WOLKITE UNIVERSITY

ASSESSMENT OF KNOWLEDGE, ATITUDE AND PRACTICEOF INFECTION PREVENTIONAMONG HEALTHPROFESSIONALS IN WOLKITE UNIVERSITY SPECIALIZED TEACHING HOSPITAL, GURAGE ZONE SOUTH REGION,ETHIOPIA.

This research Submitted to Public Health Department in partial fulfillment of Bachelor of Science Degree in Public Health. .

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Abbreviation and Acronym

AD –auto disable syringe

CDC-center for disease control

HBV-hepatitis B virus

HCV-hepatitis C virus

HC-health center

HCAIS- health care associated infections

HCWS-health care workers

HIV\AIDS-human immunodeficiency virus/acquired Immunodeficiency deficiency syndrome

NSSHCW- National surveillance system for health care workers

PPE -personal protective equipment

WHO-world Health organization

WUSTH-wolkite university specialized teaching hospital

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ABSTRACT

Back ground: - Infection prevention can be defined as measures practiced by health care personnel in health care facilities to decrease transmission and acquisition of infectious agents. Infection in health care facilities is a major public health problem in most developing countries like Ethiopia and the overall incidence is increasing.Nosocomial infections occur in 5%-45% of all hospital patients in Ethiopia and infection prevention practices are geared towards reduction of occurrence and transmission of infectious disease.

Objective: - To assess the knowledge and practice of infection prevention among health Professionals in Wolkite University Specialized TeachingHospital2021.

Method:-A Hospital-based cross-sectional study was conducted with a structured pre-tested questionnaireamong 154 participants. The healthcare workers were selected through systematic random sampling technique.Data was entered and analyze by the computer using SPSS version 20.0 statistical software package. Frequencies of descriptive statists was presented by using graphs,percentages and tables.

Results:-. In this study out of total 154 sampled health professional, 143 of them were enrolled in the study which made response rate of 92.8%. 54.7% of health professionals had participated in training program dedicated to infection prevention and 60% of them had needle stick or sharp injuries. Almost all 98.9% of respondents had ever worn personal protective equipments and 53.7% wash their hand before touching the patient.

Conclusion and Recommendation:-

- The study had shown that nearly two-thirds of health care workers were knowledgeable about infection prevention and only less than half of the health care workers had a negative attitude towards infection prevention. Nearly above half of the health care workers had safe practices for infection prevention. This study is very important as it gives some baseline information about information for the administrative concerned bodies and for the health care provider to improve their practice to provide good care to the patient. Further comprehensive research should be done on Infection prevention among health professionals.

CHAPTER ONE

1. INTRODUCTION

1.1. BACKGROUND

Infection prevention measures practiced by health care personnel in health care facilities to decrease transmission and acquisition of infectious agents. It is a very pertinent issue within clinical circles public health and among health services consumers. It is mandatory to prevent transmission among health professionals, from health professionals to patient and from patient to health professionals. (1)

World health organization suggests that in 2000 reuse of injection devices in developing countries accounts for 22 million new infections with hepatitis (HBV), 2 million infections of HCV and 260,000 HIV. Additionally injection safety base line studies revealed that practices was un safe exposing patient, HCW and the community to transmission Of HIV and other blood born infections. (1)

The world health organization (WHO) estimated that at least 50% of the 12 billion injection administered each year in the developing world are unsafe posing serials health risk to recipients, health workers and the public. (2,3). Injuries from sharp devices have been associated with the transmission of more than 40 pathogens, including hepatitis B virus (HBV), hepatitis C virus (HCV) and human immune deficiency virus (HIV). (4).

Another important component of infection prevention practice is hand hygiene. Despite its rocky beginnings, hand washing has become a part of our culture. Hand washing and other hygienic practices have been tough at every level of school, advocated in the work place and emphasized medical training. (5).

Data from National surveillance system for health care workers (NSSHCW) show that nurses sustain the highest number of percutaneous injuries. However, Health care workers including supportive staff; housekeeping, maintenance and laboratory personal, who work in these settings also are at risk of exposure to serious potentially life threatening infections. (6, 7,8).

In 1987 the centers for disease control and prevention (CDC) developed standard precautions to help protect both health care workers (HCW,) and patients from infection with blood borne

pathogens in the health care setting. These recommendations stress that blood is the most important source of HIV, HBV and other blood born pathogens and that infection control efforts should focus on the prevention of exposure to blood as well as the receipt of HBV immunization. (9).

1.2. Statement of the problem

In the past 20 years, the overall incidence of HCAI has increased by 36 percent. The substantial human suffering and financial burden of these infections is staggering. HACIs occurs worldwide and affect both developed and developing countries, about 5% -10% patients acquire one or more infections and 15%-40% of patient admitted to critical care thought to be affected (6).

It is also estimated that more than 1.4 million people worldwide are suffering from infections acquired in hospitals. More over annually in the United States, approximately 2 million patients develop HAI, and nearly90, 000 of the patients are estimated to die; this ranks HAI as the fifth leading cause of death in acute care hospitals (7).

According to the Centers for Disease Control and Prevention (CDC) in US nearly 1.7 million HAIs occur yearly, leading to approximately 99,000 deaths every year. Such infections were long accepted by clinicians as an inevitable hazard of hospitalization. However, recent efforts have demonstrated that relatively simple measures can prevent the majority of common HAIs, as a result, hospitals and providers are under intense pressure to reduce the burden of these infections .Four specific infections together account for more than 80% of all HAIs(8).

At least 40 different pathogens were transmitted by sharpinstruments and needle sticks injuries. An estimated one-third of the global population has been infected with HBV; approximately 350 million people are lifelong carriers (8).

For HCV, the World Health Organization estimates that 170 million individuals worldwide are infected. According to UNAIDS, worldwide around 39million people are living with HIV as of December, 2012.

According to data from EPI Net system, hospital workers-incur approximately 30 needle stick injuries per 100 beds per year an alarming figure by no exaggeration. (5)In Sub-Saharan countries the problems associated with patient safety is often hampered by inadequate data. However, prevalence studies on hospital-wide healthcare-associated infection from some African

countries reported high infection rates (Mali 18.9%, Tanzania 14.8%, Algeria 9.8%) with patients undergoing surgery being the most frequently affected (4).

In addition toHCAIs, developing countries are hit hard by HIV/AIDS pandemic hepatitis B virus and hepatitis C virus infections .In resource-poor settings, rates of infection can exceed 20%. (5)

Hospital wide health care associated infection prevalence varied between 2.5% and 14.5% in Algeria, Burkina Faso, Senegal and Tanzania. Over all HCAI cumulative incidences in surgical ward ranges from 5.7% to 45.8 % in studies conducted in Ethiopia and Nigeria (9). The same is true in Ethiopia that the HCAI is a major problem that needs attention and action to improve the health institution infection prevention knowledge and practice. Hence, in Ethiopia in general and in Gubre particular, the problem of health care associated infections attributed to be common in health institutions even though here was no detail study done in this area.

1.3. Significance of the study

Obviously, any study findings are come up with certain outcome. The outcome brings change for users and the primary beneficiaries of the study are healthprofessionals.they have opportunity to know transmission, preventive measures and severity of infection.

The significance of the study for health professionals is:-

- It helps for the improvement of method of infection prevention by increasing their awareness.
- It gives clue for improvement of health professionals practice toward infection transmission.
- It used as step stone for other investigator to solve the problem in health professionals.

To break down the infection transmission of the hospital it is necessary to improve infection prevention practice. Therefore, the purpose of the study is to assess the knowledge and practice of infection prevention practice among health professionals of the hospital.

CHAPTER TWO

2. LITERATURE REVIEW

Health care workers should have the right to be able to protect themselves against infection, whether it is HIV, hepatitis or anything else. The following universal infection control and prevention practices are advised by the world health organization (WHO) to help protect health professionals and clients from blood born infections including HIV.

Washing hands with soap and water before and after procedures, using protective barrier such as gloves, gowns, aprons, masks, goggles for direct contact with blood and other body fluids, disinfecting instruments and other contaminated equipment, handling properly, soiled liven, gloves and leak proof bags should be used if necessary. Cleaning should occur outside patient areas using detergents and hot water, using a new auto disable syringe (AD) for single use disposable injection equipment for all injections is highly recommended and discarding contaminated sharps immediately and without recapping in puncture and liquid proof container that are closed, sealed and destroyed before completely full. Document the quality of the sterilization for all medical equipment used for percutaneous procedures. (7, 13, 14)

Health professionals are increasingly at risk of becoming infected with serious blood born viruses such as HBV, HIV, and many other multiple drug resistance bacterial infections. The greatest risk is for staff that performs or assists with surgical procedures (physicians, nurses and mid wives): process surgical instruments and equipment and performs housekeeping and waste management tasks, including disposal of infectious waste item (15, 16). Believing that safety injection and hand hygiene compliance can show the desired outcome of infection prevention in the study area this survey will address the following components.

2.1. Safe injection

WHO defined safe injection as one that does not harm to the recipient, does not expose the provider to any avoidable risk and does not result in waste that is dangerous to other people. (2)

Globally, WHO estimated that every year unsafe infection and needle stick injuries cause at least 8-16 million HBV infections, 2.3-4.7 million HCV infections and 160,000 HBV/AIDS infection (4.6). These chronic infections lead to a high burden of morbidity and mortality. (4).

A study done in Africa on safety of injection showed that waste disposal was problematic in Chad, Cameron, Cote-Devoir, Guinea Bissau and Uganda. In these countries there were nohealth centers (HC) that had a facility for safe disposal of used materials. But in Ethiopia, Rwanda, Kenya, and Zambia, incineration of used materials and syringes was reported to be the common practice. (7)

A study done in Ethiopia at southern nation, nationalities and people (SNNP) Region showed that 32.4 % of health care workers reported as they had sustained at least one form of accidental injury by needle or other sharps. Among these injuries both deep and penetration injuries constitute 63.8 nurses and health assistants sustained the highest proportion of accidental injuries by needles or sharps. (17)

2.2. Personal Protective Equipment

Protective barriers now commonly referred to as personal protective equipment (PPE), have been used for many years to protect patients from microorganisms present on staff working in the health care settings. More recently, with the emergency of HIV/AIDS and HCV and the resurgence of tuberculosis in many countries, use of PPE now has become important for protecting staff as well. (14)

A type of protective clothing used will depend on the extent of the risk associated with the health care waste, so that the following should be made available to all personnel who collect or handle health care waste: head cover or caps, face masks, eye protectors, leg protection or boots and disposable glove or heavy-duty gloves .(14)

A study conduct in Northern Nigeria shows that only 70.1% usually wear gloves before handling patients, 72.4% change gloves after each patient contact. About 20.2% usually wear face mask and 35.6% wear protective garments when necessary. About 37.2% have good attitude towards PPE and 43.2% strongly agree that PPE are important to protect health professionals as well as patients. (18)

2.3. Safe Sharp Waste Management

It is important to collect and properly contain syringes and needle at the point of use in sharp containers that is puncture and leak proof and that is sealed before it is completely full. Unsafe sharp waste collection causes between 5% and 28% of needle stick injuries. (19)

A study conducted in Northern Nigeria shows that only 3.3% of respondents reported reuse of needle and blades and 5.7% reuse disposable items regularly. Only 3.3% had a sharpdisposal system in their various work places and 32.1% have good attitude towards proper disposal of syringes and needles. (18)

Though there were few studies were done in Ethiopia one of the study done in Addis Ababa showed that 84% of health care workers dispose used needles in open plastic bucket and 54% of HCW's were observed while they were recap needles and also found that chlorine solutions were prepared and used in a very weak strength (20).A study done in SNNPR by W/Gebral Y. revealed that the prevalence of unsafe injection were 74% and 32.4% of health professionals sustain sharp at needle stick injuries in one year and 64% of these injuries were deep or penetrating injuries. (5).

Another study done in Oromiya region by Kumbi S revealed that decontamination solutions were not prepared properly or not changed daily and health care providers did not consistently use PPE (21). As of the report of injection safety survey in Ethiopia lack of supply of syringes, needles and equipment was considered as a reason for few of the unsafe practice. (22)

2.4. Hand hygiene

According to the United States centers of disease control and prevention (CDC), "Hand washing is a single most important means of preventing the spread of infection." (14). The CDC guideline specify that hand hygiene should occur with any patient contact and HCW's hand should be wasted with a non-antimicrobial soap and water or and antimicrobial soap and water when hands are visibly soiled or contaminated. If hands are not visibly soiled, health professionals can use alcohol based hand rub for routinely decontaminating hand in clinical situations. (23)

Failure to perform an appropriate hand hygiene is considered to be leading cause of nosocomial infections and the spread of multi resistant microorganisms and has been recognized as significant contributor to outbreaks. (8)

A study done in university of Geneva hospital in Switzerland revealed that the hand hygiene compliance rate range from 23% to 87% over all, doctors practiced proper hand hygiene only 57% of the time when opportunities for hand washing a rose (23). And a study done by Nigat project and Engender health in Ethiopia showed that health care workers don't usually wash their

hands on arrival to work place and before putting on glove; even though, it is well practiced between clients and before leaving work place. (20)

Health care workers encounter difficulties in complying with hand hygiene indications at different level. Reasons for why health care professionals do not wash their hands includes beliefs that hand washing damage nails and nails polish, is inconvenient, does not affect clinical outcome, unnecessary when glove are worn, hand washing between every patient encounter is unnecessary and it takes too much time. (24

CHAPTER THREE

3. OBJECTIVES

3.1. General Objective

To assess the knowledge and practice of infection prevention among health professionals in Wolkite Town Gubre sub city, Wolkite University Specialized Teaching Hospital,South Ethiopia.2021.

3.2. Specific Objective

To assess knowledge of health professionals towards infection prevention in Wolkite University Specialized Teaching Hospital.

To determine practice of health professionals of Wolkite University Specialized Teaching Hospital on infection prevention.

CHAPTER- FOUR

4. METHODOLOGY

4.1. Study area and period.

The study was conducted Guraghe zone, Wolkite town, Gubre subcity, Wolkite University specialized teaching hospital, which is developing town located 180km south of Addis Ababa and 17km east of Emdiber. And this study was carried from Oct 5-20/02/2014 E.

4.3. Study Design

The study design was conduct institutional based cross-sectional study.

4.4. Source population

All health professionals who was working in wolkite university specialized teaching hospital.

4.5. Study population

Selected health professionals who are working Wolkite University specialized teaching hospital are study population of study.

4.6. Inclusion criteria

All of health professionals who are working in the hospital.

4.6. Exclusion criteria

Students on practice and professionals who are non- volunter&absent in repeated visit for data collection.

4.7. Sample size determination and sampling procedure

4.7.1. Sample size determination

In determining the sample size, the standard formula for a single proportion was used.

The assumption made to be confidence level of 95%, a prevalence of 54% practice, which was done on assessment of the knowledge, attitude and practice of health care workers on universal precaution in Northern Guraghe zone and marginal error of 5% and considering 10% no Respondent's rate. The total health professional of the hospital is 220 then the required sample size is

n= (Z^2 P (1-P))/d^2

Where,

Z= 1.96, at 95% confidence interval

P= anticipated population proportion (p= 0.54) Practice of infection prevention

D= Margin of error (0.05)

n= (1.96)2 0.54 (1-0.54)/(0.05) 2

= (3.8416) (0.2484)

= 0.954/0.0025

= 381. 7~ 382

Since the size population in the study is below 10, 000 it needs finite population correction formula.

nf= n/1+n/N Where, n= Sample size (calculated)

N= total number of health professionals

nf= 382/1+1.73

= 139.9~140

By adding 10% non-respondent rate

nf= nf (calculated) + 10% of nf

= 140 + 10% (140)

= 140 + (0.1 x 140)

= 140 + 14

= 154So, sample size of this study is 154.

4.7.2. Sampling procedure/ technique

Among the total number of health professionals, the systematic random sampling method was used to select required number of health professionals. The interval of sampling determined as follows.

Where, N= total health professionals

n=Sample size

k= sampling interval

K=N/n

220/154 = 1.42 ~ 1

The name of all health professionals in the hospital is listed first, then after we select first health professional by lottery method, was select a name by interval of one name.

4.8. Measurement tools and study variables

4.8.1. Measurement tools / instrument and data collection

The data was collected using semi-structured questionnaire which is prepared in English. Both open and closed ended questions to be used to collect the data. When the appropriate respondent are not available in the hospital during initial visit, revisit will considered to collect the appropriate person up to three times; however, respondents which are not available with all these trail we considered as non-response.

A total of three (3) students of the group members are involved in data collection activities.

4.8.2. Study variables

4.8.2.1. Independent variables

Age

Sex

Profession

Service year and Training infection prevention.

4.8.2.2. Dependent variable

Knowledge of infection prevention

Practice of infection prevention

4.9. Data collectors and data quality control

A self-administered questionnaire was use for datacollection by distribution at the HCWs work unit.

The tool wasadapted from a modified CDC infectionprevention and control assessment tool foracute care hospitals and related kinds of literaturesand modified in our context.

The questionnaire was prepared in English and For quality control purpose the questioner checked before leaving the respondents for completeness and the respondents are informed about the importance of study

Pre-tested was doneinHCWs, in the other hospital.

which was not include in the actual study to assess

the content and approach of the questionnaire

and necessary adjustments are make before actualdata collection. The completeness and accuracy of questionnaire checked on daily basis by all group members.

4.10. Data process and analysis

Data were checked manually for its completeness. Then it was coded, cleaned, entered and analyzed using SPSS version 20.0statisticalsoftwarepackage. The quantitative data was summarized by descriptive statistics using the frequency, percentage, and graphs.

4.11. Ethical consideration

An official support letter was obtained from wolkiteuniversity College of medicine and health science, which helps the group to get acceptance and support from different administrative levels; moreover, the respondents were provided with explanation about the aim of the study.

They were told that they have a full right not to accept the request and confidentiality assurance, Written and oral informed consent will be given to respondents.

4.12. DISSEMINATION OF RESULTS

The result was submitted to public health department of Wolkite University, Wolkite university specialized teaching hospital, and disseminated to all invited guests. Also the result will presented to disseminate to the public through internet in collaboration with college of Medical and health sciences and Wolkite university administration.

4.13.Operational Definitions

Infection Prevention: Measures practiced by health care workersin health care facilities to decrease transmission and acquisition ofinfection
Reference (KAP of infection prevention among health professional west gujji zone, bulehora university 2018)

Knowledge: The state of knowing or understanding particular factsof health care workers about infection prevention
The knowledge part has 11 questions. Those who correctly answered at least 6 questions were considered as knowledgeable whereas those whoanswered below 6 questions were considered as not knowledgeable. To assess HCW knowledge 0 or 1 score was given depending on the question.
Reference (KAP of infection prevention among health professional west gujji zone, bulehora university 2018)

Attitude: The way of behaving, thinking, and feeling of healthcare workers towards infection prevention
The attitudepart has 5 questions. Those who correctly answered at least 5 questions were considered as good attitude whereas those whoanswered below 5 questions were considered as poor attitude.
To assess HCW 0 or 1 score was given depending onthe question.

Reference (KAP of infection prevention among health professional west gujji zone, bulehora university 2018)

Practice: The way by which health care workers were doing towardsinfection prevention**.**

The practice part has 19 questions. Those who correctly answered at least 9questions were considered as good practice whereas those whoanswered below 9 questions were considered as poor pracice. To assess HCW practice 0 or 1 score was given depending onthe question.

Reference (KAP of infection prevention among health professional west gujji zone, bulehora university 2018)

CHAPTER 5.RESULT

5.1. Socio demographic characteristics of respondents

In this study out of total 154 sampled health professionals, 143 of them were enrolled in the study which made the respondents response rate of 92.8%. Among the respondents 65.7% were males and 34.3% were females.

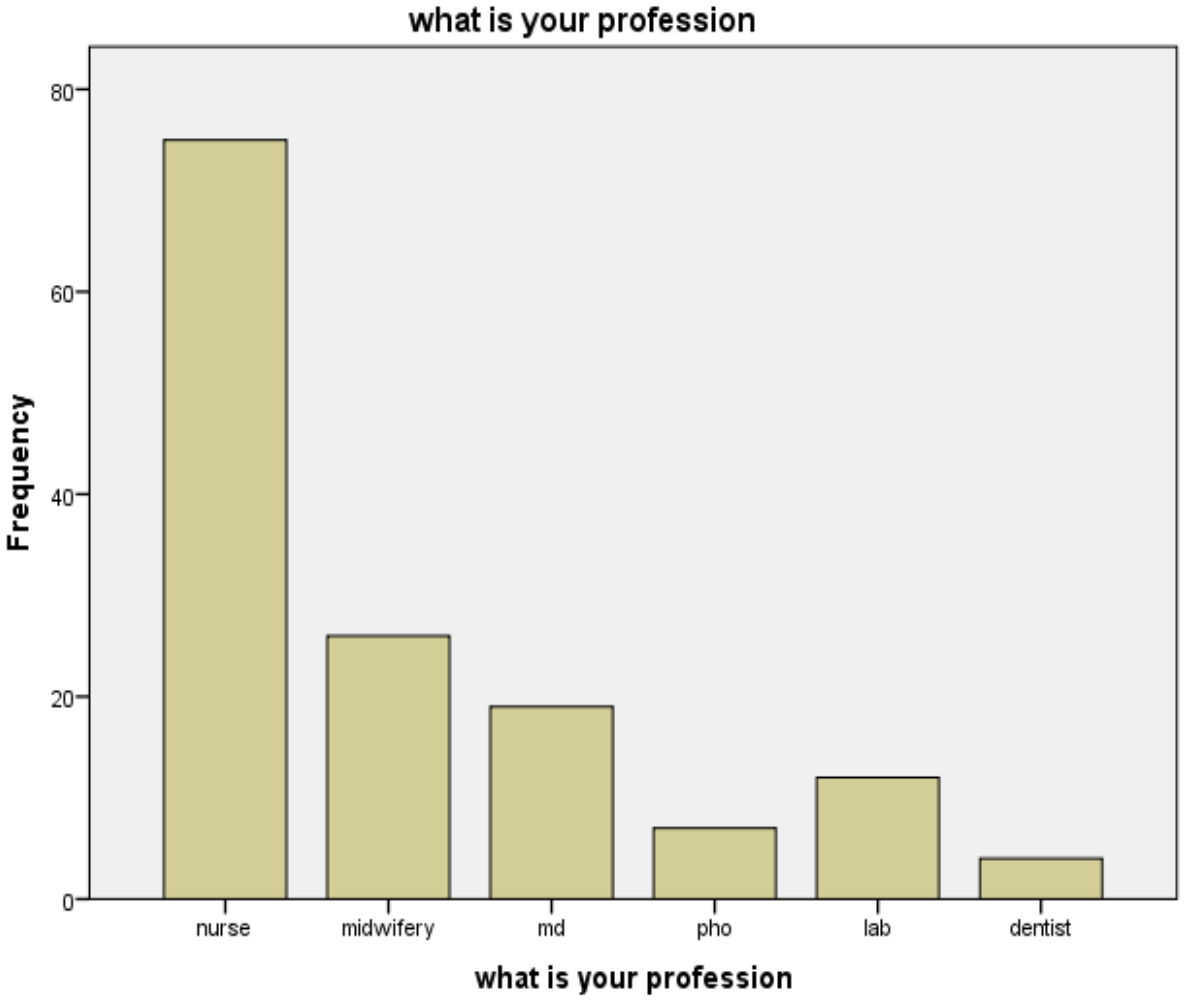
Regarding marital status 41.3% were married concerning religion 45.5% were muslim ,34.3% were orthodox, 16.1% were protestant and 4.2% were catholic.

Concerning the professional categories of respondents 52.4%were nurses, 18.2% were midwifery , 13.3% were medical doctor,8.4% were laboratory technicians,4.9% were health officer and the2.8% were dentist.

Table 1: Socio demographic characteristics of the respondents in wolkite town, gubre subcity WUSTH SNNPR region oct,2021(n=143)

Variable		Frequency	Percent %
Sex	Male Female	94 49	65.7% 34.3%
Marital status	Single Married Divorced	84 59	58.7% 41.3%
Profession	Nurse Midwifery Medical docter Public health officer Lab technicial Dentist	75 26 19 7 12 4	52.4% 18.2% 13.3% 4.9% 8.4% 2.8%

Religion	Muslim	65	45.5%
	orthodox	49	34.3%
	Protestant	23	16.1%
	Catholic	6	4.2%



The number of Health professional are Nurse(75) ,Midwifery(26), MD(19) ,PHO(7) ,Lab(12) and Dentatist(4)

Figure1. Graphic description of respondents by their qualification(professions)

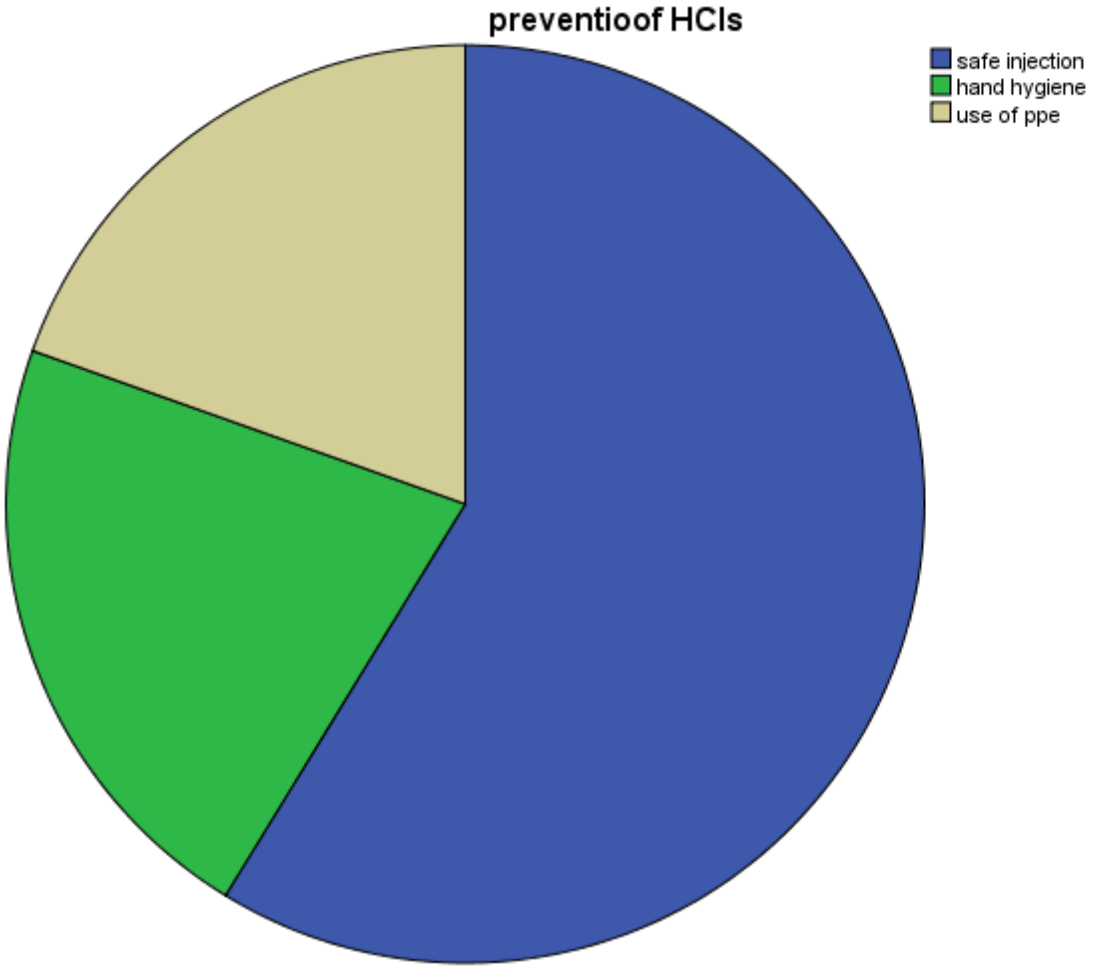
5.2 knowledge of respondents towards infection prevention

Among the total respondents 88(61.2%) health professionals are participated in training program about infection prevention and 84.2 respondents are aware of HCAIs.the most common method of infection transmission that suggested by respondents are 49.5% through blood and body fluid contact,34.7% through contaminated needles and sharp materials which followed by air droplet constituting 13.7%. the most known prevention method of HCAIs that mentioned by respondents are safe injection 62.1%,hand hygiene 12.6%,PPE 8.4%,and instrument processing 6.3%.

Table 2 knowledge of the respondents in wolkitetown,gubresubcity WUSTH SNNPR region oct,2021(n=143)

Variable		Frequency	Percent(%)
Training participated?		88	61.2%
YES		55	38.8%
NO			
Awareness on HCAIs	YES	132	92.3%
	NO	11	7.7%
Transmission of HCAI?	1.Blood and body fluid	14	9.8%
	2.contaminated needle	19	13.3%
	3.through air droplet	11	7.7%
	4.All	99	69.2%
Prevention method of HCAI?	1.safe injection	85	59.4%
	2.hand hygiene	30	21%
	3.use of PPE	28	19.6%
Risk of unsafe injection	1.HBV	43	30.5

2.HCV	0	0
3.HIV	25	17.9
4.all	71	49.5



Safe injection among 143 respondents 85(59.4%)

Hand hygiene among 143 respondents 30(21%)

Use of PPEamong 143 respondents 28(19.6%)

Figure 2- most common methods of HCAI prevention suggested by respondents

wolkite university specialized teaching hospital SNNPR region Ethiopia oct 2021

5.3. Practice of infection prevention

Among the respondents 60% of health professional had participated in training program dedicated to infection prevention and 55.8%of respondents said there is infection prevention policy and guidelines in the hospital but 40% of respondents did not know.

5.3.1. Safe injection

Among the respondents 89.5% explained the procedure to the patient or their attendants before injection and 85.3%of them used fresh cotton swab prepared for the purpose of injection (as shown in table 2).The use of one syringes and one needles, 100% of respondents.

Sixty (60%) of health professionals reported that they ever had needle stick or sharp injuries and 24.2%had sharp or needle stick injuries in the last one year. The reason of injury stated by respondents were 27.4%, 29.5% and 4.2%, were during sudden movement of patients, recapping of needle and disposing sharp materials respectively. The respondents who recap the needle were 66.3%,of these 49.5% of them use single hand scoop techniques and the other 17.9% use two hand technique's 70.5% of the respondents reported that they ever had contact to blood or body fluid. The measures they had taken after contact to blood or body fluid includes 13.7% washing with water and soap, 54.7% washing with alcohol or chorine solution (as shown in table 2).

Table 3:-Safe injection related practice of the respondents in wolkitetown,gubresubcity WUSTH SNNPR region oct,2021(n=143)

Variable	**Frequency**	Percentage(%)
Explain procedure YES	127	89.5%
NO	15	10.5%

Use fresh cotton swab YES NO	122 21	85.5% 14.7%
Technique of injection Use one needle and syringe for one patient Use single syringe for several patient	 143 0	 100% 0
Ever inured with sharp YES NO	85 57	60% 40%
How many times 1 times 2times More than 3times	 77 34 31	 53.7% 24.2% 22.1%
Sharp /needle injury in the last year YES NO	68 75	47.5% 52.5%
IF yes how? Sudden movement of patient During recapping Handling and collection of wastes Others	30 28 10 0	20.5% 19.5% 7%
Recapping of needle for the purpose YES NO	95 48	66.3% 33.7%
Technique of recapping Single hand sloop Two hand recapping	 71 28	 49.5% 29.5%

Ever blood or body fluid contact YES NO	101 42	70.5% 29.5%
Measure taken after contact Washing with soap and water Clean with alcohol and iodine Seek post exposure prophylaxis Get tested for HIV	 19 78 2 5	 13.7% 54.7% 1.1% 3.2%

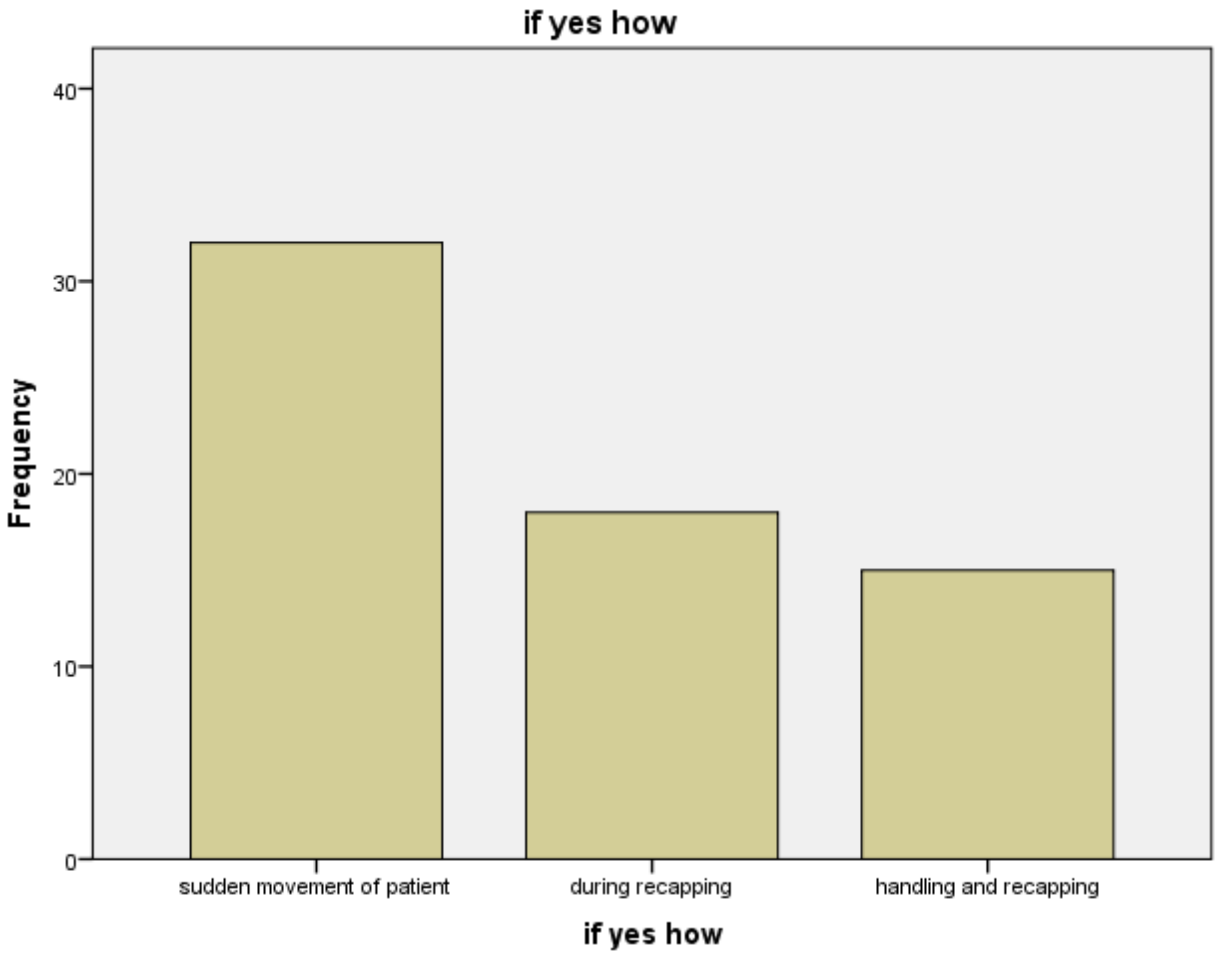


Figure 3- description of causes of needle injury among health professionals of wolkite university specialized teaching hospital SNNPRregionEthiopiaoct 2021

5.3.2. Personal protective equipment

Almost all 98.9% of respondents ever wore personal protective devices. Among the respondents who ever wore personal protective devices, 45.3% used both glove and gown,50.5% used Apron,glove,gown,shoes/boot's and mask , 2.1% used only gown and 2.1% used only glove.

Almost all 97.9%of respondents wore glove when touching blood or other body fluid or mucus membrane. Among the respondents, 54.7% were using gloves for all patients as needed, 4.2% for only HIV suspected cases and 41.1% for procedure which needs gloves. 97.9% of respondentschanged gloves between patient contact and 81.1% of them changed gloves between different procedures on the same patient.

Table 4:- Use of personal protective equipment by the respondents in wolkitetown,gubresubcity WUSTH SNNPR region oct,2021(n=143)

VARIABLES	Frequency	Percentage
Wear PPE		
YES	140	97.8
NO	3	2.2
Types of PPE		
Glove	3	2.1
Gown	3	2.1
Glove and Gown	64	45.3
Glove,gown, Head cover, Boots/shoes and others	72	50.5

Wear glove YES NO	 138 4	 97.1 2.8
Time when they use glove For all patients as needed For only HIV positive cases For procedures which need gloved	 78 6 58	 54.7 4.2 41.1
Change glove between patient contact YES NO	 140 3	 97.9 2.1
Change glove on the same patient YES NO	 116 27	 81.1 18.9

5.3.3. Safe management of sharps and other medical wastes.

All100% of respondents were discharging needle, syringes and other sharps after use in sharp container and 88.4% of them were appropriately disposed medical waste. 82.1% of respondents reported that health care workers have responsibility for disposing of sharp and medical waste where as 17.9% reported that non health professional have responsibility disposing of sharp and medical waste.

Among the respondent; 50.5%% were disposing syringes and needles, 47.4% were disposing lancets, syringes and needles, needles for Iv bagand'sother contaminated sharps. (as shown in table 40)

Table 5:- practice of safe management of sharps and other medical waste by respondents in wolkite university specialized teaching hospital snnpr region Ethiopia oct 2021(n=14)

Variable	Frequent	Percentage(%)
Discharge sharps in to sharp container YES NO	**143**	**100%**
Appropriate dispose other medical wastes YES NO	126 17	88.4% 9.5%
Dispose tissue Open dumping Burial in the pit Burning	 28 111 3	 20% 77.9% 2.1%
Responsible for disposal of sharps and medical waste Health care worker Non health professional	117 25	82.1% 17.9%
Presence of safety box YES NO	 138 5	 96.8% 3.2%
Wastes that goes into safety box Syringe and needle Syringe and needle,needle for Iv bags,lancet's,otherscontaminated sharps.	 75 69	 52.6% 47.4%

5.3.4. Practice of hand hygiene

Among the total respondents 53.7% wash their hand before touching the patient or their surroundings, and 57.9% wash their hand after removal glove. 54.7% of health professionals used different methods to clean their hand on working using water and soap 45.3% were cleaned by alcohol. Among the total of respondents 18.9%, 55.8% and 25.3% were always, sometimes, and don't clean or wash their hands respectively after touching the patient. The reason suggested by the respondents for washing hands before and after touching the patient or their surrounding include 27.4% responds as it determine patient cure rate or affect clinical outcomes, 26.3% claimed that hand washing was necessary. on the other hand those who had not washed their hands indicated that washing hand 34% was not necessary between patients, 45.4%,it doesn't affect clinical outcome 11.3% was not necessary after wearing glove, 9.1% was hand washing facilities are not conveniently placed or well designed and 3.4% was other reasons.

The time health professionals washed their hands 22.1% were on procedure 14.7%, before touching the patient, 6.3% were after tochingpatients , 9.5 after toilet use.

Table6. Hand hygiene of the respondents in wolkitetown,gubresubcity WUSTH SNNPR region oct,2021(n=143)

Variable	Frequency	%
Clean hand before touching patient		
YES	177	53.7
NO	66	46.3
Clean/wash hand after touching patient		
YES	93	57.9
NO	60	42.1
Wash hand after removal of glove		
YES	83	57.9
	60	42.1

NO		
Method to clean hand using plain soap and water Antimicrobial	78 65	54.7 45.3
Frequency of hand washing Always Sometimes Never	27 80 36	18.9 55.8 25.3
Reason for washing hand Was necessary Affect clinical outcome	 38 39	 26.3 27.4
Time to wash hands On procedure Before patient contact After patient contact After using the toilet All	 31 21 14 45 68	 22.1 14.7 6.3 9.5 47.4
Reason for not washing hand Does not affect clinical outcome Unnecessary when gloves are wore Facilities not conveniently placed Between each patient encounter is unnecessary Others	 16 65 13 49	 11.3 45.4 9.1 34

CHAPTER (6). DISCUSSION AND CONCLUSSION

6.1 DISCUSSION

This study was done to assess the knowledge, attitude, and practice of infection prevention among health care workers in Wolkite University Specialized Teaching Hospital southernGuraghe Zone. Having adequate knowledgeof HCW was essential for controlling and preventing infection.The current study finding revealed that 120 (84.2%) of HCW were knowledgeable and 23 (15.8%) were not knowledgeable aboutinfection prevention.

This study finding was relatively similar to study findings done inNepal (57.1%) and Alansar General Hospital, Saudi Arabia (60.4%)[14]. The possible reason might be due to the similar operationaldefinition scale for both study and the same methodology likesimilar data collection tools for the second finding. However,the finding was lower compared to study finding done in Zambia(83.21%) [9], Debra Markos (84.7%) [19,20], and Dessie (86.4%)[17]. This may be due to the difference in a study setting and studypopulation.

The current finding revealed that 78(54.7%) of respondents were used hand antiseptic as infection prevention. This findingwas lower compared to the study finding done at Afar ReferralHospital, 87.9%. The reason for these differences may be due tothe study population; which was done at referral hospital and scaleof definition greater than 75% as good knowledge.Health care workers should wear gloves when there was contact with different blood, saliva, mucous membrane, and non-intact skin.A glove cannot replace handwashing and act as a barrier againstinfectious microorganisms for both HCW and client. Despite this,finding from the current study done, only 140 (97.8%) were wornglove during injection and blood drawing procedure. This means that about 3(2.8%)of HCW was not worn glove during working with infectious procedures that transmit the infection from HCWto a patient and vice versa.

This finding was good compared tothe study finding done in Gondor University Referral Hospital,88.7% wear gloves during risky procedures [16]. The possible justification could be due to different study populations; the studydone in Gondor was only at a referral hospital and also sample sizevariation between two studies.The positive attitude towards infection prevention was one of themost pillars for infection prevention and control. However, thefindings from the

current study indicate that less than half (40.8%)of HCW had a positive attitude and 59.2% of them had a negativeattitude towards infection prevention respectively.This study finding was lower compared to the study done at 46.7%in west India [21-25]. This might be due to methodology; the studyin west India was done at the regional hospital, had better datacollection techniques, and sample size variation between study.This finding was very lower compared to the study done at JimmaUniversity Teaching Hospital, 82.3% [21,22], in India, 90% [17],and Zambia, 81.3% [9]. The possible justification might be due tothe study setting and population. The current study was done atprimary health care level and general hospital and among varietiesof health care workers whereas the previous study was done at teaching referral hospital.Decontamination was one of the instrumental processes thatremove different microorganisms to make instruments safe forhandling and reuse. The current finding shows that more thantwo-thirds (69.2%) of health care workers think that one part of bleach was added into four parts of water for 0.5% of chlorinesolution preparation. This indicates that 70.8% of the respondentwas applying chlorine solution preparation correctly and this may make either did kill microorganism effectively or damagedinstruments.

Regarding the attitude of handwashing, wearing gloves does notsubstitute hand washing.

The safe practice was the practice that does not harm the recipient,exposé providers to at-risk, and does not result in any waste thatdangerous for the other people. However, the current study revealedthat; 86 (60%) of HCW had safe practice and 57(40%) hadunsafe practice. These results in more or fewer supports studydone at Debra Markos 57.3% had a good practice [18], and theUniversity of Gondor, 57.4% [16]. The possible reason mightdue to a similar rating scale definition and time gap. The otherpossible reason could be varieties of professionals were includedin both studies. This finding was higher compared to the studyfinding done in Nepal, 48.2% [4]. The possible explanation couldbe sample size variation between two studies and a previous studyonly done in nursing professionals.Appropriate handwashing was very important for the preventionof the spread of infection.

The current study was done on a different level of health care.Recapping a needle was one of the malpractice that put providers atrisk of blood-borne disease. From the current finding, 95(66.3%)of respondent recap needles after use. Recapping of needles onlyallowed if immediate disposable not possible to avoid carryingunprotected sharps. This finding indicates that nearly two-thirdsofthe respondent highly infectious diseases for needle stickinjuries. This finding was

higher compared to the study done inthe University of Gondor, 40.8% recap needles always [6] andWolaittaSodo 44.6% [24] and Dubti Referral Hospital, 60.44%[19]. The possible reason might be due to the current study wasdone at the primary health care level and one General Hospitalwhereas the previous study was done at a referral teaching hospital.In the previous studies also a smaller sample size in Dubti Referralhospital.

‘‘All health care workers are responsible for managing wastes in amanner that poses a minimal hazard to clients/patients, visitors,staff, individuals, and family’’ [25].

6.2. Limitation of the study

due to the cross-sectional nature of this study design temporal relationship cannot be established between the explanatory and outcome variables of infection prevention knowledge and practice.

Healthcare workers might not give true and genuine responses on the self-administered questionnaire, preferring to provide more socially acceptable responses than their actual day to day practice

One additional limitation of this study is that the generalization of findings limited to public healthcare facilities.

6.3. CONCLUSSION

In general we can conclude that health professionals participated in training program about infection prevention and there is policy and guidelines about infection prevention in the hospital. However, their participation in training program is not enough toward infection prevention.

The study had shown that nearly 120(84.2%) of health care workers were knowledgeable about infection prevention and 23(33%)of health care workers are not knowleageable.58(83%) of the health care workers had a positive attitude towards infection prevention and 85(59.2%) of the health care workers had a negative attitude towards infection prevention and Nearly89(60%) of

the health care workers had safe practices for infection prevention and 54(40%)of the health care workers had un safe practices for infection prevention .The respondents had needle stick injuries during sudden movement of patient, recapping of needle and during disposing sharp wastes. Majority's of them were recapping the needle by using one hand scope technique and they also had contact to blood or body fluid and they took measures like washing with soap and water, washing with alcohol and iodine.

Majority of respondents were using PPE especially gloves and gown before contact with blood and body fluids. And majority of respondents were disposing needle syringe and other sharps to safety box but some of them didn't practice in disposing waste that goes in to safety box.

Majority of respondents were washing their hand after touching patients or his/her surrounding but significant number of respondents do not practice hand washing properly. This indicate the respondents do not have enough knowledge and practice toward infection prevention and the infra structures to prevent infections like supply of water and PPE were not fulfilled in the hospital.

CHAPTER SEVEN

7.1Recommendation

To health care institutions

- Introduce and provide appropriate teaching and learning materials on infection prevention to all health institution acquired infection prevention and dissemination of information on risk of health institution acquired to all health professionals is essential.
- Improve sustainable supplies which include all types of personal protective devices, water supply, washing utensils and other related materials are mandatory to correct unsafe practice in the hospital.
- Training programs on HCAI should given for all health professionals and having strict rule of adherence to the guideline

To health care workers.

- Put in system that encourages health care workers to wear PPE through accessing and supplying standard materials to the services delivered in the hospital.

To research institutions:

- Further comprehensive research should be done on Infection prevention among health professionals.
- A broader Institutional-based survey is needed to adequately assess the national prevalence and burden of Health care associated infection.

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Annex-1

Consent form for participation.

This Questioner is prepared for the purpose of collecting information for academic study. We finally year public health officer, kindly asked your response to our Question concerning assessment of knowledge and practice among health professional. We assuring you that all information we got from you will be keep confidential. We would like to appreciate in advance for the assistance rendered in this regard.

Name----------

Signature----------

Are you willing to participate in this study?

A. Yes Name of the interviewer----------Signature----------Date----------

Annex-2 Questionnaire

Socio demographic data.

1 .Sex A, Male B, Female

2. Marital status A. Single B. Married C. Divorced

3. Religion A. Orthodox B. Muslim **C.**catholic D. protestant

4. What is your professionA. Nurse B. Midwifery C. Medical doctor

D, Public health officer E. Lab technical F. dentist G.emergency surgeon

Practice of infection prevention

1. Explain procedure A. YES B. NO
2. Use fresh cotton swab A. YES B. NO
3. Technique of injection
   A. Use one needle and syringe for one patient
   B. Use single syringe for several patient

4. Ever injured with sharp A. YES B. NO

5. If yes the answer. How many times?

A. 1 times B. 2times C. More than 3times

6, Sharp /needle injury in the last year A. YES B. NO

7. IF yes how? A. Sudden movement of patient B. During recapping

C. Handling and collection of wastes D. Others

8. Recapping of needle for the purpose A. YESB,NO

9. Technique of recapping A. Single hand sloop B. Two hand recapping

10. Ever blood or body fluid contact A.YES B,NO

11. Measure taken after contact

A. Washing with soap and water B. Clean with alcohol and iodine

C. Seek post exposure prophylaxis D. Get tested for HIV

Use of personal protective equipment by respondents

1. Wear PPE A.YES B. NO

2. Types of PPE A .Glove B. Gown C, Glove and Gown

D. Glove, gown, Head cover, Boots/shoes and others

3. Wear glove A. YES B. NO

4. Time when they use glove A. For all patients as needed

B. For only HIV positive cases C. For procedures which need gloved

5. Change glove between patient contact A. YES B. NO

6, Change glove on the same patient A. YES B. NO

Awareness on management medical waste.

1. Discharge sharps in to sharp container A. YES B. NO

2. Dispose tissue A. Open dumping B. Burial in the pit C. Burning

3. Responsible for disposal of sharps and medical waste

A. Health care worker B. Non health professional

4. Presence of safety box A. YES B. NO

5. Wastes that goes into safety box A. Syringe and needle

B. Syringe and needle, needle for IV bag's, lancet's, C. other contaminated sharps

Practice of hand hygiene

1. Clean hand before touching patient A. YES B. NO

2. Clean/wash hand after touching patient A. YES B. NO

3. Wash hand after removal of glove A. YES B. NO

4. Method to clean hand using A. plain soap and water B. Antimicrobial

5. Frequency of hand washing A. Always B. Sometimes C, Never

6. Reason for washing hand A. Was necessary B. Affect clinical outcome

7. Time to wash hands A.On procedure B. Before patient contact

C. After patient contact D.After using the toilet E. All

8. Reason for not washing hand A. Does not affect clinical outcome

B, Unnecessary when gloves are wore C. Facilities not conveniently placed

D. Between each patient encounter is unnecessary E. Others

Knowledge of respondents towards infection prevention.

1. Training participate **A. YES** **B. NO**

2. Awareness on HCAIs **A. YES** **B. NO**

3. Transmission of HCAI? A.Blood and body fluid B.contaminated needle

C.through air droplet

4. Prevention method of HCAI? A.safe injection B.hand hygiene C.use of PPE

5. Risk of unsafe injection A.HBV B.HCV C.HIV D.all