COLLEGE OF MEDICINE AND HEALTH SCIENCE

DEPARTEMENT OF PUBLIC HEALTH

ASSESMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS POST EXPOSURE PROPHYLAXIS OF HIV AMONG HEALTH PROFESSIONALS AT WOLKITE UNIVERSITY SPECIALIZED TEACHING HOSPITAL

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Abstract

Background: infection with human immune deficiency virus is a serious public health problem costing the lives of many people including health workers. Hence, Ethiopia has developed guideline on the prevention of infection in the health institutions in July 2004 and also employed the use of post exposure prophylaxis since the implementation of free antiretroviral in January 2005. However in the country different studies shows that health professionals are limited knowledge and practice of PEP, and as there is no study conducted about PEP in our study area this study was conducted to assess knowledge, attitude and practice towards PEP use among health professionals working in WUSTH.

Objective: To assess the knowledge, attitude and practice towards post exposure prophylaxis of HIV/AIDS among health professionals at WUSTH,Wolkite Town,Gurage zone,SNNP regional state, Ethiopia 2022

Method: A cross sectional study was carried out from May 10 to May 20 2022 on total of 247 health professionals working in WUSTH. Data was collected using pre tested self-administered questionnaire and entered into EPI-data Version 6.4 and analyzed in SPSS version 21. software. Data was summarized using frequency, percentage, summary measures, graphs and tables and presented in descriptive way.

Result: *The studies revealed that from the total of 247 respondents, 106 (42.9%), of the respondents were found to have inadequate knowledge about post exposure prophylaxis for HIV. However the majority of respondent 182 (73.7%) had good attitude toward the PEP and, 145 (58.7%), had been exposed to HIV risk condition among those exposed, respondents only 12 (8.3%) took PEP but the rest 133 (91.7%) didn't take PEP. From these exposed respondents that took PEP, 6 (50%) correctly started taking of PEP at exact initiation time, but the rest started after the recommended initiation time. Among those who took PEP, 11 (91.7%) completed taking the drug, however 1 (8.3%) didn't complete the PEP regimen.*

Conclusion and recommendation:- the majority of respondents had knowledge about PEP and have favorable attitude towards PEP, but The practice of PEP after exposure is very low. Therefore, health care personnel need to improve their practice on PEP of HIV through different training program related to PEP.

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List of abbreviations and acronyms

AIDS	Acquired Immune Deficiency Disease Syndrome
ART	Antiretroviral Treatment
WUSTH	Wolkite university specialized teaching hospital
CDC	Communicable Disease Control
UP	Universal precaution
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HCW	Health Care Worker
KAP	Knowledge, Attitude And Practice
NSI	Needle Sticks Injury
OE	Occupational Exposure
PEP	Post-exposure Prophylaxis
PPE	Personal Protective Equipment
WHO	World Health Organization

1 Introduction

1.1 Background

In order to prevent transmission of pathogens after potential exposure and also to refer for comprehensive management to minimize the risk of infection after potential exposure to HIV, post exposure prophylaxis (PEP) is needed[1]. PEP includes first aid, counseling, risk assessment, relevant laboratory investigations based on the informed consent of the exposed person and source and following the risk assessment, provision of short term of antiretroviral drugs for 28 days, along with follow up evaluation[2].

Health care workers (HCWs) are persons working in health care setting and they are potentially exposed to infectious materials such as blood, tissue, specific body fluids, medical supplies, equipment or environmental surfaces contaminated with these substances[2]. They are frequently exposed to occupational hazards through per-cutaneous injury such as needle stick or cut with sharps, contact with the mucus membrane of eyes or mouth of an infected person, contact with non-intact skin exposed with blood or other potentially infectious body fluids[3].

HIV transmission following skin puncture from a needle or a sharp object that was contaminated with blood from a person with documented HIV infection is ~ 0.3%, and after a mucous membrane exposure is 0.09% which makes Occupational exposure to HIV is probably the most serious causes of highest level anxiety amongst health professionals in many countries including in Ethiopia[4, 5].

After exposure to HIV the virus replicates within dendritic cells of the skin and mucous before spreading to the lymphatic vessels and develop systemic infections so this delayed in systemic infections to spread gives an opportunity for PEP to work effectively and block replication the virus.[6] Due to this reasons communicable disease control (CDC) recommended the use of prophylaxis up to 24 to 36 Hrs after exposure with no consideration of PEP beyond 72hr.[6, 7] And the drug used can be 2 for low risk exposure or 3 for high risk exposure anti-retroviral for 28 days long duration. [6, 8].

Low risk exposure are small blood, bloody contamination from asymptomatic HIV positive patient, injury with solid needle, superficial injury, glove use during exposure and mucocutaneous exposure.[6, 7] High risk of exposures include blood contact with cuts on the

skin, large volume of blood exposure, injury with a hollow needle and deep and extensive injury. [8, 9]

When administered shortly following exposure, PEP treatment has been shown to reduce the risk of HIV infection by 81%[10]. Therefor in Prevention of the occurrence of HIV infection resulting from such accidental injuries at work place and the use of HIV PEP with association of effective implementation which requires the assessment of the exposed individual and source where possible and the transmission risk of exposure, clinical and laboratory follow-up and the provision of information, education and support is recommended by WHO/ILO and other global institutions[11].

In line with this the Federal Ministry of Health of Ethiopia developed guidelines for infection prevention and PEP use (in the ART guideline) in 2004 and 2005, respectively and goes to in implementation.[12, 13]

1.2 Statement of the problems

The human immunodeficiency virus and/or acquire immunodeficiency syndrome (HIV/AIDS) epidemic continues to be a problem several decades after it was first discovered[14].According to the World Health Organization (WHO) update on the global AIDS epidemic, '37.9 million people were living with HIV at the end of 2018'. HIV infection is spreading at a fast pace, with over 2.7 million infections each year, and sub-Saharan Africa bearing most of these: 'In 2018, about 70% of people living with HIV in the world were residing in sub-Saharan Africa[15].

The world health organization estimated that at least 50% of the 12 billion injections administered each year in the developing world are unsafe posing serious health risks to recipients, health workers and to the public[16, 17]. Those are mainly responsible ways to cause chronic infections that leads to a high burden of morbidity and mortality among world's populations so in around the world, health care workers are at greatest risk for these chronic infections as a result of their work. And it is estimated that 4.4% (range 0.8% to 18.5%) of all HIV infections amongst HCWs are due to occupational injuries. It is further estimated that at least half of these cases occur in sub-Saharan Africa.[9, 16]

The risk for occupational exposure to HIV and use of PEP has been well characterized in developed countries. But limited information is available and resource constrained setting are there in developing countries even if the burden of HIV/AIDS is increasing all around the globe[18].

A survey conducted among Serbian healthcare workers depicted that 90% of them carried out some form of intervention with risk of human immunodeficiency virus infection and 70% of them perceived there to be high professional risk of acquiring human immunodeficiency virus infection. Finding from that study showed that, within one year, 59% of healthcare workers had skin contact with patient blood followed by Needle Stick Injuries in 51%, cut from sharp instrument in 38% and contact of eye and other mucosa with patients' blood in 34%. Seventeen percent of Healthcare Workers protected from injury by using appropriate barriers such as glove, glasses, gown, and mask. Nearly 80%of respondents had not been informed about guidelines for protection against human immunodeficiency virus. It was found that perception of professional's risk of acquiring human immunodeficiency virus infection was associated with every day

practice, and has higher among healthcare workers who were exposed to patients' blood and other body fluids.[19]

According to WHO study discussion paper on PEP for occupational HIV exposure, in its study WHO classified 14 countries Africa, in to two sub groups, Ethiopia is one of those countries included under sub groups of E, according to this discussion paper, in this sub region, out of total population the proportion of health care workers was 0.30% and 19400 HCWs are exposed to at least one percutaneous injury with sharp object contaminated with HIV, 620 infections of HIV among HCWs attributed to sharp injuries[9].

In Ethiopia prevalence of occupational exposure is 61.6%. among 61.6% who had occupational exposure to HIV, 24.3% used HIV-PEP. Of this, 91.9% heard about PEP but more than half (62.2%) have not taken training on PEP[20].

Therefore the present study will enable to know the existing knowledge, attitude and practice regarding PEP use among health care workers who work at WUSTH, Wolkite, Gurage zone, in SNNP, Ethiopia.

1.3 Significance of the study

Continually assessing, clearly and deeper understanding of the knowledge, attitude and practice of health care workers about PEP, is one of the key prerequisite information required in designing, relevant, affective and comprehensive programs, on towards prevention of occupational exposure and reduction of risk of infection.

This research will Ensure that health care workers are equipped with the necessary information on what actually mean PEP is and how to access it in cases of exposure to sustain healthy human resources in the health sector.

The finding from this study may help policy makers and health care planners by providing useful information, towards designing new program or improving the quality and effectiveness of the current intervention programs.

In addition to these the study could provide information for those who are working on prevention and controlling of HIV/AIDS to focus on occupational risk of infection and also will help them by providing use full information for development of effective prevention education program and awareness creation forums and trainings for health care workers thereby contributing towards controlling spread of HIV in the study area.

The study may provide pathways and information for other researchers who wants to conduct for their study on the issue and findings also will help as a secondary data, as base line for future study conducted regarding the KAP of HCWs about PEP in this local area, other parts or even outside the country and the recommendation drown from this study will also help the hospital and the HCWs by guiding the hospital to provide a formal training for all HCWs regarding PEP for HIV.

2 Literature review

2.1 Knowledge

Study done in 2001 in Guy's and St Thomas's Hospitals, London indicated that only 8% of the doctors could name the drugs recommended in recent national guidelines and a significant proportion (43%) could not name any [21]. Other literatures also supported that the knowledge about post-exposure prophylaxis among healthcare workers is poor [22, 23].

According to a cross-sectional study done in South Indian 2012, on KAP towards PEP and universal precautions among 100 medical interns, 84% of them were aware of the fact that any incidence of occupational exposure must be reported to the superior officer on duty, and only 30% expressed the correct knowledge of basic PEP regimen. It also revealed 56% of the respondents knew exactly where PEP drugs were and with whom they can obtained, 83% were also expressed awareness of the best time of initiation of PEP drugs while only 70% conveyed the correct knowledge about the duration of the regimens[24].

Similarly in our continent a cross-sectional study conducted in Nigeria on Awareness and knowledge of human immunodeficiency virus post exposure prophylaxis among Nigerian Family Physicians, from 175 participants Majority (97.7%) of the respondents was aware of the concept of HIV PEP and 99.4% believed it was effective in preventing HIV transmission. Over two third of the respondents had been exposed to NSI; however, less than 25% of those exposed received PEP. There was high level of knowledge of the various high-risk body fluids as well as types of high-risk exposures. 93.9% of the respondents knew that HIV PEP should commence within 1 h of exposure, 83.3% knew the correct duration of HIV PEP, but only 57.0% knew the ideal PEP regimen for high-risk exposures[25].

Another cross-sectional study conducted in Cameroon between April and July 2013, which involve 80 nurses on Occupational Post-Exposure Prophylaxis (PEP) against Human Immunodeficiency Virus (HIV) Infection in a Health District in Cameroon: Assessment of the Knowledge and Practices of Nurses revealed 73.7% of the participants had poor knowledge about PEP for HIV. Though many (83.8%) had heard about PEP, just 10 (12.5%) had received formal training on PEP for HIV. Only 24 (30%) and 20 (25%) knew the correct drug regimen and duration of treatment respectively [26].

Also study on prevalence of occupational injuries and knowledge of availability and utilization of post exposure prophylaxis among health care workers in Singida District Council, Singida Region, Tanzania conducted in Tanzania stated that out of 239 participants slightly more than half, 124 (52%) had inadequate overall knowledge of HIV PEP. Of the 239, 121(50.6%) participants experienced occupational exposure. Two leading types of exposure were blood splash 57(47.1%) and needle stick injuries 45 (37.2%), respectively[27].

Similar study in Uganda revealed a high level of awareness among the respondents at 83.3% were aware of PEP, despite the high level of awareness respondents still have an inadequate knowledge about PEP only 32% of the respondents could name at least two of the recommended drugs for PEP only 54% of respondents knew when to commence PEP following occupational exposure to HIV [28].

In our country there is a gap and resource and information constrained on assessment of knowledge, attitude and practice towards post exposure prophylaxis of HIV among health professionals of governmental health institutions, a study conducted in Jimma on assessment of HIV post-exposure prophylaxis use among health workers of governmental health institutions in Jimma zone, Oromia region, southwest Ethiopia, stated Among the total 254 participants, 213 (83.9%) had inadequate knowledge about post exposure prophylaxis of HIV and 174 (68.5%) had ever been exposed to HIV risk conditions. Out of 174 health workers exposed to HIV risk, 105 (60.3%) sustained needle prick/cut by sharps, 77 (44.3%) to blood and 68 (39.1%) exposed to patients' body fluid. Perceived causes of exposure were; high workload 77 (44.3%), lack of protective barriers 58 (33.3%) and lack of knowledge on standard precautions 31 (17.8%)[29].

another study conducted in Debre Markos on the assessment Knowledge, attitude, practice and associated factors towards post exposure prophylaxis to HIV infection among health care professionals in Debre Markos town public health institutions, Majority of 129 (63.9%) the participants had adequate knowledge about PEP for HIV.Regarding to the source of information about PEP out of 202 respondents, 105 (52.0%) heard about PEP from formal training. Majority,156 (77.2%) of the participants of the study answered that PEP is indicated for person who is exposed to HIV risk if the patient is known to be HIV positive and moucocutaneous exposure, followed by person who is exposed to HIV if the source patient is at high risk for HIV 105(52.0%). From the study participants 152 (75.2%) answered that PEP

for HIV is efficient and 158 (78.2%) knew when to initiate PEP. One hundred sixty seven (82.7%) of the respondents knew the maximum acceptable delay to take PEP and 190 (94.0%) knew for how long exposed individuals should be on PEP to prevent infection[30].

2.2 Attitude

With limited information a study conducted in India on 2014 among medical students revealed that 86% of participants strongly agreed on NSI are dangerous and 88% again agreed on the use of gloves and follow standard precautions is necessary and if an occupational exposure occur at any time which makes them vulnerable to post exposure HIV infection, 86% of them felt proper information and knowledge about PEP can help them at the time [31].

Also another study conducted in our country in Gonder on the assessment of participants belief on PEP for HIV to reduce the likelihood of being infected by HIV after being exposed, 78.5% of them had strong believe that it can reduce the probability to be infected and also 26.7% of the respondent agreed that PEP prevent further infections. And also on the idea of any type of sharp material injuries need PEP indicated 29.2% of respondents had that believe, majority 45.6% didn't agreed and the rest of participants 25.1% were not sure about it [32].

2.3 Practice

On study mentioned above conducted in Nigeria among Nigerian family physicians on Awareness and knowledge of human immunodeficiency virus post exposure prophylaxis stated from all participants Over two third of their respondents had been exposed to NSI; however, less than 25% of those exposed received PEP[25].

Similarly studies mentioned above conducted in Cameron and Tanzania also revealed that, The majority (85%) considered themselves to be at risk of acquiring HIV at work, with 54 (67.5%) having experienced an exposure in the past, mainly while setting up intravenous lines (57.4%), recapping needles (37.0%) and during delivery (24.1%). Of those exposed, ten (18.9%) received PEP, which was started after 24 hours in 50% (Cameron), Among the 121 exposed participants from 239 total participants, 83(68.6%) reported the exposure incident, 91(75.2%) had an HIV test, 32 (26.4%) started HIV PEP after testing, 28 (23.1%) completed HIV PEP, and 65 (53.7%) had a follow-up HIV test (Tanzania) respectively[26, 27].

When we come to our country, as we stated earlier there is a limited resource on this topic particularly which conducted in our study area, even-though according to a study conducted in Amhara region, Debre Markos mentioned earlier stated that Among all of the respondents, 67 (33.2%) of them were exposed for HIV/AIDS risky conditions and 38/ (56.7%) didn't took PEP. Immediate measures taken after exposure, Washed with soap and water was the most common 46(68.6%) followed by squeezing for more bleeding and washed with alcohol or disinfectant 10(14.9%). In this result major reason for individuals who didn't receive PEP following their exposure were whose HIV test result was negative 20 (52.6%) and negligence 12(31.5%). Among those respondents who took PEP, 19/29 (65.5%) had complete the prescribed PEP. The major reason for discontinue was fear of its adverse effects7/10 (50%) and negligence 3/10 (30%)[30].

Similarly study mentioned above which is conducted in Jimma revealed that One hundred forty two (81.6%) of those ex-posed from total 254 participants did not use post-exposure prophylaxis. Lack of information about the existence of post-exposure prophylaxis service 48 (33.8%), fear of stigma and discrimination 46 (32.4%), lack of understanding the value of reporting 33 (23.2%) and lack of support and encouragement to report 29 (20.4%) were the reasons for not using[29].

A study conducted about PEP among health care workers in gonder shows from195 respondents 66/195 (33.8%) were exposed for HIV risky conditions and of these exposed re-spondents, 49/66 (74.2%) took PEP. However, 17/66(25.7%) of the exposed respondent did not take PEP.Among the respondents who took PEP, 28/49 (57.1%) reasoned out that they took PEP for their exposure to known HIV positive blood whereas, the remaining 12/49 (24.5%),reasoned out that they became exposed to blood of HIV unknown status. among those respondents that took PEP, 39/49 (79.5%) had completed taking PEP correctly, but the rest 10/49 (20.4%) had failed to complete. The reasons for the discontinuity of taking the PEP was found to be fear of its efficacy and the adverse effects 5/10(50%), 3/10 (30%) respectively[32].

3 Objective of the study

3.1 General objective

To assess the knowledge, attitude and practice towards post exposure prophylaxis of HIV/AIDS among health care workers at WUSTH wolkite, gurage zone, SNNP, Ethiopia 2022

3.2 Specific objectives

To determine level of knowledge of health care workers on post exposure prophylaxis at WUSTH

To determine level of attitude of health care workers towards post exposure prophylaxis at WUSTH

To determine practice level of health care workers towards post exposure prophylaxis at WUSTH

4 Methods and Materials

4.1 Study area and Period

4.1.1 Study area

The study was conducted on HCWs in WUSTH which is found in Wolkite town. wolkite town is found in gurage zone SNNP regional state, is a capital of gurage zone and located at about 150 Km in south west of capital city, Addis Ababa. According to the 2007 census it has a population of 28,866. It has 3 sub cities, and The climate of Wolkite town is weynadega, and altitude of 1910-1935 above sea level.

the town has 1 Specialized teaching hospital and 3 health centers, Our study was conducted in WUSTH

4.1.2 Study period

The study was conduct from May 10 to 20- 2022

4.2 Study design

Institutional based cross-sectional study design was conducted

4.3 Population

4.3.1 Source of population

Health care workers who were working in WUSTH

4.3.2 Study population

Health care workers who were working in WUSTH who fulfill the eligibility criteria

4.4 Inclusion and Exclusion criteria

4.4.1 Inclusion criteria

All health care workers who were working in WUSTH

4.4.2 Exclusion criteria

Those health professionals who were on their yearly break rest at the time of data collection are excluded from the study sample.

4.5 Sample size and Sampling technique

4.5.1 Sample size determination

Single population proportion formula was used to determine the sample size, with P-value for the three variables: - knowledge, attitude and practice, taken from previous study in jimma, oromia region which was 16.1% for knowledge, 93% for attitude and 18.4% for practice.[29] So by using the following formula we calculated our sample size for all the three variables and take the one with a large sample size

$n= (Z\ a/2)^2 *P\ (1-P)/\ d^2$

Where;

n the minimum sample size required

Z a/2 the critical value for a given confidence interval

P prevalence of PEP use among exposed ones in the study

d margin of error

By taking Z a/2 value of 1.96 at 95% confidence level, P of 16.1% knowledge, 93% attitude and 18.4% practice from previous study,[29] d (margin of error) of 5%

	$n= (Z\ a/2)^2 *P\ (1-P)/d^2$		
	Knowledge	Attitude	Practice
Sample size (n)	$=(1.96)^2$ x 0.161(1-0.161)/ $(0.05)^2$ = 208	$=(1.96)^2$ x 0.93(1-0.93)/ $(0.05)^2$ = 100	$=(1.96)^2$ x 0.184(1-0.184)/ $(0.05)^2$ = 230

So we proceeded by taking our sample size 230 from the practice variable as it is the large sample size

By considering 10% non-respondents rate the final sample size was 253

4.5.2 Sampling technique

Sampling frame took from the human resource of the hospital, then the study subjects was selected using simple random sampling technique

4.6. Study variables

Knowledge,

Attitudes

Practice towards HIV Post Exposure Prophylaxis.

Sex,

Age,

Religion,

Ethnicity,

Marital status

Year of experience

Profession

Professional qualification level

4.7 Operational definition.

Adequate knowledge- when respondents correctly answers >= 75% of the 10 knowledge questions.

Inadequate knowledge- when respondents correctly answers < 75% of the 10 knowledge questions.

Attitude – it is once internal predisposition or value toward something or is the predisposing of the respondent to favorable or unfavorable manner towards HIV/AIDS.

Good- when the respondents correctly answer all the 3 attitude questions.

Poor – when the respondents answer to or less among three attitude questions.

PEP use /practice- among the exposed individuals reporting as they have practiced using Post-exposure prophylaxis of HIV.

Post-exposure prophylaxis- is an emergency medical response that can be used to protect individuals exposed to the human immune-deficiency virus (HIV). PEP consists of counseling, laboratory tests and or medication.

Occupational exposure- is defined as a percutaneous, mucous or non-intact skin exposure to blood or body fluids that occurs during the course of an individual's employment.

4.8 Data collection method and tools

A self-administered questionnaire was used to collect information on the KAP of healthcare professionals towards PEP. The data collection tool was developed after reviewing different literature, guidelines, and previous studies, which were organized according to the objectives of the study. The data collection tools contain four different parts which include socio-demographic characteristics; existing knowledge about PEP, attitude, and practice towards PEP.

4.9 Data quality assurance

To ensure the reliability and validity of the study the prepared questionnaire was pre tested on 5% of the total study subjects at WUSTH. Some or total modification was done on questions that

have found with any ambiguity and affect the consistency of data. In addition prior to starting data collection, brief explanation was given for HCWs on how to fill the questionnaire and the principal investigator given onsite technical support and close supervision, to avoid any ambiguity and to clarify any misconception.

And further, the data collecting format was checked whether all the necessary information is properly fulfilled or not.

4.10 Data processing and analysis

After collection of the data, it was entered into Epi-data version 4.6 and exported into SPSS version 21 for analysis. Descriptive data was analyzed and presented using frequency, percentage, summary measures, graphs and tables.

4.11 Ethical consideration

Before any attempt to collect data, the proposal was approved by, Department of Public health, college of medicine and health science, Wolkite University administrators and official letter of cooperation was obtained from the Wolkite university ethical committee and submitted to hospital administrates and all responsible bodies.

Appropriate measures were taken to protect confidentiality of personal information. The nature of the study was fully explained to the study participants and the right of any individual not to participate was fully respected. Data collection from each study subjects started after they gave informed consent. For this purpose one page of short explanation and consent format was attached to the first page of each questionnaire. Confidentiality was insured and maintained by the principal investigator and data collectors.

4.12 Dissemination of the result

Results of the study will be presented to wolkite University College of medicine and health science, department of public health, to the Hospital head department, and to any other concerned body

5 Result

5.1 Socio demographic characteristics

A total of 253 questionnaires were distributed for available respondents during data collection period and 247 health workers participated by filling and returning questionnaires, making a response rate of 97.6%. Majority 124 (50.2%) of the HCWs were found between the age of 20-30 years, 154(62.3%) of the respondents were males and 93 (37.7%) were females. According to the findings most of the HCWs were Amhara 89(36%), followed by Gurage 86(34.8%). Regarding to religion of respondents, 138(55.9%) of them were Orthodox followed by muslim 65(26.3 %). More than half 145(58.7%) were single.

The professional categories of HCWs showed that, most of our respondents were nurses 103 (41.7%), followed by physician 87(35.2%), 119 (48.2%) of respondents have year service of between 3-5 years followed by 100(40.5%) year of service between 2-8 years, As our study shows the current level qualification of majority 180 (72.9%) HCWs were qualified by degree followed by diploma 34(13.8%).

Table 1- socio demographic characteristics of HCWs for the study of KAP towards PEP of HIV among health professionals, working in WUSTH, June, 2022

Characteristics	responses	Frequency	Percentage (%)
Age	20-30	124	50.2
	31-40	109	44.1
	41-50	13	5.3
	>50	1	0.4
Sex	Male	174	41.8
	Female		
Marital status	Single	145	58.7
	Married	100	40.5
	Divorced	2	0.8
Religion	Orthodox	138	55.9
	Muslim	65	26.3
	Protestant	37	15
	Catholic	7	2.8
Level of qualification	First Degree	180	72.9
	Master's degree	10	4
	Specialty	23	9.3
	Diploma	34	13.8
Profession	Physician	87	35.2
	Nurse	103	41.7
	Midwife	23	9.3
	Public health	9	3.6
	Laboratory	21	8.7
	Anesthesia	4	1.6
Year of experience	6 month-2 year	100	40.5
	3-5 year	119	48.2
	6-8 year	26	10.5
	>8 year	2	0.8

5.2 Knowledge of health care workers towards PEP of HIV

Majority of respondents 224 (90.7%) have heard about PEP, and the proportion of respondent who heard about PEP of HIV from formal training was 86 (38.4%). 77 (34.4%) knew the preferable time to initiate PEP for HIV. 165 (73.7%) of the respondents knew the maximum acceptable delay to take PEP for HIV and 157 (72.8%) knew for how long exposed individuals should be on PEP to prevent infection

one hundred nighty seven of the respondents (79.8%) do know the drug recommended for PEP.

Table 2- Knowledge of Health Care workers working in WUSTH for the study of KAP towards PEP of HIV among health professionals, working in WUSTH, June, 2022.

Knowledge questions	Responses	Frequency	Percentage
Have you Heard about PEP?	Yes	224	90.7
	No	23	9.3
From what source you got the information?	Training	86	38.4
	Mass media	25	11.2
	Friends	79	35.3
	Journals	4	1.8
	Others	11	4.9
	Multiple sources	19	8.5
How soon should it be initiated?	Within 1 hour	77	34.4
	Within 12 hour	7	3.1
	Within 24-72 hour	134	59.8
	Don't know	6	2.7
What is the maximum delay to take PEP?	12 hour	13	5.8
	24 hour	17	7.6
	48 hour	29	12.9
	72 hour	165	73.7
For how long does it recommended?	Single dose	12	5.4
	For 2 weeks	7	3.1
	For 4 weeks	157	70.1
	Don't know	48	21.4

Do you know the drugs recommended for PEP?	Yes	197	79.8
	No	50	20.2
How many drugs are recommended?	Single drug	12	6.1
	2	60	30.4
	>/=3	121	61.4
	Don't know	4	2
Do you know that HIV PEP is available in your institution	Yes	216	87.4
	No	31	12.6
Do you know when and where available in the institution?	Yes	173	80.1
	No	43	19.9
Do you know occupational exposures which makes you at risk to acquire HIV/AIDS	Yes	244	98.8
	No	3	1.2
Do you know which type of occupational exposures are reported	Yes	231	93.5
	No	16	6.5
Do you think that any type of occupational exposures need a PEP regimen	Yes	174	70.4
	No	73	29.6
Have you attend any training about PEP	Yes	95	38.5
	No	152	61.5

In general 141(57.1%) of the respondents had good knowledge whereas 106(42.9%) had inadequate knowledge about HIV PEP.

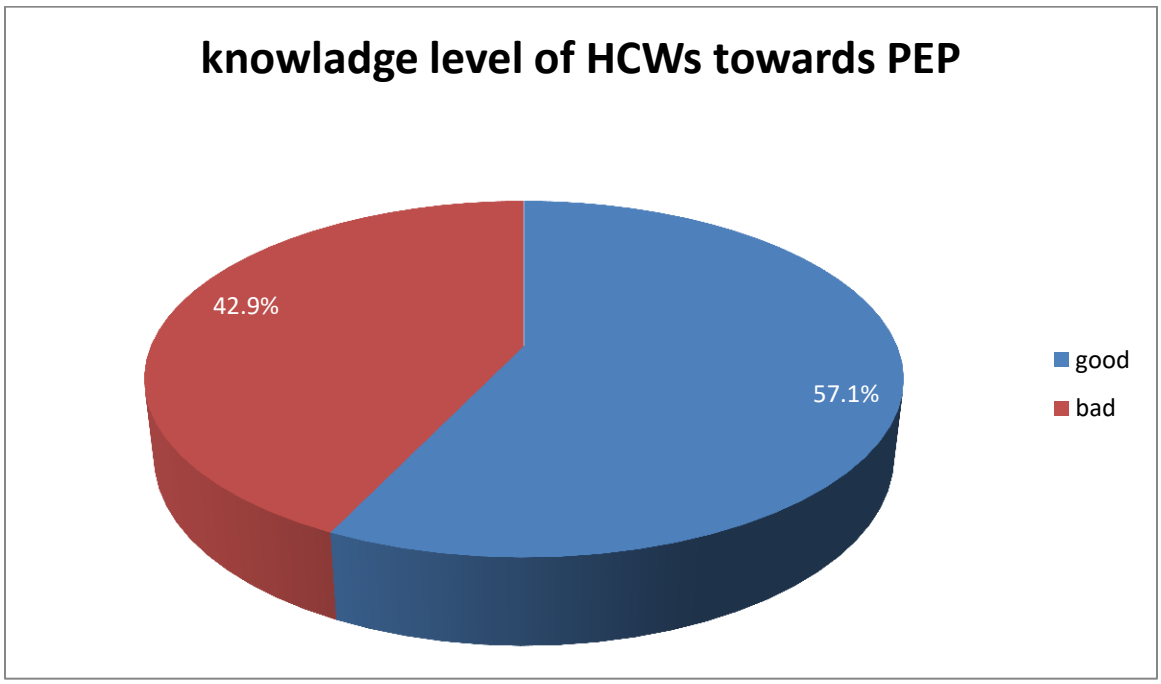

Figure 1, Level of knowledge of Health Care workers working in WUSTH for the study of KAP towards PEP of HIV among health professionals, working in WUSTH, June, 2022.

5.3 Attitude of health care workers towards PEP of HIV

When we assessed the respondents about their belief on PEP for HIV, 242 (98%) of them agree that HIV PEP prevent the risk of acquiring HIV infection after exposure, The majority respondents 130(52.6%) strongly agree that training of health care workers about HIV PEP can improve risk of exposure and HIV infection. Among the respondents 208(84.2%), believed that the right way to know HIV status of the source patient is, only if the source patient agree.

Table 3- Attitude of Health Care workers working in WUSTH for the study of KAP towards PEP of HIV among health professionals, working in WUSTH, June, 2022.

Attitude questions	Response	Frequency	Percentage
Do you believe that HIV PEP can prevent risk of acquiring active HIV infection	Yes	242	98
	No	5	2
Do you agree that training of health care workers can improve risk of exposure and HIV infection	Strongly agree	130	52.6
	Agree	92	37.2
	Fairly agree	10	4
	Disagree	15	6.1
Which way do you think is right to known HIV status of the source patient	Only if the source patient agree	208	84.2
	Without the consent of the source person	26	10.5
	Forcefully	13	5.3

In general Majority of the respondents, 182 (73.7%) were favorable attitude towards PEP for HIV.

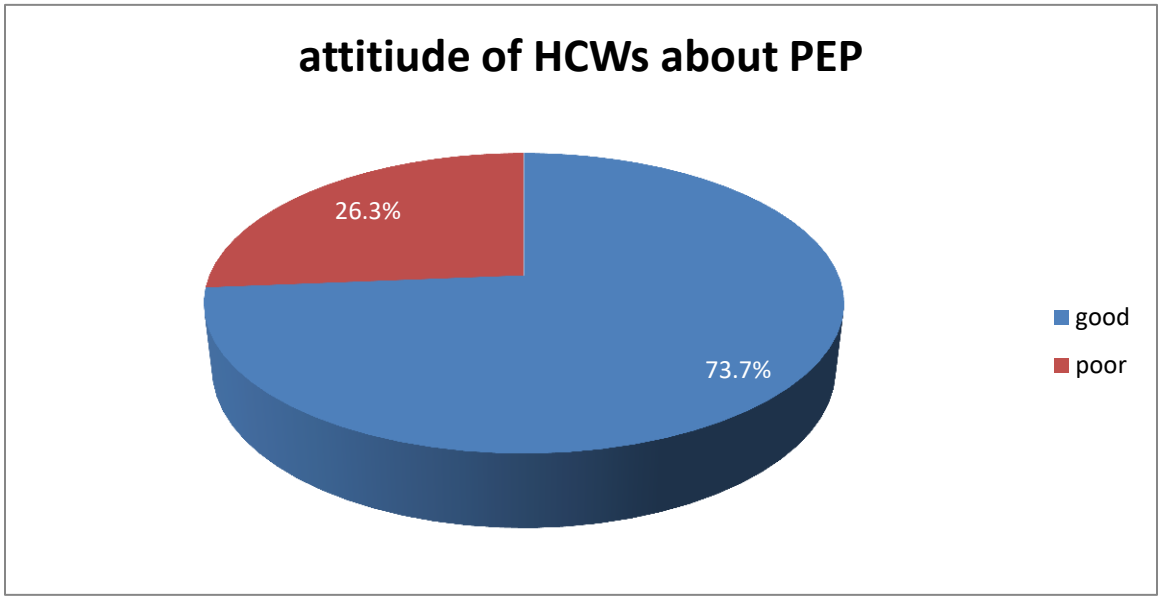

Figure 2, Level of knowledge of Health Care workers working in WUSTH for the study of KAP towards PEP of HIV among health professionals, working in WUSTH, June, 2022.

5.4 Practice of health care workers towards PEP for HIV

Regarding the exposure to the risk of acquiring HIV/AIDS 145(58.7%) of the 247 health care workers were reported to have been exposed to HIV risk condition Among the 145 health care workers exposed to the HIV risk condition, majority of the respondent 43(29.7%) exposed to blood and, 29 (11.7%) sustained needle stick injury.

from those exposed only 42(29%) of them directly communicate to the PEP center in the institution, 63(43.6%) of them kept silent the major reason for their silence after exposures were because the source patient was HIV negative 39(61.9%), unaware of HIV PEP 16(25.4%), fear of stigma and discrimination 7(11.1%), and new needle 1(1.6%%).

However 133(91.7%) of those exposed reported that they did not used PEP. and among the respondents who took PEP, 6(50%) correctly started taking of PEP at exact initiation time. among those respondents that took PEP, 11 (91.7%) had completed taking PEP correctly, and all of the respondents serostatus was seronegative after completing the treatment.

Table 4- Practice, of Health Care workers working in WUSTH for the study of KAP towards PEP of HIV among health professionals, working in WUSTH, June, 2022.

Practice questions	Response	Frequency	Percentage
Have you sustained occupational exposure	1. Yes	145	58.7
	2. No	102	41.3
can you specify the type of exposure you sustained	1. Blood	43	29.7
	2. Other body fluid	6	4.1
	3. Needle stick injury	29	20
	4. Mucocutanious	1	0.7
	5. multiple	66	45.5
How many times did you sustained this occupational exposures	1. <2	58	40
	2. 3-5	76	52.4
	3. >5	11	7.6
What did you do immediately after exposure	1. Clean the exposed part with running water or NS	99	68.3
	2. Didn't do anything	4	2.8
	3. clean with antiseptic solution	24	16.6

	4. Other	18	12.4
What action did you take for your exposure situation	1. Keep silent	63	43.4
	2. Report to superior concerned body	40	27.6
	3. Directly communicate to the PEP center in the institutions	42	29
If you don't inform to the concerning body parts in the institutions, what was your reason	1. Fear	7	11.1
	2. The patient was HIV negative	39	61.9
	3. Unaware of HIV PEP	16	25.4
	4. New needle	1	1.6
Have started HIV PEP following occupational exposure	1. Yes	12	8.3
	2. No	133	91.7
If yes, When did you start the treatment	1. Within 1 hour	6	50
	2. After 2-6 hour	6	50
	3. After 6-10 hour	-	-
	4. After 72 hour	-	-
for how long does you received the treatment	1. <1 week	1	8.3
	2. 2-3 weeks	-	
	3. 3-4 weeks	9	75
	4. >4 weeks	2	16.7
Did you finished you regimen	1. Yes	11	91.7
	2. No	1	8.3

6. Discussion

This study assessed the knowledge, attitude and practice with HIV PEP use among health care workers who are directly involved in the care of patients in the WUSTH, southwest Ethiopia.

In this study, 106(42.9%) of study participants had poor knowledge about PEP which is higher than a study conducted among HCWs in public health institutions Debre Markos town which is (36.1%),[30] a study conducted in Gondor, northwest Ethiopia (36.9%)[32]

and a study conducted in Hiwot Fana Specialized University Hospital in Harar (17%),[35]

but lower than the study conducted in Nigeria (57%).[25], a study conducted at Jigme Dorji Wang chuck National Referral Hospital, Bhutan (80.1%).[36] and a study conducted in Zimbabwe 65%[37].a study conducted in Jimma 83.9%[29] This might be due to difference in training opportunity with other available methods to get information.

This study showed that 73.7% of the respondents are good attitude towards PEP. Study conducted in Gondar showed that 75.4% had good attitude towards PEP. which is almost in line with our study and another study conducted in Debre Markos showed 69.8% of the respondents had good attitude toward the PEP respectively [30, 32] which is lower than our study results. This difference might be due to the difference in the study area.

Among 145(58.7%) respondents who exposed to HIV, only 8.3% took PEP, while 90.7% did not take PEP .this is much more lower than a study conducted in Dar es Salaam gonder and debre markos in which 60%, 74.2%,and 43.3% of those exposed took PEP for HIV[38,32,30]. This fact alerts that the practice of PEP for HIV in the study area needs improvement this deference might be due difference in the level of awareness between the different population and difference in sero status of patients that the health professionals were exposed. and due to deference in knowledge about PEP

7 CONCLUSION AND RECOMMENDATION

7.1 Conclusion

Despite half of the respondents were adequate knowledge and most of respondents were favorable attitude towards PEP for HIV, this study revealed that there is gap on practice of HCWs towards PEP for HIV as from 247 respondents 58.7% of health workers do have exposure to the risk of HIV predominantly to blood and considerable proportion of health workers needle prick and body fluid, But only 8.3% exposed of them used PEP.

7.2 Recommendation

Based on the findings of the study the following recommendations were forwarded.

Ongoing awareness creating and strengthened training are necessary to change in habit of practice in regarding to PEP of HIV; So WUSTH should have to work on, facilitating and organizing awareness creating training and symposium. as above half of the HCWs ere exposed to HIV risk condition The health facilities should work on Improvement of work environment.

Due to the fact that this study didn't determine the cause and effect relationship of the variables , doing further study, which is stronger in determining cause and effect relationship of the variables, is also advisable.

Limitation of the Study

This study had limitation on that it didn't determine the cause and effect relationship of the variables.

Recall bias: - Some of the HCWs were not clearly remember the exact frequency and type of encountered and exact measure taken after exposure and time of starting PEP.

it was conducted in the working hour of the health care workers as they didn't avail adequately and they filled the self-administered questionnaires through feeling of tiredness so some questionnaires were incomplete.

REFERENCE

1. Sharma A, M.Y., Ghiya R: ,.. , *Post-exposure prophylaxis for HIV.* Indian J Sex Trans Dis and AIDS 2007. **28:2**: p. 61–68.
2. Welfare:, M.o.H.a.F., *Management of Occupational exposure including Post exposure prophylaxis for HIV. .* Government of India National AIDS Control Organization: , 2009.
3. Ministry of Health and Family Welfare, *Antiretroviral Therapy Guidelines for HIV-infected Adults and Adolescents including.post-exposure prophylaxisnone.* Government of India National AIDS Control Organization:, 2008.
4. Elayne K, S.P., Paul G, Janine J, *Blood born pathogen, exposure risk among South African surgeons.* The South African gastroenterology review (2011)
5. Antony S, F.H., Clifford L Anthony Fauci, Eugene Braunwald, Dennis Kasper, Stephen Hauser, Dan Longo, et al, , *Human immune deficiency virus disease, AIDS and related disorders.* (2008). **Harrison's principle of internal medicine 17edition.** : p. 1137-1203.
6. Ayalew, A., *Assessment of knowledge attitude and practice and factors associated with PEP service utilization among health professionals, .* Addis Ababa, EPHA., (2010).
7. Ethiopia., f.m.o.h., *Ministry of Health Guideline for management of opportunistic infections and Anti retro viral therapy in adolescent and adults in Ethiopia,.* (2008)
8. health, M.o., *the HIV prevalence and current status of the epidemic in Ethiopia.* (2010).
9. T., J.G.M., *Occupational PEP for HIV/ AIDS Discussion paper:.* albion street center for WHO, Geneva Switzerland. WHO,, 2005; : p. 11-20.
10. Karen B, H.H., Warren P, Zinhle N. , *Post-Exposure Prophylaxis (PEP) in South Africa: .* Analysis of Calls to the National AIDS Help line,, 2004.
11. *Occupational and non occupational post exposure prophylaxis for HIV infection joint ILO/WHO.* Technical meeting for development of policy and Guidelines. Geneva, Switzerland. , 2005.
12. Prevention, D.P.D.I.-t., *Guidelines for Healthcare fa-cilities in Ethiopia.* July2004.
13. Health., M.o., *Guideline for implementa-tion of Antireroviral therapy in Ethiopia,.* Addis Ababa, Ethiopia,;, Jan 2005. **15.**
14. Roland ME, M.L., Martin LJ, Maw A, Batra P, Arend E, et al. , *Preventing human immunodeficiency virus infection among sexual assault survivors in Cape Town, South Africa:.* an observational study. AIDS and Behavior. , 2012. **16(4)**: p.:990-8.
15. Health., W.C.P.D.o., *Treatment guidelines for the use of post-exposure prophylaxis (PEP) for the prevention of the transmission of human immunodeficiency virus (HIV) in males and females who have been raped or sexually assaulted.* [homepage on the Internet], 2002.
16. CDC, u.U.S., *Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV and HIV and Recommendation for Post Exposure prophylaxis.* 2001:. **50,**.
17. 2002, T.w.h.r., *reducing risks, promoting healthy life.* Geneva: World Health Organization;, 2002.
18. A, T., *Assessment of Health Care Workers Occupational Exposure to HIV and Post-Exposure Prophylaxis in Health Centers and Hospitals of Addis Ababa, Addis Ababa –Ethiopia. .* Addis Ababa university, Ethopia., (2008)
19. A. Jovic-Vranes, S.J., D. Vukovic, B. Vranes, and D.Miljus, , *Risk perception and attitudes towards HIV in Serbianhealth care workers,"* "Occupational Medicine, , 2006. **vol. 56,**: p. pp.275–278, .
20. Degavi, G., et al. , *"Prevalence of occupational exposure to HIV and utilization of HIV post-exposure prophylaxis among health staff at Bule Hora General Hospital, Bule Hora, Ethiopia.".* The Pan African Medical Journal, (2020). **37**.

21. Chen YM, F.E., Rogers AC. , *Post-exposure pro phylaxis for human immunodeficiency virus: knowledge and experience of junior doctors.* Sex Transm Inf,, 2001;. **77:**: p. 444-45.
22. Varghese G.M, A.O.C., Mathai D.,, *Post-exposure prophylaxis for blood borne viral in-fections in healthcare workers. .* Postgrad Med J, 2003;. **79:**: p. 324–328.
23. Chacko J, I.R., *Percutaneous injuries among medical interns and their knowledge & practice of post-exposure prophylaxis for HIV.* Indian J Public Health, , 2007;. **51(2):**: p. 127-9.
24. I, D.M., *A study to assess knowledge and practice in relation to universal precautions and awareness regarding post-exposure prophylaxis for HIV among interns of a medical college in Mysore district, south India. .* nternational Journal of Recent Scientific Research. , 2013;. **4(10):**: p. 1554-7. .
25. Agaba PA, A.E., Ocheke AN, Daniyam CA, Akanbi MO, Okeke EN. , *Awareness and knowledge of human immunodeficiency virus post exposure prophylaxis among Nigerian Family Physicians. Nigerian medical journal:.* journal of the Nigeria Medical Association., 2012 **53(3):**: p. 155.
26. Aminde LN, T.N., Dzudie A, Bonko NM, Awungafac G, Teno D, Mbuagbaw L, Sliwa K., *Occupational post-exposure prophylaxis (PEP) against human immunodeficiency virus (HIV) infection in a health district in Cameroon: Assessment of the knowledge and practices of nurses. .* PLoS One., 2015 Apr 16. **10(4):e0124416.**
27. Kimaro L, A.J., Damian DJ, Njau B. , *Prevalence of occupational injuries and knowledge of availability and utilization of post exposure prophylaxis among health care workers in Singida District Council, Singida Region, Tanzania.* PloS one., 2018 Oct 25. **13(10):e0201695.**
28. Alenyo R, F.J., Jombwe JJ., *Knowledge, attitude and practices of staffs towards post-exposure prophylaxis for HIV infection at Mulago Hospital in Uganda. .* East and Central African Journal of Surgery. , 2009. **14(2):**: p. 99-102.
29. Tebeje, B., and Chernet Hailu. , *Assessment of HIV post-exposure prophylaxis use among health workers of governmental health institutions in Jimma Zone, Oromiya Region, Southwest Ethiopia.* Ethiopian journal of health sciences, (2010). **20.1 .**
30. Aschale, B., Y. Tamir, and G. Alem. , *Knowledge, attitude, practice and associated factors towards post exposure prophylaxis to HIV infection among health care professionals in Debre Markos town public health institutions, Northwest Ethiopia. 2017. .* "Clin Pract, (2017). **14.6**: p. 385-395.
31. Banu A, H.B.K.G., Raag A V , Huilgo G V., *Training on post exposure prophylaxis against blood born infections among intern in a tertiary care hospital.* the only way of survival;, 2014. **2(1):**: p. 40-43.
32. Mathewos B, B.W., Kinfe S, Boru M, Tiruneh G, Addis Z, Alemu A. BMC public health., *Assessment of knowledge, attitude and practice towards post exposure prophylaxis for HIV among health care workers in Gondar, North West Ethiopia.* 2013 Dec;. **13(1)**: p.:508.
33. Damte., M., *Assessment of the Knowledge, attitude and practice of health care workers on universal precautions in North Wollo zone, Amhara Region, North Eastern Ethiopia* April 2007.
34. Annil M, V.R., Harsh S, Kulbir S *Post exposure Prophylaxis after Occupational HIV Exposure.* (2007)

35 Eticha EM, Gemeda AB. Knowledge, attitude, and practice of postexposure prophylaxis against HIV infection among Healthcare workers in Hiwot Fana Specialized University Hospital, Eastern Ethiopia. AIDS Res Treat. 2019;2019:7947086. doi:10.1155/2019/7947086

36 Tshering K, Wangchuk K, Letho Z. Assessment of knowledge, atti-tude, and practice of post-exposure prophylaxis for HIV among nurses at Jigme Dorji Wanghuck National Referral Hospital, Bhutan. PLoS One. 2020;15(8):e0238069. doi:10.1371/journal.pone. 0238069

37 Monera T, Ncube P: Assessment of Knowledge, Attitude and practice ofhealth care workers on Occupational HIV post exposure prophylaxis atZimbabwean referral hospital. J Int AIDS Soc 2012, 15(4).

38 Chagani MM, Manji KP, Manji MP, Sheriff FG: Healthcare workers 'knowledge, attitudes, practices on post exposure prophylaxis for HIV inDar es Salaam. Tanzania Med J 2011, 25(2):33 – 38.

Annex

Questionnaires

QUESTIONNAIRE ON the research of knowledge, attitude and practice towards post exposure prophylaxis of HIV/AIDS among health care workers of WUSTH Wolkite, south west Ethiopia 2022

Part one= Interviewing part by data collector

DATE=…….

Working as a

a. Physicians
b. Public health officer
c. Midwifery
d. Nurse
e. Laboratory technicians

We are 4th year Public Health Students at Wolkite University College of medicine and health sciences. For the Requirement of Bachelor of science in Public Health we are required to carry out a research study about ON the assessment of the knowledge, attitude and practice towards post exposure prophylaxis of HIV/AIDS among health care workers of WUSTH, therefore, we request for your permission in responding the following questions. The information attaining will only be used for the purpose of this study and therefore will be held confidential.

You have a right to stop or jump any questions that you don't want to answer. Your correct answer to the questions can make the study achieve the goal. Therefore you are kindly requested to respond genuinely and voluntarily with patience.

We thank you in advance for taking your time to respond to our questions!

Would you willing to participate in the study?

1. Agree ……. (Proceed to the questions with self-administer)

2. Disagree…….. (Thank you for your time and interrupt and stop hear)

Signiture_____

Data collector (interviewer name)_____Signature _____

Part two (P2) Socio-demographic status	Questions	Choose	Remark
P2-1	How old are you? Age in year		
P2-2	Sex?	1. Male 2. Female	
P2-3	Marital status	1. Married 2. Single 3. divorced	
P 2-4	Ethnicity	1. Oromo 2. Amara 3. Tigray 4. Gurage 5. Other	
P 2-5	Religion?	1. Orthodox 2. Muslim 3. Protestant 4. catholic 5. Other	
P 2-6	Education level	1. First degree 2. Master's degree 3. Specialist 4. diploma	
P2-7	Year of experience	1. month-2 year 2. 3-5 year	

		3. 6-8 year 4. >8 year	
Part three(P3) knowledge status			
P 3-1	have you ever heard of the term HIV/AIDS post exposure prophylaxis	1. Yes 2. No	
P 3-2	If your answer is yes for Q no 1, From what source you got the information	1. Training 2. Mass media 3. Friends 4. Journals 5. Others 6. Multiple answer	
P 3-3	how soon should it be initiated after risky occupational exposure occur	1. Within 1 hrs. 2. Within 12 hrs. 3. Within 24-72 hrs. 4. Don't know	
P 3-4	What is the maximum delay to take PEP	1. 12 hour 2. 24 hour 3. 48 hour 4. 72 hour	
P 3-5	For how long does it recommended	5. Single dose 6. For 2 weeks 7. For 4 weeks 8. Don't know	
P 3-6	Do you know the drugs recommended for post exposure prophylaxis	1. Yes 2. No	
P 3-7	How many drugs are recommended	1. Single drug 2. 2 3. >=3 4. Don't know	
P 3-8	Do you know that HIV	1. Yes I do	

	post exposure prophylaxis is available in your working institution	2. No I don't	
P 3-9	If your answer is yes for Q 6, do you know when and where available in the institution	1. Yes 2. No	
P 3-10	Do you know occupational exposures which makes you at risk to acquire HIV/AIDS	1. Yes 2. No	
P 3-11	Do you know which type of occupational exposures are reported to the appropriate responsible body part in the institution	1. Yes 2. No	
P 3-12	Do you think that any type of occupational exposures need a PEP regimen	1. Yes 2. No	
P 3-13	Have you attend any training about PEP	1. Yes 2. No	
Part four (P4) attitude status			
P 4-1	Do you believe that HIV PEP can prevents risk of acquiring active HIV infection	1. Yes 2. No	
P 4-2	Dou you agree that training of health care workers can improve risk of exposure and HIV infection	1. Strongly agree 2. Agree 3. Fairly agree 4. Disagree	
P 4-3	Which way do you think is right to know HIV status of the source person	1. Only if the source person agree 2. Without the consent of the source person	

		3. Forcefully 4. By the order of law	
Part five (P5) Practice			
P 5-1	Have you ever sustained occupational exposure during your practice in the institution	1. Yes 2. No	
P 5-2	If your answer is yes for Q no 1, can you specify the type of exposure you sustained (you can answer multiple choses)	1. Blood 2. Other body fluid 3. Needle stick injury 4. Mucocutaneous 5. Other	
P 5-3	How many times did you sustained different types of this occupational exposures	1. <2 2. 3-5 3. >5	
P 5-4	What did you do immediately after exposure	1. Clean the exposed part with running water or NS 2. Didn't do anything 3. clean with antiseptic solution 4. Other	
P 5-5	What action did you take for your exposure situation	1. Keep silent 2. Report to the superior concerning bodies 3. Directly communicate to the PEP center in the institutions	
P 5-6	If you don't inform to the concerning body parts in the institutions, what was your reason	5. Fear 6. The patient was HIV negative 7. Unaware of HIV PEP 8. New needle	
P 5-7	Have you ever been started HIV PEP following occupational exposure	1. Yes 2. No	

P 5-8	If yes, When did you start the treatment	5. Within 1 hour 6. After 2-6 hour 7. After 6-10 hour 8. After 72 hour	
P 5-9	for how long does you received the treatment	1. <1 week 2. 2-3 weeks 3. 3-4 weeks 4. >4 weeks	
P 5-10	Did you finished you regimen as you told be the concerning body of department in the institution	1. Yes 2. No	
P 5-11	If you discontinued the drug, what was your reasons	1. Discomfort due to its side effect 2. Due to carelessness 3. Doubt its important 4. Unawareness	
P 5-12	What was your HIV sero-status before treatment	1. Positive 2. Negative 3. Not tested	
P 5-13	What was your HIV sero-status after completing the treatment regimen	1. Positive 2. Negative 3. Not tested	