

**JIMMA UNIVERSITY COLLEGE OF PUBLIC  
HEALTH AND MEDICAL SCIENCE  
DEPARTMENT OF NURSING**

**ASSESSMENT ON KNOWLEDGE, ATTITUDE AND  
PRACTICE OF INFECTION PREVENTION AMONG 2<sup>nd</sup>  
AND 3<sup>rd</sup> YEAR REGULAR NURSE STUDENT IN  
SHASHEMENE HEALTH SCIENCE COLLEGE  
SHASHEMENE, ETHIOPIA**

**BY GIRMA NIGUSSIE**

**ADVISOR:-**

**MR.MILLION ABERA**

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## **ABSTRACT/SUMMARY**

**BACKGROUND:-** HIV/AIDS and Hepatitis infection has become the major challenge for service provider across the world. WHO estimates that about 2.5% of HIV cases and 40% of hepatitis B and C cases among health care provider worldwide are the result of working with related exposure (WHO, 2002). Compliance with universal precautions has been shown to reduce the risk of exposure to blood and bodily fluid (Sridhar, Boopath, Lodha and Kabra, 2004).

**Objective:** The objective of this study is to assess the level of knowledge attitude and practice of the infection prevention among regular nurse student in Shashemene Health Science College.

**Method and Materials:-** a cross-sectional descriptive study proposed to conduct in Shashemene health science, Regular Nurse student of 2<sup>nd</sup> and 3<sup>rd</sup> years in 2003 E.C from September 18<sup>th</sup> to October 1, 2003 with non-convenient sampling, in West Arsi zone of Oromia region, Ethiopia. Data will be proposed to collect by structured, open and closed ended questioner. A total of all 245 Nurse Students of (Mid wife, Clinical Nurse and Public Nurse) are expected to be involved as respondent.

**Result:-** The result will be presented with tabular and frequency of percentage and discussion in comparison with corresponding finding of other setup.

**Conclusion and Recommendation:-** Conclusion and recommendation will be forward on the study finding on KAP of infection prevention to responsible body in Shashemene Health science college officials.

## **ACKNOWLEDGMENT**

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I would also present deep thanks to official in Shashemene Health science college registrar, Librarian and respectful respondent's 2<sup>nd</sup> and 3<sup>rd</sup> nursing students as study population.

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## **Acronomy**

**AIDS**-Acquired Immuno Deficiency Dyndrome

**CN:** - Clinical Nurse

**CDC:-** Communicable Disease Control

**HAV:** Hepatitis A virus

**HBV:-**Hepatitis B. Virus

**HCV:-**Hepatitis C Virus

**HCWS:-** Heath Care Workers

**HIV:-**Human Immuno Virus

**HIMSI:** - Health Information Management System Technician

**IP:-**Infection prevention

**NSIS:-** Needle Stick Injuries

**MWN:-**Mid Wife Nurse

**PHN:** -Public Health Nurse

**UV:-** Universal Precaution

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# **Chapter I- Introduction**

## **1.1. Back ground**

The provision of health care is not without risk of concern to both health care workers and the public is the risk of exposure to blood borne pathogens including hepatitis B and C viruses (HBV and HCV) and human immuno deficiency virus (HIV). Most exposures are accidental and can be avoided by sing safe work practice and following infection control guidelines. However, because some exposures are not preventable, immunization and appropriate post management become the key defense.

As student health care workers become more involved in patient contact during their training, they are at risk of exposure to pathogens. It is the responsibility of academic institutions to facilitate appropriate pre-clinical immunization and provide training in infection control to protect patients and the health and careers of undergraduates, and to lay the foundation for safer work practice in health care. Studies monitoring occupational injuries and infection control practice among student health care workers are necessary to assess the efficacy of infection control training and facilitate the development of educational interventions to improve adherence to guidelines and injures. (1)

The fact that blood and other fluids from patients are becoming increasingly hazardous to those who provide care for them had become of great concern to public health professionals the world over. It has specifically necessitated the need for a preventive approach in protecting care patients. Thus the practice of universal precautions as a way of safeguarding possible routine infections in work places had become more and more a widely accepted among various health workers.

It was in 1983, that the center for disease control (CDC) first published a document entitled guidelines for isolating precaution in hospitals. That contained a section entitled “Blood and body fluid precautions. The

recommendations in this section called for blood and body fluid precautions when a patient is known or suspected to be infected with blood born pathogens. In August 1987, CDC published another document entitled recommendations for prevention of HIV transmission in Health care settings. In contrast to the 1983 document, the 1987 document recommended that blood and body fluid precautions be consistently used for all patients regardless of their blood born infection status. This extension of blood and body fluids of all patients are considered potentially infectious for human immune deficiency virus (HIV), hepatitis B Virus (HBV) and other blood born pathogens (2).

## **1.2. Statement of the Problem**

Health care professionals (physicians, Nurses and Mid wives) who work in high-risk areas such as surgical and obstetrical units should know what to do in the event of a possible blood exposure to themselves or another health workers. Preventing accidents (needle sticks) and other blood or body fluid exposures are the primary means of preventing work related transmission of HIV or HCV. For hepatitis B Virus, however, an effective vaccine has been available for nearly 20yrs. Unfortunately, in many countries, even health professionals have not been immunized against this serious blood borne disease. Although only about 5% of people who contract hepatitis B die from disease, a high percentage become chronic carriers or are disabled and can't work because of permanent damage to the liver (cirrhosis). In addition hepatitis B infection is a necessary precursor for hepatitis D(HDV) and primary liver cancer. Being vaccinated protects not only the individual, but also fellow workers, other patients and the individual's family in working to create an infection-free environment, it is important that the rationale for each of the recommended infection prevention process, and their limitations, be clearly understood by clinic staff at all levels- from health care providers to cleaning and maintenance staff the basic infection prevention process, recommended to reduce disease transmission from soiled instruments, surgical gloves and other reusable items are decontamination, cleaning and either sterilization or high level disinfection.

HIV transmission in health care setting requires an immediate and sustained attention. Every year more than 500,000 people contract HIV in Health care setting. According to numbers endorsed by the world health organization, every year at least 260,000 people became infected through unsafe medical injection and at least 5% of new infections or 255,000 people become infected through unsafe blood transfusions.

Unfortunately, many health care providers in developing countries have neither the training nor the supplies to implement universal precautions such as safe

injections practice and the use of gloves, goggles and other protective gear. Without adequate training or supplies, some health care providers reasonably fear for their own safety, which may lead them to refuse providing as many as 70-90% of infected with HIV. Providing as many as 70-90% of injections in developing countries are unnecessary and as of 2000, only 13 of 46 countries in WHO's African regions had implemented national blood safety policies.

### **1.3. Significance of the study**

The significance of this study on compliance of nursing students with universal precautions helps further to assess the gap between the theoretical knowledge and the practical aspect while they are in their professional practice. In addition this research may also serve as academic resource or provide a hunt for further researchers.

## Chapter II

### Literature Review

Compliance for “universal precautions” aim to prevent transmission of human immunodeficiency virus (HIV) hepatitis B (HBV), and other blood borne pathogens. The pathogens and ensuring health staff minimize the risk of exposure to infected body fluids. These measures are important occupational exposures are 37% for hepatitis B, 39% for hepatitis C and 4.4% for HIV/AIDS. Hepatitis B is particularly infection, with sharp injuries to health care workers ranging from 6 to 30% as the study done Kabul governmental Hospital among 950 health staff of these multidisciplinary staff the study disclose through rank of sharp material injury accordingly, gynecologist/Nurses (80.2%) dentists (75.4%) midwives (62.0%) of the injuries hollow born needles (46.3%) usually during recapping. Almost quarters (27.9%) of the respondents had not been vaccinated against hepatitis B. Basic knowledge about universal precautions were found insufficient across all hospitals and codes (L1).

The other study done The cross section explanatory study done among 105 resident doctors at tertiary care teaching hospital and the result disclose, doctors correctly knew about universal precaution only 29 (3L.1) of resident doctors were segregating it of the 93 residents involved indirect patient care 54 (58%) were exposed to potentially infectious material considerable 63 (67.7%) number of resident doctors was following dangerous procedures of either bending it against table wall or recapping (82.2%) used needle before disposal. and the investigator conclude that the pre placement training in various aspects of HIV/AIDS including universal precaution along with refresher courses from time to time (2).

In the study done to assess occupational risk of HIV infection among 99 Dutch medics working in AIDS endemic areas, 61% reported precutaneous exposures during an average stay of 21 months. The mean number of injuries was lower among physicians (2.0 versus 3.9%/ year) and higher among physicians than in previous research conducted in 1987-1990 among Dutch medics returning

from Africa the reduction explained by shift of tasks. On the basis of an estimated a chance of transmission per accident of 0.3% and 1.9 precutaneous exposures per year, the mean occupational risk of HIV infection per year can be estimated at 0.11% per person. (3)

Study done in 1993 in knowledge of HIV transmission availability of equipment, protective practice and in the occurrence of prick and splash in nine hospitals in Mwanza region in the north west of the united state Republic of Tanzania disease that incidents were common with the average health worker being pricked five times and being splashed nine times/year. The annual occupational risk of HIV/AIDS transmission was estimated at .27% for health workers. (4)

The other study done since 21 September to 5 October 2007 in Awassa city, in southern Ethiopia. Among 401 Health workers result disclose as one hundred and thirteen (30.9%) respondents reported at least one needle stick injury in the previous 12 months. 1.4% within two week incidence of needle stick injuries. The cumulative prevalence (49.2%) during their working life time reported injury from sharp objects to their finger (72.2%) hand (17.2%) palm (5.0%) arm (1.1.) other body part (4.4%) across professionals diploma Nurse (30.3%) Junior Nurse (41%) Laboratory technician (9.3%) other professional account (5.5)(5).

The characters of the incident involves syringe needle (54.4%) suture needle (16.7%), lancet (8.9%) glass item (8.3%) glass item (8.3%) and other (11.7%). Accidental injury was reported by 144(80.0) injury as a result of a non compliant patient 17(9.40) injury by other staff 16(8.9%) and other causes (1.7%), 109 (57.1%) respondents reported recapping most of the time. Emergency situation is the leading factors for occurrence of needle injury (23.9%) (5)

## **CHAPTER III**

### **Objectives**

#### **General Objective**

To assess the knowledge, Attitude and Practice, about infection prevention among 2<sup>nd</sup> and 3<sup>rd</sup> yr nursing student in Shasemene Health Science College.

#### **Specific Objective**

1. To assess the knowledge about among 2<sup>nd</sup> and 3<sup>rd</sup> year nursing student.
2. To assess the attitude toward Infection prevention
3. To assess the practice of Nursing student
4. To identify the reason that hinder the application of infection prevention
5. To recommend possible intervention based on finding

## **CHAPTER IV**

### **4. Methodology and Materials**

#### **4.1. Study area**

This study will be conducted in Shashemene Health Science College in west Arsi zone, Oromia regional state. It is 12 Km from Shashemene town and 238km from capital city Adiss Abeba. Closely bounded by Shashemene referral Hospital and Adventist College.

The Shashemene health science college was established in 1972 to train the multidisciplinary Junior Health professionals and latter grew up to train senior diploma level paramedical professionals since 1995 E.C till now. According to current data the school has six Department (clinical Nurse, Public nurse, Midwifery nurse, Laboratory technician, Environmental Health and Health information management system technician) about total of 449 student from whom (M=242 F=207) with prospective vision to add other discipline and to start education at level of degree level in near features. One referral Hospital, 10 Health center are used as professional practice site.

#### **4.2. Study Period**

A cross sectional descriptive study will be planed to conduct among regular 2<sup>nd</sup> 3<sup>rd</sup> year nursing student on KAP or Infection prevention from September 18<sup>th</sup> to October 26<sup>th</sup> 2010 G.C.

#### **4.3. Study design**

A cross sectional study will be design to employee with self administers open-ended and closed ended questioners to assess the knowledge and practice of infection prevention.

#### **4.4. Population**

##### **4.4.1. Source of population**

The source of population will about 245 Regular Nursing students from whom Female=126 and Male=119 currently learning in Shashemene health Science College.

#### **4.2. Study population**

Samples of 245 Regular students are prospected as sample population.

#### **4.5. Sample size and sampling technique**

The sampling will be taken by non-probability with convenience sampling method using sampling from college registrar, all total of 245 Nursing students are expected to involve as respondent (all sampling population are included in the study).

#### **4.6. Data collection Instrument and method**

Structured questioner will be developed in English language. The questioner will be pre tested on similar setting and appropriate corrections are made to improve and to keep the standard of the measuring tool. The data will plan to collect using well experienced BSC holder Nursing Instructors in the campus with orientation on how to use the questioner during data collection.

##### **4.6.1. Data analysis and plan for presentation**

Data will compile, then tailing manually then analyzed finally the finding will present by tables and discussion.

**4.7. Pre-test will done to know or assess the validity and reliability of the questioner.** The pre-test result will not include in the final data result.

#### **4.8. Independent variable**

- Age
- Sex
- Marital status
- Religion
- Ethnicity
- Study discipline

#### **4.8.1. Dependent variable**

- Knowledge of infection prevention
- Practice about infection prevention
- Attitude toward infection prevention

#### **4.9. Ethical consideration**

The recommendation paper will be writing from Jimma University then delivered to Shashemene Health Science College for their cooperation in advance permission will obtain from Dean office, permission, orientation about the nature of the study, the issue of confidentiality and privacy, consent considered from prospective respondent Nursing students in general.

#### **4.10. Limitation of the study**

- Lack to access research done among student on the topic
- Lack of experience on research process
- Shortage of time

#### **4.11. Data communication**

Finally the processed data will be communicating to concerned academician in Shashemene health Science College.

#### **4.12. Operational definition**

1. **Knowledge:** - what the students know about infection prevention

- Knowledgeable- those who score >50% of the question
- Not knowledgeable- those who score < 50% of the question

2. **Practice: Skill-** evaluated on their practice

Good practice- those who score >50% of the question

Poor practice- those who score <50% of the question

3 **Attitudes:** - evaluated on their perception toward infection

Positive: - those who score >50% of the question

Negative:-those who score <50% of the question

#### 4.14. Budget Break down

1	Budget category	Unit cost	Multi plying factors	Total cost
	personnel	Daily per daim	Number of staff by number of working	
	• supervisors	100	2x2	400
	• advisor	200	1x20	4000
	• Data collectors	80	4x2	640
	• Secretarial	50	1x10	500
	• Facilitator	70	1x4	280
	<b>Sub total</b>		<b>Personnel Total</b>	<b>\$ 5820</b>

2	supplies	Cost per item	Number	Total cost
	• Questioner photocopy	30	245x6	372.60
	• transparency	100	1x2	200
	• printing paper	80.00	4x1	320
	• Marker(fine tip)	20.00	1x10	200
	• staple	5.00	1x4	20
	• Binding	10.00	1x12	120
	<b>Sub total</b>			<b>1235.60</b>
	<b>Contiguous 10%</b>			<b>705.26</b>
			<b>G. Total</b>	<b>7757.86</b>

#### 4.14. Work Plan

	Expected Activity	July	August	Sep	Oct	Nov
1	Preparation and submission of the 1 <sup>st</sup> draft					
2	Preparation and submission of the 2 <sup>nd</sup> draft final proposal					
3	Securing of resource					
4	Pre test					
5	Data collection					
6	Analysis					
7	Report writing					
8	Final submission					

## CHAPTER V

### ANNEX 1

#### 5.1. Dummy Table

**Table 1:** Socio Demographic characteristics distribution of Shashemene Health science regular 2<sup>nd</sup> and 3<sup>rd</sup> year nursing student August 2010.

Category		Frequency	%
Age in year	15-20		
	21-25		
	26-30		
	31-35		
	>35		
	Total		
Sex	Male		
	Female		
	Total		
Religion	Orthodox		
	Muslim		
	Protestant		
	Other		
	Total		
Ethnicity	Oromo		
	Amhara		
	Tigre		
	Southern nation		
	Other		
	Total		
Study discipline	CN		
	PHN		
	MWN		
	Total		

**Table 2:** Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by level of knowledge about infection prevention August 2010.

Level of knowledge	Frequency	%
Knowledgeable		
Not knowledgeable		
<b>Total</b>		

**Table 3:** Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by level of attitude toward infection prevention August 2010

Level of Attitude	Frequency	%
Positive		
Negative		
<b>Total</b>		

**Table 4:** Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by level of practice August 2010.

Level of Practice	Frequency	%
Good		
poor		
<b>Total</b>		

**Table 5.** Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by comprehension for universal precaution and risk of infection August 2010.

Level of comprehension about Up	Yes	%	No	%
1. Learn about Up as a topic				
2. Blood and Body fluid of anyone potential risk of infection				
3. Blood and Body fluid are most cause of HIV/AIDS and Hepatitis infection among Hwks				
4. Hand washing after glove is not important				
5. A prophylaxis after exposure to risk of infection for HIV/Hepatitis is a must accordingly				
<b>Total</b>				

**Table 6:** Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by mentioning common personal protecting device August 2010.

No personal protective device	Frequency	%
Answer one		
Answer two		
Answer three		
Answer four		
<b>Total</b>		

**Table 7:** Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by their perception toward Immunization for Hepatitis August 2010.

	Frequency	%
Need Immunization of Hepatitis		
Not Need Immunization of Hepatitis		
<b>Total</b>		

**Table 8:** Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by their Hand wash practice by August 2010.

Level of Hand wash practice				
1. Before glove and after glove always				
2. Before glove only always				
3. After glove only always				
<b>4.</b> Before glove sometimes				
<b>5.</b> After glove sometimes				
<b>Total</b>				

**Table 9:-**Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by their level of using masks or goggles during invasive procedure or delivery procedure by August 2010.

Level of using mask or goggle during Invasive/Delivery	Frequency	%
Always		
Sometimes		
Not at all		
<b>Total</b>		

**Table 10:-**Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by level of use safety tips for hypodermic needle and syringe August 2010.

Level of safety tips for hypodermic needle		
A. Use needle and syringe once		
B. Not , recap, bend or break needle		
C. Decontamination needle prior to disposal		
D. All the above three principle		
E. The above two principle		
<b>Total</b>		

**Table 11:-**Frequency distribution among 2<sup>nd</sup> and 3<sup>rd</sup> year Regular Nursing student by their History of sharp material and blood splash by August 2010.

Level of injury with sharp material and blood splash	Frequency	%
Hypodermic needle injury		
Suturing needle injury		
Blood fluid and blood splash to eye		
Body fluid and blood splash to the body		
Others		
<b>Total</b>		

**Table 12:-** Frequency distribution among 2nd and 3rd year nursing student by their barrier not to compliance for infection prevention August 2010.

Factor affect compliance	Yes	%	No	%
1. Availability of water or solution in every unit				
2. lack of rules and regulation that enforce up				
3. lack of rules and regulation that enforce immunization for infectious disease				
4. lack of protective device always available				
<b>Total</b>				



## Part II Question related to knowledge about universal precaution

1. Do you know about universal precaution?  
A) Yes                      B) No
2. From where have you get the information about universal precaution?
  - A. From college as parts of your course
  - B. From reading
  - C. Health professional at practical site
  - D. From special training concerning universal precaution
  - E. Other
3. At which year of education you were through about universal precaution?
  - A. 1<sup>st</sup> year of your education
  - B. 2<sup>nd</sup> year of your education
  - C. 3<sup>rd</sup> year of your education
  - D. No more education about
  - E. Other
4. Blood and body of fluid of any one are potential risk of infection.  
A) Yes                      B) No
5. Blood and body fluid are the most important source of HIV/Hepatitis at health care facilities  
A) Yes                      B) No
6. Sharp injures is the main cause of blood borne pathogens among health workers
7. Hand washing after procedure is not important as long as gloves are used.  
A) Yes                      B) No
8. Glove must be worn while you contract with all body fluid and blood of any patient.  
A) Yes                      B) No

9. Which procedure expect need to change a glove in between procedure
- A) Dressing of a wound                      B) Extensive surgical procedure
- C) Bed making                                      D) While taking blood sample from vein
10. Prophylaxis after exposure for HIV and hepatitis are a must accordingly to prevent injection.
- A) Yes                                      B) No
11. Write at least 4 protective device which you commonly used during clinical practice
- A \_\_\_\_\_
- B \_\_\_\_\_
- C \_\_\_\_\_
- D \_\_\_\_\_

### **III Attitude related question**

1. Do you believe that using all standards of universal precaution is important all the time?
- A) Agree                                      B) Disagree
2. Do you agree that it is important to take prophylaxis on exposure to blood splash or risky needle injury accordingly?
- A) Agree                                      B) Disagree
3. Do you think Hepatitis B or HIV Aids transmit through needle injury
- A) Agree                                      B) Disagree
4. Do you believe hand washing is necessary before and after any procedure
- A. Agree                                      B) Disagree
5. Do you feel fear while to care for those patient positive for HIV/AIDS during your practice
- A. Agree                                      B) Disagree
6. Do you believe that all health care work should to take Immunization for Hepatitis.
- A. Agree                                      B) Disagree

#### IV Question related to practice

1. When to wash your hand in health care set up
  - A. Before glove and after glove
  - B. Before glove only
  - C. After glove only
  - D. After before glove sometimes
  - E. After glove sometimes
2. Have you ever wear face mask or goggles while in delivery and other Invasive surgical procedure
  - A. Always
  - B. Sometimes
  - C. Other \_\_\_\_\_
3. If not use, the reason to be
  - A. Being not available
  - B. Being not suitable to use
  - C. Other \_\_\_\_\_
4. Safety tips for using hypodermic needle and syringe to follow in practice area
  - A. Use needle and syringe only once
  - B. Not recap, bend or break needle prior to dispose
  - C. Decontamination the needle prior to disposal
  - D. A and B
  - E. All
5. Which glove will use on handling and cleaning contaminated surgical material.
  - A. Utility gloves
  - B. Surgical gloves
  - C. Examination
6. Which glove you will use on pelvic examination
  - A. Surgical glove
  - B. Examination glove
7. Do you have any History of injury while you are in practice
  - A. With sharp surgical instrument
  - B. With hypodermic needle
  - C. With suturing needle
  - D. No HX of injury
  - E. Other

8. Do you have any direct contact with Blood
  - A. Direct Blood/ body fluid splash to the eye
  - B. Direct Blood/Body fluid splash to the other body part
  - C. Other
  - D. No exposure
9. Do you manage (provide care) for pt with Diagnose and Hepatitis
  - A. Yes
  - B. No
10. Have you ever took Immunization for infectious hepatitis
  - A. Yes
  - B. No
11. Reason not to use (if not immunized)
  - A. Not available in the set up
  - B. You don't want to take

**V. Factor affects compliance to universal precaution always available**

1. Does water tap or solution always available in every unit to cleans hands
  - A. Yes
  - B. No
2. Does any Rules and Regulation that force student to follow universal precaution
  - A. Yes
  - B. No
3. Does any rules and regulation that force student to take immunization for infectious disease prior to practical attachment
  - A. Yes
  - B. No
4. Does protective device (gloves of different type, mask, goggles) supplied in practical site
  - A. Always
  - B. Sometimes
  - C. Not at all