.	5(17.9%)	10(35.7%)	10(35.7%)	2(7.1%)	1(3.6%)	2.4(1)
38. I would rather have any disease besides HBV.	0	6(21.4%)	17(60.7%)	4(14.3%)	1(3.6%)	3(.72)

Table 5

Results Pertaining to Cues to Action

Item	Frequency(%)
9. What type of instruction have you received on glove use?	
1. I've been to an inservice on the subject since I've been employed in the agency.	25(89.3%)
2. I've been to an inservice on the subject in the last 12 months.	19(67.9%)
3. I've read written agency policy/procedures on the subject.	22(78.6%)
4. I've read the recommendations on the subject in proffessional journals.	9(32.1%)
5. There are signs posted in my agency regarding glove use.	15(53.6%)
6. I've read and feel I understand the signs posted in the agency regarding glove use.	17(60.7%)
7. Other.	0

Differences between use of gloves and cues. The range of scores were 0 - 9. The higher the score, the more cues recognized. The lower the score, the less cues recognized. The t -test for independent samples was used to test differences between use of gloves and cues. There was no statistical differences found with use of gloves for suspected body fluid contact ($t = 1.8$, $df = 17.3$, $p = 1.0$). There was no statistical differences found with use of gloves for suspected blood exposure ($t = 1.0$, $df = 16.7$, $p = .67$). Reliability coefficients were calculated (KR-20 = 5.6). The most common cues to action were inservices and policies/procedures.

Barriers

Research question 4 asked the following: What are the benefits and barriers which influence health care workers' use of gloves in the long term care facility? The scale used to measure barriers was, 1 = always, 2 = frequently, 3 = sometimes, 4 = almost never, and 5 = never. The range of scores was 8 - 40. The lower the score, the more barriers reported. The higher the score, the less barriers reported. Benefits were included in the original question. However; upon data collection and analysis, it was determined that the questionnaire included questions which addressed only health motivations and not benefits. The table 6 highlights the results.

Differences Between Glove Use And Barriers

The t-test for independent samples was used to test the differences between glove use and barriers. There was no statistical difference found between the use of gloves and barriers if blood contact suspected ($t = 1.1$, $df = 23$, $p = .08$). There was no statistical difference found between the use of gloves and barriers if contact with bodily fluid was suspected ($t = 1.8$, $df = 23$, $p = .08$). Reliability coeffeciants were computed (alpha = .85).

Table 6

Results Pertaining to Barriers

Item	Always	Frequently	Sometimes	Almost Never	Never	X(SD)
15. From your own experience, what factors do you believe prevent you from completely following the Universal Precaution Policy of glove use?						
A. Often not enough time to use gloves.	1(3.6%)	3(10.7%)	15(53.6%)	4(14.3%)	15(53.6%)	3.3(1)
B. I often forget to use use gloves.	0	3(10.7%)	8(28.6%)	11(39.3%)	6(21.4%)	3.7(1)
C. Gloves are not immediately available.	3(10.7%)	0	5(17.9%)	12(42.9%)	8(28.6%)	3.8(1)
D. I don't always know when to wear gloves.	0	0	2(7.1%)	10(35.7%)	14(50%)	4.5(.7)
E. The gloves interfere interfere with my patient skills.	0	3(10.7%)	14(50%)	5(17.9%)	5(17.9%)	3.5(1)
F. I learned the skills without using gloves.	0	1(3.6%)	5(17.9%)	8(28.6%)	12(42.9%)	4.2(.9)
G. No support from peers to use gloves.	2(7.1%)	1(3.6%)	3(10.7%)	8(28.6%)	14(50%)	4(1.2)
H. I am allergic to latex and/or powder and other gloves aren't supplied.	0	0	6(21.4%)	7(25%)	15(53.6%)	4(.9)

Health Motivations

The fifth research question asked the following: What are the health motivations that influence health care workers' use of gloves in the long term care facility? Table 7 shows the results. The range of scores was 0 -20. The lower the score, the more health motivations influenced glove use.

Differences Between Glove Use and Health Motivations

There was no statistical difference found between glove use and health motivations ($t = 1.8$, $df = 23$, and $p = .08$). Reliability coeffecients were computed (alpha = .57).

Action/Compliance

The seventh research question asked the following: Does action/compliance influence glove use in the long term care facility? Table 8 describes the results. There was no statistical difference found between action/compliance and glove use ($t = 1.5$, $df = 10.3$, and $p = 1.8$). Reliability coeffecients were computed (alpha = .08).

Significant Relationship

Research question 7 involved asking if there was a significant relationship between perceived susceptibility, perceived seriousness, cues to action, barriers, action/compliance, and health motivations? There was a moderate relationship found between motivation and cues ($r = .39$; $p = .03$). Table 9 shows the results.

Table 7.

Results Pertaining to Health Motivations

Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	X(SD)
27. You have lots to gain from using gloves to prevent the transmission of HIV or HBV.	9(32.1%)	18(64.3%)	1(3.6%)	0	0	1.7(.54)
29. You feel good about yourself when you use gloves to prevent HIV or HBV.	9(32.1%)	16(57.1%)	3(10.7%)	0	0	1.8(.63)
30. You feel like you are not professional when you wear gloves regularly.	0	2(7.1%)	1(3.6%)	16(57.1%)	9(32.1%)	4.1(.8)
32. Wearing gloves regularly would mean starting a habit that is hard for you to do.	0	1(3.6%)	1(3.6%)	14(50%)	12(42.9%)	4.3(.72)

Table 8

Results Pertaining to Action/Compliance

Items	Always	Sometimes	Never	X(SD)
5. Gloves should be worn for IV starts.	27(96.4%)	1(3.6%)	0	1(.2)
6. Gloves should be worn for blood draws.	26(92.9%)	2(7.1%)	0	1.1(.26)
7. Gloves should be worn for the administration of intramuscular injections.	22(78.6%)	5(17.9%)	1(3.6%)	1.3(.52)
8. Gloves should be worn for the administration of subcutaneous injections.	23(82.1%)	4(14.8%)	0	1.1(.36)

Table 9

Correlation Coefficients

	Action	Cues	Serious	Suscept.	Barriers	Motivation
Action	1.0000	.1101	-.2085	-.0151	-.1527	.1476
	(27)	(27)	(25)	(26)	(25)	(27)
	p=.	p=.585	p=.317	p=.942	p=.466	p=.463
Cues	.1101	1.0000	-.2440	.0341	.1966	.3874
	(27)	(28)	(25)	(27)	(25)	(28)
	p=.585	p=.	p=.240	p=.866	p=.346	p=.042
Serious	-.2085	-.2440	1.0000	.1819	.0434	-.0134
	(25)	(25)	(25)	(24)	(23)	(25)
	p=.317	p=.240	p=.	p=.395	p=.844	p=.949
Suscept.	-.0151	.0341	.1819	1.0000	.0318	.4293
	(26)	(27)	(24)	(27)	(24)	(27)
	p=.942	p=.866	p=.395	p=.	p=.883	p=.025
Barriers	.1527	.1966	.0434	.0318	1.0000	.1931
	(25)	(25)	(23)	(24)	(25)	(25)
	p=.466	p=.346	p=.844	p=.883	p=.	p=.355
Motivate	.1476	.3874	.0134	.4293	.1931	1.0000
	(27)	(28)	(25)	(27)	(28)	(28)
	p=.463	p=.042	p=.949	p=.025	p=.355	p=.

CHAPTER FIVE

DISCUSSION AND IMPLICATIONS

The use of gloves was less than 100% of the time with those tasks which require use of gloves 100% of the time. Evidence to support this claim can be found in numerous studies (Kacsmarek,et al; Devries, et al; & Henry, et al). There was research found studying the use of gloves in the emergency room or intensive care units (Henry, et al; Dajcman, et al; & Williams, et al). However, many health care workers are working in areas other than the hospital. Therefore, there needs to be research that focuses on these other areas. Specifically, areas such as long term care need to be a focus. This lack of research has contributed to the difficulty of understanding the unique variables which may influence the use of gloves and may have hindered the development of scientific interventions to increase the use of gloves in these areas. The purpose of this study was to identify those variables which influenced glove use in the long term care facility.

Perceived Susceptibility. Champion (1985) contends that "perceived susceptibility" is the perceived subjective risk of contacting a specific condition within a specified time period. The findings from this study showed that 82.1% of the subjects reported that they would be more careful with use of gloves if the patient had HBV or HIV. This may indicate that even though glove use is considered a "universal" precaution, health care workers are more likely to use gloves knowing the patient is infected with HIV or HBV.

Perceived Seriousness. Champion (1985) stated that perceived seriousness is perceived degree of personal threat an individual relates to a specific condition. This study revealed that the subjects felt that perceived seriousness was important. Subjects agreed that work activities put them at risk of contracting HIV or HBV. Subjects also agreed that they would rather have any disease besides HIV.

Cues to Action. Champion (1985) reported that a cue to action was the precursor (impulse or stimulus) to perform an action. Subjects of the current study had answered differently when asked about seeing signs posted and being able to read and understand signs posted. Therefore, it is possible that the subjects may have not understood the question or relationship between seeing the signs posted and understanding those same signs. The most effective cue to action was inservice education. This was expected because an inservice regarding universal precautions (including the use of gloves) is required to be given to all staff in a long term care facility annually. The other cues to action are not a required part of the nursing assistants' jobs, althouth they are a required part of the job for the nurses.

Barriers. Champion (1985) contends that barriers are those factors which inhibit one from performing the action. The action in this study is the use of gloves. Some of the sample wrote in the other column that they believed that gloves were not durable enough. This researcher believed that the sample would report environmental problems more often such as not enough gloves or availability of gloves. However, the sample tended to report barriers which were subjective in nature (no support and interfering with patient skills). Gloves do interfere with some patient skills. The surprising barrier was support from peers.

Health Motivations. Champion (1985) stated that a health motivation is an impulse or incentive to act in improving an individual's state of health. An impulse is internal and an incentive is external. This study found that health motivations was one of the stronger variables which had an impact on glove use. This is

contrary to the current belief that perceived susceptibility and perceived seriousness are the stronger variables having an impact on glove use (Kacsmerick, et al; Devries, et al; & Williams, et al).

Action/compliance. Champion (1985) believes that action/compliance is the process of doing. This study found that action/compliance rates were higher if blood contact were suspected. Blood contact is considered the most dangerous in the modern health care environment and most of the health care workers who have become infected with HIV or HBV can link their disease to a blood exposure.

Comparisons with Other Studies

The relationship between variables that impact the use of gloves in the studies reviewed in the literature review was equivocal. Direct comparison of scores was difficult because the majority of studies used observations and different instruments to measure variables which influence the use of gloves. One study was comparable. Table 8 compares the scores in the present study and the Henry, Campbell, and Maki (1992) study. Differences among the two samples with regards to the use of gloves might relate to differences in the sample characteristics. The Henry, Campbell, and Maki (1992) sample consisted of 88 emergency room employees. The sample included nurses, physicians, paramedics, medical students, and ancillary personnel. The study reported both observed and self reported compliance with universal precautions. The observation phase took place first over 2 months. A self-report survey was given to all emergency department employees after the observation phase.

In contrast, the current study, consisted of 21 nursing assistants, 4 LPNs, 2 RNs, and 1 unknown. The study took place in a long term

care facility. Only the use of gloves was included in the questionnaire.

Table 10

Comparison of Use of Gloves Scores in Present Study (N = 28) and Henry, Campbell, and Maki (1992) Study

	Present Study (N = 28)	Henry, Campbell, & Maki (N = 88)
	Percentage	Percentage
Gloves (Blood)	64.3%	87.2%
Gloves (Body Fluid)	42.9%	72.9%
Barrier 1 (No time)	53.6%	71%
Barrier 2 (Dexterity)	50%	61%
Barrier 3 (Not immediately available)		25.2%
Barrier 4 (Forgot)		13.2%
Barrier 5 (Didn't know)		4.5%
Increased Glove Use With HIV/HBV pts.	82.1%	50%

The subjects in the Henry, Campbell, & Maki (1992) study reported that gloves were most likely to be used when appropriate than any other type of universal precaution barrier. Observed rates of glove use where almost identical to self-reported glove use rates. Subjects reported more barriers than the present study subjects. The researchers in this study stated that they were concerned that especially in areas of low HIV seroprevalence, voluntary compliance with the use of gloves remains low.

Implications For Nursing

In an ideal situation, health care workers would wear gloves all of the time when involved with tasks that may require blood or body fluid contact in patient care routines. Unfortunately, this is not the case and efforts to increase the use of gloves have been unsuccessful as evidenced by results of recent studies. This has put health care workers at risk for contracting certain diseases such as HBV and HIV.

Implications For Practice

Facilities truly committed to increasing the use of gloves must be willing to critically review current and past practices within their policies, procedures, inservice programs, and daily routines. If the health care environment is to maintain safety of its' workers, use of gloves must be considered vital. While the intent of established practices may have been to encompass the vitality of the use of gloves; the outcome has consistently been less than the ideal. Therefore, practice should be reexamined and in some instances changed.

Noticeable change within the health care environment on a large scale will not occur until beliefs about use of gloves within the institution change. Rather than focusing on exposures and injury, the focus should be on prevention. The outcome should be no injuries or exposures with 100% use of gloves.

Implications For Education

While changes on a larger scale are more challenging, there are several things individual facilities can do to provide support to their staff for more use of gloves. For example, increased support can be provided by developing mentoring relationships with those staff whose use of gloves is less than the ideal. Quality assurance programs have been established in long term care facilities. The quality assurance program should assess the use of gloves in the individual facilities and survey staff regarding what should be done to increase glove

use. Rather than providing inservice programs which just focus on why gloves should be worn and percentages, sensitization training should be included. One example is a film which shows a health care worker infected with the HBV during an emergency (a resident in a long term care facility falls in the hallway and sustains a laceration) in which she comes in contact with a patient's blood and the influence this situation has on her personal life.

Including staff in change is a motivator. Therefore, staff should be included. One way to include staff is to have a group of staff members concerned with the use of gloves who meet with administrators to change current barriers which may have a negative influence on the use of gloves. Another idea to link staff with change is to survey them regarding inservice needs in the area of glove use. An implication for practice is to allow the staff to verbalize ideas, problems, and issues which influence daily patient care. Once the verbalization takes place, encourage the staff to have a plan to implement change.

Limitations of the study

There were several limitations of the study which made it difficult to generalize the findings to other groups. The lack of random selection was a limitation. The sample was not representative of all health care workers in a long term care facility.

The instrument had not been used widely and there were no reliability statistics found. The sample consisted of mostly nursing assistants and there is no established educational level found for this group. The questionnaire was geared for a professional nursing sample. Some of the action/compliance questions involve tasks which nursing assistants do not perform. Therefore, some of these questions may not have been answered correctly. There was a typographical error on question 15. Never did not appear as corresponding with the number 5. Some of the subjects wrote the word never above the number 5. If further research was done in the long term care facility by this researcher, there would be careful selection of the instrument

so the instrument would be geared for nursing assistants rather than professional nurses.

Recommendations for Future Research

Additional research is needed to explore the relationship between variables which impact the use of gloves and the use of gloves. Many questions arise from the findings in this study that could be examined in future studies:

1. What are the observed percentages of use of gloves in the long term care facility?
2. How does the observed use of gloves relate to the reported use of gloves in the long term care facility?
3. What are the perceptions of the durability of gloves and how does durability influence the use of gloves in the long term facility?
4. Does educational level of a health care worker influence the use of gloves in a long term facility?
5. Do reported variables which influence glove use differ between administrative and direct patient care personnel?
6. Do allergies to latex or powder influence the use of gloves in a long term care facility?
7. Do staff in a long term care facility feel that the inservice program addresses variables which influence glove use in a long term care facility?

These and other studies would contribute to building a research base on variables which impact the use of gloves in a long term care facility. The findings from the studies would serve to increase understanding of this phenomenon. Those persons interested in variables which impact the use of gloves may find the information valuable in designing interventions which increase the use of gloves among health care workers.

APPENDIX A

Approval Letter from Human Research Review Committee at Grand Valley State University

GRAND VALLEY STATE UNIVERSITY

1 CAMPUS DRIVE • ALLENDALE MICHIGAN 49401-9403 • 616/895-6611

September 4, 1997

Angela Wallen-Counterman
1266 Union City Road
Union City, MI 49094

Dear Angela:

Your proposed project entitled "***Variables that Influence Health Care Workers' Compliance with Glove Use***" has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

Please forward copies of the permission letters from the health care facilities you will be working with.

Sincerely,

[redacted]

Paul Huizenga, Chair
Human Research Review Committee

APPENDIX B

Cover Letter

APPENDIX B

I am a nurse who is a graduate student at Grand Valley State University in Allendale, Michigan. I am currently completing a thesis is partial fulfillment of the requirements for a master of science degree in nursing. The purpose of this study is to identify nurses' variables which impact nurses' use of gloves. Most of the research regarding universal precautions has taken place in the hospital. Therefore, this questionnaire is being distributed among many nursing staff from nursing home to provide research of this topic within the long term care specialty.

You will receive a copy of a questionnaire used in several different studies regarding universal precautions. Please assist me in completing the study by answering all questions and returning the questionnaire in the envelope. Even if you do not complete the questionnaire, please return it in the envelope.

Provisions have been made to protect confidentiality. Names will not be a part of data analysis or published in the research findings. The questionnaire is not coded in any way to identify you. Please do not include your name on the questionnaire. The director of nursing and myself will leave the room while you complete the questionnaire. Your decision to complete the questionnaire will be considered informed consent to participate in the study. Findings will be reported as a total group. No individual will be identified.

If you have any questions and would like to contact me by phone, I can be reached at the following phone number: (517)-741-7722. You may also reach Paul Huizenga, chair of human research and review committee, at Grand Valley State University, at 616-895-2470. The phone numbers have been printed at the bottom of your questionnaire. Thank you for taking the time to support this research.

APPENDIX C

Consent Form

APPENDIX C
Consent Form

I understand that this is a study of the variables which influence health care workers' use of gloves. The knowledge gained is expected to assist the profession of nursing in looking at ways to improve glove use.

I also understand that:

1. participation in this study will require the investigator to be present at one meeting involving licensed practical nurses, registered nurses, and nurse aides to distribute the questionairre. The questionairre should take no longer than 20 minutes to complete.
2. this facility has been chosen because it is a long term care facility which employs health care workers who use gloves as part of a daily routine.
3. it is not anticipated that this study will lead to physical or emotional risk to any paticipants in the study and it may be helpful to the facility to have access to the results of the study to assist with quality improvement programs.
4. the information provided will be kept strictly confidential and the data will be collected in a manner that individual identification of individual participants will not be possible. Also, individual identification of the facility will not be possible by reading the thesis.
5. a summary of the results will be made available to each facility upon request.

I acknowledge that:

"An opportunity to ask questions regarding this research study has been provided and that these questions have been answered to my satisfaction."

"In giving consent, I understand that participation in this study is voluntary."

"I hereby authorize the investigator to release the information obtained in this study to scientific literature. I understand that the facility and individuals will not be identified by name."

"I have been given Angela Wallen-Counterman's phone number and the phone number to reach Paul Huizenga, chair of human research and review committee at Grand Valley State University, so that I may contact either if I have any questions."

"I acknowledge that I have read and understand the above information, and that I agree on behalf of the facility to participate in this study."

_____	_____
Witness	Participant signature
_____	_____
Date	Date

____ I am interested in receiving a summary of the study results.

APPENDIX D

Permission letter to use the Survey of Health Care Workers' Use of Gloves

APPENDIX D

1/26/96

I hereby grant permission to Angela C. Wallen-Counterman to use and modify the universal precautions questionnaire in her study of variables influencing nurses' glove use. I am also granting permission for a copy of the questionairre to be included in the thesis appendix.

Signature

2/16/96

Date

APPENDIX E

Permission to Conduct the Study at the Facility

APPENDIX E

I agree to let Angela Wallen-Counterman conduct her study involving variables which impact glove use at this facility.

[redacted]

Signature

12/12/97

Date

APPENDIX F

Survey of Health Care Workers' Use of Gloves
Adapted for this Study and Demographic Sheet

SURVEY OF HEALTH CARE WORKERS' USE OF GLOVES

Please read each question completely and carefully. The survey will take about 10 minutes to complete. When you are finished, please place the survey where directed. Code numbers have been used so no names can be directly connected with the results. All study results are confidential.

1. In situations where you believe your hands MAY come in contact with the blood of a patient, how often would you estimate that you wear gloves?

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
0	0	0	1(3.7%)	0	0	0	1(3.6%)	2(7.1%)	6(21.4%)	18(64.3%)

2. In situations where you believe your hands MAY come in contact with the bodily fluids (besides blood), how often would you estimate that you wear gloves?

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
0	0	0	1(3.6%)	0	1(3.6%)	0	3(10.7%)	4(14.3%)	7(25%)	12(42.9%)

3. Keeping in mind that gloves are not intended to prevent puncture injuries, do you believe that the GLOVES you are supplied with provide adequate barrier protection?

1. 24(85.7%)YES 2. 4(14.3%)NO 3.If "NO", what should be improved?_____

4. Gloves should be worn for touching blood and body fluids, mucous membranes, and non-intact skin of _____.
   1. 28(100%) All Patients.
   2._____ Only certain patients in high risk groups.
   3._____ Only patients known to carry infectious agents.
5. Gloves should _____ be worn for IV starts.

   1. 27(96.4%)Always 2. 1(3.6%)Sometimes 3. 0 Never
6. Gloves should_____ be worn for blood draws.

   1. 26(92.9%) Always 2. 2(7.1%) Sometimes 3. 0 Never

7. Gloves should_____ be worn for the administration of intramuscular injections.

   1. 22(78.6%) Always 2. 5(17.9%) Sometimes 3. 1(3.6%)Never
8. Gloves should_____ be worn for the administration of subcutaneous injections.

   1. 23(82.1%) Always 2. 4(14.8%) Sometimes 3. 0 Never

9. What type of instruction have you received on glove use? (check all that apply): 25(89.3%)

1. 25(89.3%) I've been to an inservice on the subject since I've been employed in the agency.

2. 19(67.9%) I've been to an inservice on the subject in the last 12 months.

3. 22(78.6%) I've read written agency policy/procedures on the subject.

4. 9(32.1%) I've read the recommendations on the subject in professional journals.

5. 15(53.6%) There are signs posted in my agency regarding glove use.

6. 17(60.7%) I've read and feel I understand the signs posted in the agency regarding glove use.

7. 0_____ Other:_____

10. Have you received the Hepatitis B vaccine? This consists of the completion of a series of three injections given over a 6 month period. (Choose ONE):

1.22(78.6%) Yes 2. 6(21.4%) No 3._____ Don't Know

11. If you know or believe that a patient is a Hepatitis B carrier, are you likely to be more careful in using gloves with this patient than you are other patients? (Choose ONE):

1. 23(82.1%) Yes 2. 5(17.9%) No

12. If you know or believe that a patient is actively infected with HIV (the AIDS virus) are you likely to be more careful in using gloves with this patient than you are with other patients? (Choose ONE):

1. 23(82.1%) Yes 2. 5(17.9%) No

Refer to the following definition to answer questions 13 - 14. " A significant blood or body fluid exposure is open skin contaminated with blood or body fluids or mucous membrane contaminated with blood or body fluids".

13. In all of your time as a nurse, how many times can you recall having experienced significant exposure as defined above? (Choose only one).

1. 6(23.1%) None 2. 2(7.1%) Once 3. 10(38.5%)Twice 4. 8(30.8%)Three times

14. Do you know the procedure to follow if a significant blood or body fluid exposure occurs?

1. 28(100%) Yes 2. 0____ No

15. From your own experience, what factors do you believe prevent you from comepletely following the Universal Precaution Policy of glove use? (Circle the degree of frequency for each of the factors).

		Always	Frequently	Sometimes	Almost Never	Never
A.	Often not enough time to use gloves.	1(3.6%)	3(10.7%)	15(53.6%)	4(14.3%)	5(17.9%)
B.	I often forget to use gloves.	0	3(10.7%)	8(28.6%)	11(39.3%)	6(21.4%)
C.	Gloves are not immediately available.	3(10.7%)	0	5(17.9%)	12(42.9%)	8(28.6%)
D.	I don't always know when to wear gloves.	0	0	2(7.1%)	10(35.7%)	14(50%)
E.	The gloves interfere with my patient skills (i.e. gloves decrease dexterity).	0	3(10.7%)	14(50%)	5(17.9%)	6(21.4%)
F.	I learned the skills without using gloves.	0	1(3.6%)	3(10.7%)	8(28.6%)	12(43%)
G.	No supporte from peers to use gloves.	0	1(3.6%)	3(10.7%)	8(28.6%)	14(50%)
H.	I am allergic to latex and/or powder and other gloves are not supplied.	0	0	6(21.4%)	7(25%)	15(54%)
I.	Other_____					

Please answer each of the following questions by circling the answer you agree with. HIV is used to abbreviate human immunodificiency virus. HBV is used to abbreviate hepatitis B virus.

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
16.	Your chances of getting HBV or HIV are high.	2(7.1%)	15(53.6%)	6(21.4%)	3(10.7%)	2(7.1%)
17.	It is extremely likely that you will get HIV or HBV.	0	1(3.6%)	12(42.9%)	9(32.1%)	4(14.3%)
18.	There is a good chance that you will get HIV or HBV.	0	3(10.7%)	12(42.9%)	9(32.1%)	4(14.3%)
19.	You are more likely than the average person to get HIV or HBV.	3(10.7%)	9(33.3%)	7(25.9%)	5(18.9%)	3(11.1%)
20.	The thought of having HIV scares you.	15(53.6%)	9(32.1%)	4(14.3%)	0	0
21.	The thought of having HBV scares you.	12(42.9%)	12(42.9%)	4(14.3%)	0	0
22.	If you had HIV or HBV your life would be ruined.	5(17.9%)	13(46.4%)	7(25%)	2(7.1%)	1(3.6%)

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
23.	Your feelings about yourself would change if you hac HIV or HBV.	6(21.4%)	12(42.9%)	8(28.6%)	1(3.6%)	1(3.6%)
24.	It would be costly if you had HIV or HBV.	15(53.6%)	11(39.3%)	2(7.1%)	0	0
25.	It would be very serious if you got HIV or HBV.	17(60.7%)	9(32.1%)	2(7.1%)	0	0
26.	Using gloves prevents transmission of HIV or HBV.	9(32.1%)	18(64.3%)	1(3.6%)	0	0
27.	You have lots to gain from using gloves to prevent the transmission of HIV or HBV.	9(32.1%)	16(57.1%)	3(10.7%)	0	0
28.	You would not worry as much about HIV or HBV if you wore gloves.	7(25%)	13(46.4%)	3(10.7%)	0	0
29.	You feel good when you use gloves to prevent HIV or HBV.	9(32.1%)	16(57.1%)	3(10.7%)	0	0

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
30.	You feel like you are not professional when you wear gloves regularly.	0	2(7.1%)	1(3.6%)	16(57.1%)	9(32.1%)
31.	Your spouse, family, friends, or coworkers discourage you from wearing gloves.	0	0	1(3.6%)	11(39.3%)	16(57%)
32.	Wearing gloves regularly would mean starting a habit which is hard for you to do.	0	1(3.6%)	1(3.6%)	14(50%)	12(43%)
33.	Wearing gloves makes you uncomfortable.	0	4(14.3%)	5(17.9%)	9(32.1%)	10(36%)
34.	I have contact with patients who have HBV.	1(3.7%)	6(22.2%)	11(40.7%)	8(29.6%)	1(4%)
35.	I have contact with patients who have HIV.	1(3.7%)	6(22.2%)	11(40.7%)	8(29.6%)	1(4%)
36.	I worry that my work activities put me at risk.	3(10.7%)	14(50%)	7(25%)	2(7.1%)	2(7.1%)

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
37.	I would rather have any disease besides HIV.	5(17.9%)	10(35.7%)	10(35.7%)	2(7.1%)	1(3.6%)
38.	I would rather have any disease besides HBV.	0	6(21.4%)	17(60.7%)	4(14.3%)	1(3.6%)
39.	If I got HIV today, I would live long enough for a cure.	0	0	12(42.9%)	9(32.1%)	2(7.1%)
40.	If I got HIV, I I could still live a normal life with proper treatment.	0	11(39.3%)	6(21.4%)	9(32.!%)	2(7.1%)
41.	Most of my colleagues don't wear gloves like they are supposed to.	2(7.1%)	6(21.4%)	7(25%)	12(42.9%)	1(3.6%)
42.	I would wear gloves if I knew the patient had HIV.	18(64.3%)	6(21.4%)	2(7.1%)	2(7.1%)	0
43.	I would wear gloves if I knew the patient had HBV.	18(64.3%)	7(25%)	1(3.6%)	2(7.1%)	0

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
44.	I am the kind of person who gets sick often.	2(7.1%)	2(7.1%)	7(25%)	15(53.6%)	2(7%)
45.	I am not the kind of person who is likely to get HIV or HBV.	1(3.6%)	3(10.7%)	15(53.6%)	7(25%)	2(7.1%)
46.	If I got HIV or HBV, my future and present sexual relations would be destroyed.	8(28.6%)	10(35.7%)	7(25%)	2(7.1%)	1(4%)
47.	If I had HIV, I I would probably die soon.	1(3.6%)	7(25%)	17(60.7%)	2(7.1%)	1(4%)
48.	If I had HIV, I would probably die soon	0	4(14.3%)	16(57.1%)	5(17.9%)	

49. Are you aware of the facility policy regarding glove use?

YES 28(100%) NO_____

		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
50.	Following the facility policy regarding glove use significantly decreases the chances of my contracting HIV or HBV.	11(39.3%)	14(50%)	3(10.7%)	3(10.7%)	0
51.	In general, I am not as likely to get sick as most of my coworkers or friends.	1(3.6%)	10(35.7%)	14(50%)	3(10.7%)	0

52. What does or would motivate you to use gloves on a more consistent basis?

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LIST OF REFERENCES

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