Addis Ababa University

College of Health Sciences, School of Allied Health

Department of Nursing and Midwifery

Awareness of HIV Post-Exposure Prophylaxis among Health Care Personnel in Asella Teaching Hospital, Asella town, South-east Ethiopia

By

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Advisor

Asrat Demessie (Asst. Professor)

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A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Masters of Science in Adult Health Nursing in Department of Nursing.

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Examiner

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Abstract

***Background*:** HIV/AIDS is being considered as one of the major health problem and an occupational health hazard among health care personnel. Avoiding contact with infected blood is one of the primary strategies of preventing occupationally acquired HIV infection. Post exposure prophylaxis of HIV is the only way to reduce risk of HIV after potential exposure to blood and body fluids. This study was conducted to determine awareness of individuals about HIV PEP among health care personnel in health care setting particularly hospitals because there are high staffs and high risks of acquiring accidental exposure to HIV infection.

Objective: The objective of this study was to determine the level of awareness of HIV PEP and determinants factors among health care personnel of Asella Teaching Hospital.

Materials and Methods: This was a cross-sectional questionnaire-based survey conducted among 251 participant health care personnel at Asella Teaching Hospital, Asella town from December 2013 to May 2014. A purposive sampling survey was used. Pretest study was conducted on 5% of sample size and the questionnaires were modified accordingly.

Result: Respondents' level of awareness is measured by calculating the total possible score in PEP of HIV questions & classified into two categories: those who have no awareness (below 40 percentile), have awareness (above 60 percentile). Majority 198 (78.9%) of the respondents had good level of awareness on PEP of HIV. Over 64(25.5%) had been exposed to needle stick and other sharp injuries and 103 (41.0%) had been exposed to blood and body fluid splash to eye, or mouth.

Conclusion and Recommendation: This study revealed low use of PEP despite the average aware of HIV PEP amongst the respondents. So, health care personnel need to improve their awareness on PEP of HIV through different training program related to PEP of HIV.

Key words: Awareness, Occupational exposure, post-exposure prophylaxis, health care personnel, HIV

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Acronyms and Abbreviations

AAU- Addis Ababa University

AIDS- Acquired Immune Deficiency Syndrome

ART- Anti Retroviral Therapy

ARV- Antiretroviral

AZT-Zidovudine

BBV- Blood Borne Viruses

BSc- Bachelor of science

CI- Confidence interval

D4T- Stavudine

EDHS- Ethiopia Demographic and Health Survey

ETB-Ethiopian Birr

HBV- Hepatitis B virus

HCP- Health care personnel

HCV- Hepatitis C virus

HCWs-Health care workers

HIV- Human Immunodeficiency virus

HIV/AIDS- Human Immunodeficiency virus/ Acquired Immune Deficiency Syndrome

HO- Health officer

MPH- Masters in public health

PEP- Post-Exposure Prophylaxis

RN – Register nurse

SPSS- Statistical Package for Social Sciences

UK- Unit Kingdom

WHO /IOL- World Health Organization /International organization of Labor

WHO -World Health Organization

3TC- Lamivudine

1-Introduction

1.1 Background

HIV/AIDS is being considered as one of the major health problem and an occupational health hazard among health care personnel. Although avoiding contact with infected blood is one of the primary strategies of preventing occupationally acquired Human Immunodeficiency Virus (HIV) infection, appropriate post-exposure management (PEP) is an important element in workplace safety.

Post exposure prophylaxis of HIV is the only way to reduce risk of HIV after potential exposure to blood and body fluids. The use of anti-human immunodeficiency virus (HIV) drugs after occupational exposure to HIV is a proven method of preventing some HIV infection and there is record that these drugs are being used in treatment of post exposure infection to HIV. Timely PEP after needle stick exposure to high risk body fluids can reduce the rate of occupational transmission significantly.

So it is important to determine awareness of individuals about the accidental exposure to HIV infection and post-exposure prophylaxis among health care personnel in health care setting particularly hospitals because there are high staffs and high risks of acquiring accidental exposure to HIV infection.

Each day, thousands of people around the world experience accidental exposure to blood and other body fluids or tissues while performing their work duties. [1] The number of people infected with HIV continues to increase relentlessly.[2] Exposure to different body fluids has a potential risk of transmission of blood borne pathogens to health care workers (HCWs).[3] Post-exposure prophylaxis following exposure to HIV infection may prevent established HIV infection. [2]

Workers and employers are urged to take advantage of available engineering controls and work practices to prevent exposure to blood and other body fluids [3].

Preventing exposures to blood and body fluids (i.e., 'primary prevention') is the most important strategy for preventing occupationally acquired human immunodeficiency virus (HIV) infection. Both individual healthcare providers and the institutions that employ them should work to ensure adherence to the principles of "Standard Precautions," including assuring access to and consistent use of appropriate work practices, work practice controls, and personal protective equipment. [4]

HCWs are at risk of acquiring HIV infection by exposure to infected blood or body fluids. They can be exposed to HIV by sustaining needle stick injuries or cuts, getting blood or other body fluids in their eyes or mouth and by getting blood or other body fluids on their damaged or inflamed skin. The risk of HIV transmission in these ways is extremely low (<1%) for all exposures but can be reduced further by appropriate and timely post exposure prophylaxis. [5]

The overall adult HIV prevalence in Ethiopia has remained low. The HIV prevalence among Adults age 15-49 in the 2011 EDHS is 1.5 percent (confidence interval 1.2-1.7 percent), and it was 1.4 percent (confidence interval 1.1-1.8 percent) in the 2005 EDHS. HIV prevalence is higher in urban areas (4.2 percent) than in rural areas (0.6 percent). Among regions HIV prevalence is highest in Gambela (6.5 percent) and in Addis Ababa (5.2 percent). A higher proportion of Ethiopians who attended secondary school (3.1 percent) are HIV positive than those with less education or with more than a secondary school education. In general, differentials in HIV prevalence are similar for women and men. [6] Factors associated with risk for occupational transmission of HIV have been described; risks vary with the type and severity of exposure. [4]

In case of an exposure, the employer is responsible to make sure that first aid and medical attention are made available to the affected worker(s), and that workers are made aware of the requirement to report and seek attention for such exposures. [7]

Hospital is a health industry where people with various diseases are cared for and major group of people who provide health care. Occupational Blood and Body fluid exposure continue to be major worldwide public health problem, despite advances in our understanding and control of these infections. [8]

1.2. Statement of the problem

Health care personnel are facing a number challenges during their daily activities to stay healthy in the face of the generalized HIV/AIDS. This is also becoming synergized by the occupational risk to the virus. Increase in the incidence of infections due to greater exposure to micro-organisms and viruses that cause blood-borne diseases, such as the human immunodeficiency virus (HIV) has led the medical community to initiate efforts to prevent and limit exposure among health care workers (HCW). Health care personnel who have occupational exposure to blood are at risk for HIV infection. Health care workers are key players in the prevention and management of blood-borne infection, including human immunodeficiency virus (HIV).

Post-exposure prophylaxis (PEP) is short-term antiretroviral (ARV) or immune globulin treatment to reduce the likelihood of viral infection after exposure to the blood or body fluids of an infected person. Health care workers practicing in poor countries like ours are more exposed to HIV following occupational exposure and less likely to use PEP than those working in developed countries and well equipped facilities.

It is necessary to initiate the prophylaxis measure in order to minimize the chance of HIV establishment. Hence, Ethiopia has developed guideline on the prevention of infection in health institutions in July 2004 and also employed the use of post exposure prophylaxis since the implementation of free antiretroviral in January 2005. In this study area; in Asella teaching hospital ART was established since September 19, 2005 G.C and PEP service was available since June 12, 2010 G.C.

Prior to this study there were 131 cases were recorded to use the HIV PEP at Asella teaching hospital from different part of the Arsi zone health institute. These were not including in study participants. This research will, try to explore awareness of health care personnel regarding occupational HIV risks and PEP. This can help to provide efforts to improve prevention of HIV/AIDS in relation to the occupational hazards.

1.3. Significance of the study

The study provided information to various individuals and organizations regarding the availability of PEP against HIV infection. It provides basic data on the issue that may help local and national policy makers to implement and scale up use of PEP after potential exposure to blood and body fluids and reduce the establishment of HIV infection.

Accidental exposure to HIV infection is a common problem of health care setting. It is necessary and timely to study this important issue in the health care setting. Also the study indicates the way how the health care facilities should make available within their system; a standardized written protocol for infection prevention and reporting unit for management of occupational exposures.

Findings from the study used to initiate training and education program through different health care setup among all health care staffs. The health care facilities, employees are ultimate beneficiary of interventions based on findings. Also in large we hope that the results of this study assists policy makers, planners and health service providers for making considerations regarding occupational HIV risks and post-exposure prophylaxis.

2-Literature review

2.1 HIV infection and Occupational Exposure

From its discovery and subsequent description by scientists in the early 1980s to date, HIV/ADIS has been a major public health problem. Thirty- four million people are infected with HIV worldwide; 66% of them being in sub-Saharan Africa. [9]

It has been over 20 years since the first description of the acquired immune deficiency syndrome (AIDS) and the subsequent isolation of the causative agent, the human immunodeficiency virus (HIV). Today, an estimated 40 million people live with the virus, including nearly 5 million infected in the year 2004. Although sub-Saharan Africa remains by far the worst affected region, the epidemic is rapidly growing in other parts of the world including East Asia, Eastern Europe and the Caribbean. Even in Western Europe and North America, where the wide availability of antiretroviral therapy has resulted in marked reduction in HIV-associated morbidity and mortality, the number of new cases diagnosed with HIV continues to rise year to year. [2]

Various studies suggest that several factors may influence the risk of HIV transmission after occupational exposure. In a retrospective study of HCWs who had percutaneous exposure to HIV, the risk for HIV infection was found to be increased with exposure to a larger quantity of blood from the source person. A needle that was visibly contaminated with the patient's blood was placed directly in a vein or artery. [10]

HIV/AIDS is being considered as one of the major health problems and an occupational health hazard among healthcare professionals. Health care is associated with transmission of blood borne diseases like HIV, has always been an important public and medical concern worldwide. These injuries can result in a variety of serious and distressing consequences ranging from extreme anxiety to chronic illness and premature death for the individual involved. The most important response to this risk is to prevent as many of these injuries as possible, by constantly educating HCWs on the best methods for preventing injuries, by improving the safety of equipment and by working towards the optimal occupational health and safety environment. [11]

The World Health Organization (WHO) estimates that 3 million percutaneous exposures occur annually among 35 million HCW globally; over 90% occurring in resource constrained countries. These infections are preventable through infection control measures which significantly reduce the risk of HIV and Hepatitis transmission among health workers. [12]

The average risk of acquiring HIV infection following a percutaneous exposure to an infected source is currently estimated at 0.3% - 0.4%. The risk of HIV transmission following a mucocutaneous exposure is 0.1%. These figures represent only an average risk and the risk may actually be higher depending on other factors. [13]

Factors that increase the risk of HIV transmission include:

• High viral load in the source patient (source in seroconversion illness or late AIDS disease).

• Deep injury.

• Injury with a device previously placed in the source patient's vein or artery or with a device visibly contaminated with blood. [13]

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. [14]

Ethiopia is one of the hardest hit countries by HIV/AIDS epidemic with the national HIV prevalence of 1.4% in adults. Each day thousands of healthcare workers (HCWs) around the world suffer accidental occupational exposures to blood borne pathogens. Preventing the occurrence of HIV infection resulting from such accidental injuries at work place and the use of HIV Post-exposure prophylaxis (PEP) is recommended by WHO/ILO. [15]

Occupational transmission of blood borne infections may occur through parenteral, mucous membranes, and non intact skin exposure. The greatest risk for trans-dermal transmission is via a skin penetration injury sustained with a sharp hollow-bore needle that recently have been removed from a blood-contaminated source, or through contact of the eye, nose, mouth, or skin with a patient's blood. [16]

2.2 Evidence for HIV Post-Exposure Prophylaxis

Different evidences showed that there is an information gap in the health care setups regarding PEP. For instance a study conducted in London indicated that only 22% of doctors identified all the three drugs that are recommended at that time. A study conducted in Ethiopia, Jimma town, showed that 83.9% of total HCWs had inadequate knowledge about PEP for HIV and among the exposed respondents, 81.6% did not use PEP of whom 33.8% didn't use PEP because of lack of information. [14] The knowledge of risk factors and the circumstances in which these exposures occur in hospitals can be very useful for developing proper preventive guidelines and educational programs. [17]

Post-exposure prophylaxis (PEP), or the induction of protection against an infectious disease after exposure to the pathogen, is either utilized or has been suggested as an appropriate course of action for a number of diseases, including rabies, anthrax, varicella, HIV and Hepatitis A. [18]

Patients often present to emergency departments or primary care providers after possible exposure to HIV. Several issues may be addressed at the first consultation, including determining whether an exposure has occurred and, if so, the risk of transmission. If an exposure is likely to have occurred, there should be a discussion about post exposure prophylaxis. [19]

Although the most important strategy for reducing the risk of occupational HIV transmission is to prevent occupational exposures, plans for post-exposure management of health care personnel should be in place. [20]

Pathogenesis studies indicate that there may be a window of opportunity to abort HIV infection by inhibiting viral replication following an exposure. Once HIV crosses a mucosal barrier, it may take up to 48–72 hours before HIV can be detected within regional lymph nodes and up to five days before HIV can be detected in blood. Initiation of antiretroviral therapy (ART) has been shown to reduce dissemination and replication of virus in all tissues if initiated early after inoculation in an animal model. [21]

The United States 2010 National HIV/AIDS Strategy includes scale-up of access to post-exposure prophylaxis (PEP). Interventions that reduce HIV risk behaviors and support PEP adherence maximize the potential impact of PEP services. [22]

Evidence supports the recommendation that PEP drugs should be started for exposed persons (based on the indication) as early as possible, but preferably within two hours of exposure. Giving PEP drugs after 72 hours of exposure is not generally recommended. Therefore, ensuring a 24-hour availability of PEP services (including weekends and holidays) in health care facilities and providing orientation to staff on the procedures and the reporting system to follow when an incident happens will help in taking timely action as well as tracking exposure incidents. [23]

PEP is recommended when occupational exposures to HIV occur.

- Determine the HIV status of the exposure source patient to guide need for HIV PEP, if possible.
- Start PEP medication regimens as soon as possible after occupational exposure to HIV and continue them for 4-week duration.
- New Recommendation--- PEP medication regimens should contain 3 (or more) antiretroviral drugs for all occupational exposures to HIV.
- Expert consultation is recommended for any occupational exposures to HIV.
- Provide close follow-up for exposed a personnel that includes counselling, baseline and follow up HIV testing, and monitoring for drug toxicity.
- Follow-up appointments should begin within 72 hours of an HIV exposure.
- New Recommendation--- If a newer 4th generation combination HIV p24 antigen-HIV antibody test is utilized for follow-up HIV testing of exposed HCP; HIV testing may be concluded at 4 months after exposure. If a newer testing platform is not available, follow-up HIV testing is typically concluded at 6 months after an HIV exposure. [4]

2.3 Occupational exposure to HIV and the use of PEP

Use of post-exposure prophylaxis (PEP) against HIV infection dates back to the early 1990s, when only limited antiviral treatment for chronic infection was available. Prophylaxis was primarily used after occupational exposures. Generally, combination therapies are prescribed nowadays, so current HIV PEP may be more effective. However, PEP is not a guarantee of protection. [24]

The prescription of antiretroviral therapy as post-exposure prophylaxis (PEP) following significant potential exposure to HIV has now become routine and it is important that individuals with potential risk of exposure are aware of the procedures to follow and where their first point of contact should be if an incident occurs. [25]

A retrospective case-control study demonstrates that PEP with AZT for 4 weeks associated with an 81% reduction in transmission of HIV in human. With a lower risk transmission for HIV, a two drug PEP regimen is recommended. After higher risk exposures, however, an expanded (three drug) regimen is recommended. The 2008 Ethiopian guideline for management of opportunistic infection and ART, recommended AZT/3TC and d4T/3TC AS preferred 2 combinations with the additional of Efaverenz or Lopinavir/ritonavir(kaleta) [1]

The drug regimen selected for HIV PEP should have a favorable side effect profile as well as a convenient dosing schedule to facilitate both adherence to the regimen and completion of 4 weeks of PEP. [4]

Post-exposure prophylaxis refers to medications given to prevent infection after exposure. The prophylactic treatment offers both benefit and risk to the exposed person. The exposed person must be advised of the risks and benefits and make their own decision whether or not to take PEP. [26]

2.4. Awareness of HIV PEP

One study conducted in Mangalore, India, among Interns of a Medical College ; it was reported that only 23.5% knew the first aid measures following exposure and approximately 57.6% expressed knowledge relating to the application of antiseptics to the injured site; however, poor knowledge was observed with respect to the time of initiation of PEP, PEP drug regimens and their duration; while very few of the respondents actually knew where the drugs were available at the hospital and whom to first contact following any incidence of occupational exposure.[27]

In a similar study conducted in Vietnam the reason for the lack of awareness was due to the lack of guidelines and protocols. These results are in agreement with a previous study conducted in Vietnam, which demonstrated similar lack of knowledge regarding HIV with only a few staff having just the basic information [5]

Antiretroviral drugs should only be used for these indications after careful consideration of the potential risks and benefits with a full awareness of the current gaps in knowledge. [7]

Awareness of the importance of reporting a potential exposure to HIV or other BBVs is essential for clinical and medico-legal reasons. Many HCWs have inadequate knowledge about PEP despite being at risk of different occupational exposures. [3]

A study conducted in India on the level of knowledge of staff nurses regarding post-exposure prophylaxis of blood-borne infections (HIV, HBV and HCV) revealed that 21.6-29.6% of nurses had inadequate knowledge in the area of post-exposure prophylaxis. [8]

Study conducting in Nyanza, Kenya; reveal that the level of awareness of occupation post-exposure prophylaxis was 74.5% among health workers in the rural facilities and 67.5% in the urban facility. [9]

Another study conducted among Nigerian Family physicians reveals that 97.7% of respondents were aware of the concept of post-exposure prophylaxis. 82.1% had existing protocols for HIV PEP at their workplaces, 7.5% did not have HIV PEP protocols at their workplaces, and 10.4% were not aware of the existence of HIV PEP protocols in their facilities. [28]

Another study among health care workers in public secondary health facilities in Abuja, Nigeria shows that the knowledge of the recommendation on post-exposure prophylaxis was poor among the respondents. Only 49.4% doctors and 56.7% nurses knew that HIV counseling and testing was required after occupational exposure, and that PEP should be given if the HIV test result is negative. 68.67% doctors and 62% nurses knew the correct duration for PEP. The majority of respondents 85.54% of doctors and 69.07% of nurses knew that two or three antiretroviral drugs should be used for PEP within 72 hours of exposure. [10]

In Ethiopia there are some studies conducted to assess the knowledge and practice of HCW. Among these; a study conducted in Addis Abba city reveled that 83.1% respondents were aware of the presence of HIV PEP. All of them, who were aware of it, mentioned that PEP is a kind of antiretroviral treatment used immediately after an accidental exposure to HIV. [3] Another study conducting among health care workers in Gondar, North West Ethiopia, there is significant proportion of study subjects had less knowledge and practice even though the majority of respondents had favorable attitude towards PEP. [14]

In the similar study conducted among health workers of governmental health institutions in Jimma zone, oromiya region, southwest Ethiopia, shows that 83.9% had inadequate knowledge about post exposure prophylaxis of HIV and 68.5% had ever been exposed to HIV risk conditions. [15]

In summary the literature on the awareness of PEP among health care personnel were reviewed to provide insight to this study. The review has revealed that occupational exposure with its consequences is real and awareness of health care personnel were important issue in the utilization of HIV PEP.

2.5. Conceptual framework

As shown in the following conceptual framework (Figure 1), awareness of PEP against HIV infection usually influenced as a result of many factors, which have different level and degree of influence.

Different socio-demographic factors, which are indicated in one part of the framework, are most likely to act through a number of other interrelated factors, including Educational status, job category and work experience and other factors like as information factors that indicated at the bottom of the framework.

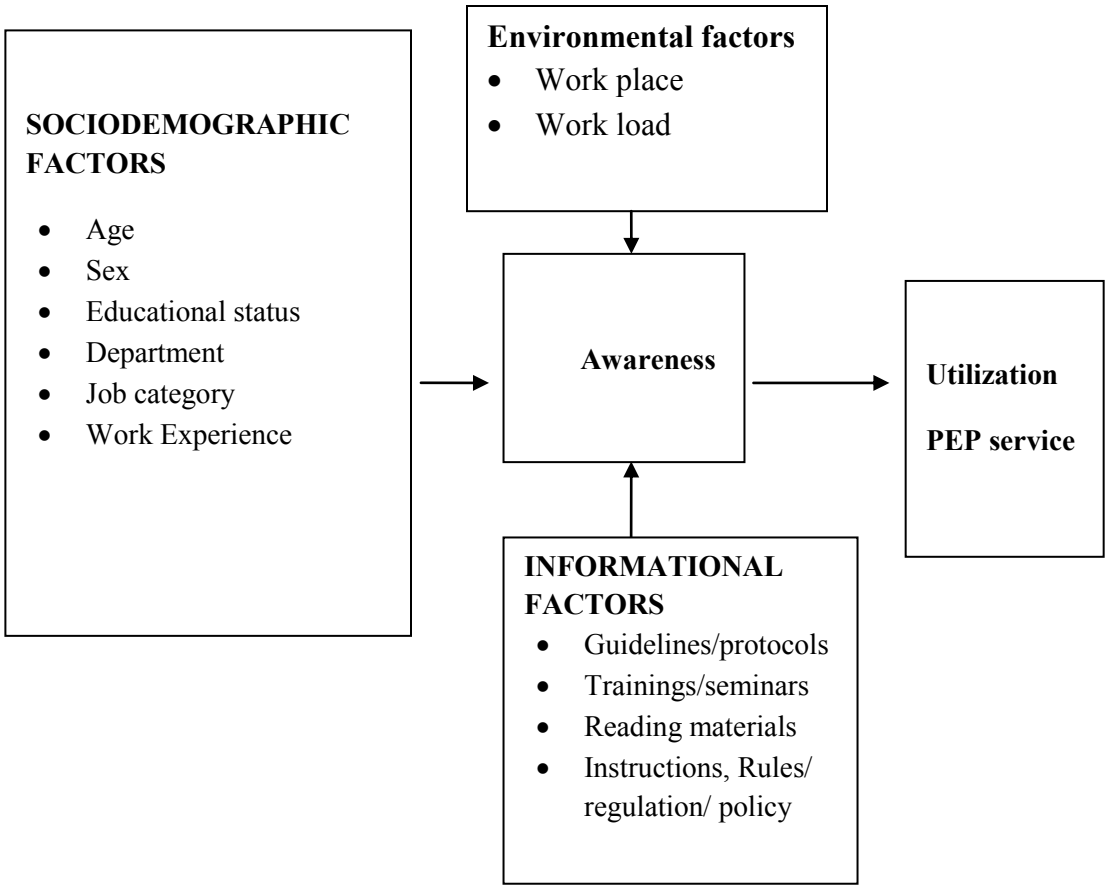

Fig. 2. Conceptual framework of the study (The Conceptual framework was re-conceptual through revision of different literatures)

3-Objectives

3.1 General objective:

To determine Awareness of Post-Exposure Prophylaxis (PEP) against HIV Infection among health care personnel in Asella Teaching hospital Assela town, South-east Ethiopia.

3.2 Specific objectives:

1. To determine and estimate the level of awareness regarding Post-Exposure Prophylaxis among staffs.
2. To find out availability of information about Post-Exposure Prophylaxis (PEP) against HIV infection among health care personnel.
3. To determine the association between the Awareness and selected socio demographic variable among health care personnel.

4- Methodology

4.1 Study area

The study was conducted in Asella town in South-east Ethiopia. It is located in the Arsi Zone of the Oromia Region about 175 kilometers from Addis Ababa and 75 km from Adama town to southeast. The town has a latitude and longitude of 7°57′N 39°7′E, with an elevation of 2430 meters.

Adama Science and Technology University, Asella School of health and Hospital was established in 2008 by combining the two previously existing Asella Hospital and Asella Health Science College. Then the hospital gets its name as teaching hospital. Currently with the capacity of 250 beds, Asella teaching Hospital is serving population of 3.5 million in different specialties.

Asella School of health sciences now consist both health care professional and administration or supportive staffs in which provide its services. As we get from school payroll now the school has a total of 851 staffs. Among this 506 are working in the teaching Hospital and the rest 345 are working in the School. 377 are health care professionals and the rest 474 were administration or supportive staffs in which working in different work categories and departments.

4.2. Study period

Study was conducted from December 2013 to may 2014

4.3 Study design

A quantitative descriptive cross-sectional study design was used to collect data related to awareness and Knowledge of Post-Exposure Prophylaxis (PEP) against HIV Infection among health care personnel in Asella Teaching hospital Asella town, South-east Ethiopia.

4.4 Source population

All health care personnel who are working in Adama Science and Technology University, Asella School of health sciences and teaching Hospital

4.5 Study population

The study participants were all health care personnel that fulfill the inclusion criteria.

Inclusion Criteria: All health care personnel working in the hospital who have a potential to be exposed to HIV in their day to day work related activities.

Exclusion Criteria: All health care personnel who are working in the office and who have no direct contact with patient care in their day to day activities. These are includes Administrators, secretaries, finance and personnel officers etc. Also those previously used HIV PEP in their life time.

4.6 Variables of the Study

Dependent variable

- Awareness about HIV post-exposure prophylaxis

Independent variables

- **Socio-demographic factors**

Job category includes, (emergency medical service personnel, dental personnel, laboratory personnel, autopsy personnel, nurses, nursing assistants, physicians, technicians, therapists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care but potentially exposed to blood and body fluids (e.g., clerical, dietary, housekeeping, security, maintenance, and volunteer personnel). sex, age, educational status, work experience in health facilities.

- **Source of information**

  Includes, guidelines, trainings, Educational programs, Instructions, rules etc

4.7 Sample size calculation

Sample size was determined using sample size calculation for a single proportion. The awareness of HIV PEP among the study subjects was not known from previous studies in the local context. Therefore, the prevalence of awareness of HIV PEP will be assumed to be 50% to get maximum sample size. (The assumption was that 50% of HCP not aware of HIV PEP. Sampling was made from finite population (N=851, those HCP), which was less than 10,000.

By applying a finite population correction, the final sample size will be computed by using the following formula.

$$n = \left(\frac{Z_{\alpha/2}}{d} \right)^2 P(1-P)$$

$n_f = \frac{Z_1^2 \text{ x } \alpha/2 \; P(1-P)}{d^2}$

$n_f = \frac{(1.96)^2 \text{ x } \alpha/2 \; 0.5(1-0.5)}{(0.05)^2}$

$n_f = 384$

Where:

n_f = the minimum sample size required

n = the number of HCP at Asella teaching Hospital

N = number of HCP Asella school of health sciences

P = is estimated prevalence rate in percent

d = the margin of sampling error tolerated (5%)

Z_1 = the standard normal variables at (1-x) % confidence level and α/2 is mostly5% that is 95 % confidence interval.

Total numbers of HCP who are working in the Asella School of health sciences are 851

Total numbers of HCP who are working in Asella teaching Hospital are 506

Therefore the total number of study subject according correction formula will be

$\frac{n_f \text{ x } n}{N}$, Therefore $\frac{384 \text{ x } 506}{851} = 228$

228+ 10% non response rate = 228 + 23 =251

4.8 Sampling procedures

Asella hospital was selected since it is the only Hospital in the town. Also the ART were established for the first time in the area and it contains large number of staffs who are high risk to accidental exposure to HIV infection. To select study subject purposive sampling was used. Criteria to select the sample was used those health care personnel who were working in high risk areas. Final sample was calculated from each of the health care personnel as follows.

Profession	**Total number**	**Sample size involved**
Physicians	82	41
Health officer	28	14
Nurse	136	67
Midwife	30	15
Libratory	28	14
Pharmacy	25	12
Cleaner	54	27
Porter	16	8
Maintenance workers	20	10
Laundry workers	12	6
Others	75	37
Total	506	251

4.9 Data collection methods and instrument

Data was collected using standardized and structured questionnaire that is adapted from similar study done to determine awareness of health care personnel about Post-Exposure Prophylaxis (PEP) in Addis Ababa city in different Hospitals. The questionnaires format has composed of different variables related to the objective of the study. The questionnaire was pretested on 5% of the sample i.e. 13 of the study subjects in which out of the actual study subjects those who were working at both Asella School of health Sciences and Teaching hospital with great care not included in actual study participants to check for any missing options, ambiguity, clarity, consistency and validity before collecting data.

For data collection, two diploma nurses was selected and one BSc nurse as supervisor from Asella School of health sciences was trained on the objective, benefit of the study, individual's right, informed consent and techniques of the interview for one day.

4.10 Data quality control

The quality of data was assured by using properly designed questionnaire, proper training of interviewers and supervisors about data collection procedures and coding of the questionnaire. Every day the computed questionnaires was viewed and checked for completeness and relevance by supervisor and principal investigator. The necessary feedback was given every morning before the actual procedure and analysis by using proper method for variables under study.

4.11 Data analysis and management

All returned questionnaires were checked for completeness and consistency of response manually. After checking data were coded, entered into EPI INFO-6, version 3.5.4 and was exported to SPSS for window version 20.0. Appropriate descriptive statistics and analytical (frequency, mean, standard deviation and chi-square test was used to determine the prevalence and statistically significant association between the dependant variables. P-value less than 0.05 were considered statistically significant.

4.12 Operational Definitions

1. **HIV Post-exposure prophylaxis:** an anti-retroviral therapy, given in different forms after an occupational exposure to HIV and will be given to HCPs if there is:
   - A percutaneous injury(for example, needle-stick or cut with a sharp object)
   - Contact with mucous membrane or non-intact skin(for e.g., skin chapped or abraded or dermatitis)
   - Prolonged contact with skin or contact that involves an extensive area of skin.
2. **Awareness:** Respondents were considered to be Aware about HIV PEP if they mentioned the correct responses in at least three of the five variables i.e. awareness on the heard about PEP, presence of HIV PEP in their hospital, and mentioned its use correctly, described its usual initiation time after exposure (drugs should be started within 72 hours after exposure) and the usual duration to take the tablets (4 weeks).

4.13 Ethical considerations

Ethical clearance letter was obtained from Addis Ababa University, College of Health, School of Allied Health Sciences; Department of Nursing and Midwifery. A written consent was obtained from Asella teaching Hospital to participant staffs. Additionally an informed verbal consent was obtained from each respondent after providing adequate information on the purpose of study. Anyone who was not willing to participate in study was given the full right to do so. To ensure the confidentiality of respondents their names was not written on the questionnaire.

4.14 Dissemination of results

The final result of this paper will be given to Addis Ababa University, College of Health Sciences, School of Allied Health, Department of Nursing and Midwifery. Lastly an attempt will be made to disseminated through AAU website, AAU nursing library, and present the paper at conference, meeting and to publish on highly regarded research journal.

5-Results

5.1. Socio-demographic Characteristics of the Study Population

Socio-demographic characteristics of the respondents were shown in (**Table 1)**. Out of 251 sampled respondents in the study hospital during the study period a total of 139 (55.4%) were males and 112 (44.6%) were females

The ages of the study participants ranged from 19 to 58 years, with mean age of 31.14 years and Std deviation 8.02. Different age group was documented as less than 24 years 43 (17.4%), 25-34 years 138 (55.0%), 35-44 years 49 (19.6%) and the rest includes as age greater than 45 years 20(8.0%). The educational status of respondents 113 (45.0%) were diploma level flowed by first degree holders were 82(32.7%).

Staff who participated in the study were grouped into their similarity of activities including physicians and health officers, nurses and midwifery, laboratory and pharmacy, cleaners and porters, maintenance & laundry workers and rest of them were included under others such as anesthetist, radiologist, physiotherapies and ophthalmologist who were on duty during the study period. Of these, 82 (32.7%) nurses and midwifery whereas, 55 (21.9%) were physicians and health officers. Health care personnel were working in different departments. 97(38.6%) was working in the wards followed by 50(19.9%) at OPD and the rests 56(22.3%) were working in different departments.

The minimum service year was 1 year and the maximum year were 30 years with mean age of 5.6 and Std deviation of 5.9.Regarding year of service of health care personnel 170 (67.7%), 42(16.8%), and 39 (15.5%) were served as less than 5 years, 5-10years and above 10years respectively.

Table 1: Respondents' Socio-demographic characteristics (n=251)

Variables		Frequency	Percentage
Sex	Female	112	44.6
	Male	139	55.4
Age	≤24	43	17.4
	25-34	138	55.0
	35-44	49	19.6
	≥45	20	8.0
Educational status	1-10	23	9.2
	Preparatory complete	5	2.0
	Certificate	11	4.4
	Diploma	113	45.0
	First Degree	82	32.7
	Master	13	5.2
	Specialist	4	1.6
Current profession	Physicians / HO	55	21.9
	Nurses/ Midwife	82	32.7
	Laboratory/ Pharmacy	26	10.4
	Cleaner/ Porters	35	13.9
	Maintenance/ Laundry workers	16	6.4
	Others	37	14.7
Department	OPD	50	19.9
	Wards	97	38.6
	Theater	17	6.8
	Special clinic	9	3.6
	Maternity	22	8.8
	Others	56	22.3
Work experience	Less 5 year	170	67.7
	5-10 year	42	16.8
	Above 10year	39	15.5

Mean age ± SD = 31.14± 8.02; Mean experience ± SD = 5.6 ± 5.9

5. 2. Awareness of risk of accidental exposure to HIV infection

Majority 206 (82.1%) believed as they were at a risk of acquiring HIV infection and 162(64.4%) respondents had at work place exposure to HIV infection. 127(50.6%) respondents leveled themselves as having high risk and the remaining 99(39.4%) leveled themselves as low risk to HIV infection**.**

Among the total participants 64 (25.5%) experienced needle stick or other sharp injuries. Among this 45 (17.9%) of them experienced injury once and 16(6.4%) had encountered more than two times within their life time. 103 (41.0%) respondents were exposed to blood or body fluid splash to eye, or mouth in their life time.

The majority of them, 199(79.3%), did not take any training related on how to report a needle stick injuries or other exposure. Regarding use of universal precaution or wear personal protective equipments; almost majority of them 124(49.4%) were use always and about 99(39.4%) were use sometimes. 37 (14.7%) respondents were exposed to HIV infections and among this 18(7.2%) were due to Accidental sharp items injury and 10(4.0%) were due to contact with blood & body. Out of this 24(9.6) were tested for HIV and rest of them did not tested. **(Table 2)**

Table 2: Respondents' Awareness on accidental occupational exposure to HIV infection (n=251)

Awareness area	Frequency		
		In number	percent
Risk of HIV infection	Yes	206	82.1
	No	45	17.9
Place most likely to get infected with HIV	Outside work	11	4.4
	At work place	162	64.4
	Same Risk in both places	56	22.3
	Don't Know	22	8.8
Level of risk of HIV infection	High risk	127	50.6
	Low risk	99	39.4
	No risk	25	10.0
Any needle stick or other sharp injuries	Yes	64	25.5
	No	187	75.5
Number of times injuries encounter	Once	45	17.9
	Two times	16	6.4
	More than two times	11	4.4
	No injury	179	71.3
Blood or body fluid splash to eye, or mouth	Yes	103	41.0
	No	148	59.0
Trained on how to report a needle stick injuries or other exposure	Yes	52	20.7
	No	199	79.3
Use universal precaution or wear personal protective equipments	Yes, always	124	49.4
	Yes, sometimes	99	39.4
	No	28	11.2
Ever been occupational exposure	Yes	37	14.7
	No	214	85.3
List occupational exposure	Accidental sharp items injury	18	7.2
	Splash of blood & body fluids	8	3.2
	Contact with blood & body	10	4.0
	No exposure	215	85.6
Ever tested for occupational exposure to HIV	Yes	24	9.6
	No	227	90.4

5.3. Awareness of PEP against HIV infection among HCP

From the total study participants 221 (88.0%) of respondents were aware of presence of prophylaxis to HIV after exposure to injury or blood & other body fluids. Among this 61(24.3%) of them were attended trainings related to HIV PEP within the past 01 year. Majority of them 190(74.7%) were not received any refresher training on HIV PEP.

Ninety two (36.6%) described that they saw guidelines related to HIV PEP in their facility and 121(48.2%) saw posted posters in their department. Whereas about 72 (28.7%) and 53 (21.1) of the respondents were no known as there is written guidelines/ protocols for PEP and Posters that remind for the availability of PEP respectively.

Majority of the respondents were aware the availability of PEP within their hospital. Out of the total respondents 216 (86.0%) said that it was available in their facility, 5(2.0%) knew its available elsewhere 22 (8.8%) didn't know its availability either in their facility or elsewhere.

Among the respondents, 78 (31.1%) were not communicated about Policies related to HIV and 83 (33.0%) did not known the presence policies.

Out of the respondents 41 (16.3%) of them were known the used PEP in their life time. 86(34.3%) were mentioned PEP were effective and 66(26.3%) were reply as they don't know. Out of the respondents who were said the way to increase the uptake of PEP were Provide more training for staff accounts about 123(49.0%) and flowed by have a counselor available58(23.1%) **(Table 3)**

Table 3: Respondents' Awareness on post-exposure prophylaxis against HIV infection (n=251)

Awareness area	Frequency		
		Number	percent
Presence of prophylaxis to HIV after exposure to injury or blood & other body fluids	Yes	221	88.0
	No	30	12.0
Any refresher training on PEP	Yes	61	24.3
	No	190	74.7
Pre-service or in-service training on PEP	Past 01 year	38	15.1
	Past 2-3 year	13	5.2
	Before 3 years	16	6.4
	No training	184	73.3
Written guidelines/ protocols for PEP	Yes	92	36.6
	No	87	34.7
	Don't Know	72	28.7
Posters that remind for the availability of PEP	Yes	121	48.2
	No	77	30.7
	Don't Know	53	21.1
PEP available for health care workers'	Yes, available here	216	86.0
	Yes, available elsewhere	5	2.0
	No, not available here or elsewhere	8	3.2
	Don't Know	22	8.8
Policies related to HIV and communicated to staff	Yes	90	35.9
	No	78	31.1
	Don't Know	83	33.0
Presence of a PEP focal person	Yes	159	63.3
	No	92	36.7
Known Use PEP in your life time	Yes	41	16.3
	No	210	83.7
Effectiveness of PEP in protecting HIV infection	Very effective	86	34.3
	Somewhat effective	87	34.6
	Not effective	12	4.8
	Don't Know	66	26.3
Most successful way of increasing PEP up take	Have a counselor available	58	23.1
	Have someone to report the injury	9	3.6
	Provide private way to have an HIV test	55	21.9
	Provide more training for staff	123	49.0
	Others	6	2.4

5.4 Results of the respondents on answers of HIV PEP

This is calculated from the respondent's answers given to the questions to measure their awareness on HIV post exposure prophylaxis. According to this two hundred twenty three (88.8%) respondents had ever heard of HIV- PEP, 215 (85.7%) respondents answered the presence of HIV PEP in their hospital and 121 (48.2%) respondents correctly responded to the use of PEP. One hundred sixty five (65.7%) respondents answered correctly for the maximum time to start PEP and 151(60.2) the usual duration of PEP were answer correctly. **(Table 4)**

Table 4: Shows the results of respondents answers about HIV PEP questions among Health Care Personnel (n=251)

Variables		Frequency	
		In No.	Percent
Ever heard of HIV- PEP?	Yes	223	88.8
	No	28	11.2
Presence of PEP in this hospital	Yes	215	85.7
	No	36	14.3
What is the use of PEP?	Prevent transmission of the virus	82	32.7
	Prevent establishment of the virus	121	48.2
	Curing from the disease	2	0.8
	Prolong the lives of the person	23	9.2
	Do not know	23	9.2
When do the maximum time to start the first PEP?	1 hour or less	20	8
	Within 24 hours	36	14.3
	Within 72 hours	165	65.7
	After 3 days	2	0.8
	Do not know	28	11.2
What is the duration of PEP?	Less than 1 week	9	3.6
	4 weeks	151	60.2
	More than 4 weeks	15	6.0
	Life long	38	15.1
	Do not know	38	15.1

5.5. Level of Awareness on HIV PEP

Regarding respondents who mentioned the correct responses at least three of the five variables i.e. ever heard of HIV- PEP, the presence of HIV PEP and mentioned its use correctly, described its maximum time to start PEP after exposure and the usual duration to take the PEP were considered to be aware, while those that did not answer three of the five variables were considered as not being aware.

Respondents' level of awareness is measured by calculating the total possible score in PEP of HIV questions & classified into two categories: those who have no awareness (below 40 percentile), have awareness (above 60 percentile).

According to this findings among the total respondents 198(78.9%) were answer more than three question out of the five question and we consider as they have aware of HIV PEP. But among the total respondents 53(21.1%) were answered less than three questions and those considered as they have no awareness about HIV PEP. **(Table 5)**

Table 5: Respondents' Level of Awareness and Knowledge on PEP of HIV (n=251)

	Health care personnel	**Awareness of HIV PEP**			
		Yes		**No**	
		Number	**Percent**	**Number**	**Percent**
Current profession	Physicians / HO =55	54	98.2	1	1.8
	Nurses/ Midwife =82	71	86.6	11	13.4
	Laboratory/ Pharmacy=26	21	80.8	5	19.2
	Cleaner/ Porters=35	16	45.7	19	54.3
	Maintenance/ Laundry workers=16	10	62.5	63	7.5
	Others=37	26	70.3	11	29.7
	Total	**198**	**78.9**	**53**	**21.1**

5.6 Association of socio-demographic factor to Awareness of HIV PEP

Regarding association between awareness of HIV PEP with socio-demographic characteristic of the respondents (Table 6) 81(72.3%) of female and 117(84.2%) of male respondents were aware about the HIV PEP giving a total of 198 (78.9%) respondents. Whereas 31(27.7%) of females and 22(15.8) of males were not aware of HIV PEP. From Chi-square analysis shown in table 6 being a female were less aware and significantly associated with awareness of HIV PEP than male (X^2 =5.2, 95%CI (p=0.022)

In the analysis, respondents in the age group younger ages less than 24 years 43(100.0%) had a higher awareness than the older age group 11(55%). 9(45%) of the respondents were not aware about HIV PEP. It seemed that as younger ages has the recent information the older age groups. Chi-square analysis (X^2=22.6, p=0.001)

From the educational status and professional categories, Chi-square analysis shows that the strongest association was observed with being low class education status 1-10 grade15 (65.2%) and from professional categories a Cleaner/ Porters 19(54.3%) had poor awareness on HIV PEP. (P=0000) However, this association was not significant when adjusted with other related factors.

Health care personnel who were working in wards 84(86.6%), 43(86.0%), Theater12 (70.6%) had more aware than the other departments. This is because of those HCPs who are working in a very risky department/unit may perceive themselves as having high risk to HIV than other HCPs. So they were more alert and they might have more tainting in their departments. There is an association among the departments as shown in Table 6. (X^2 =13.0, p=0.023)

Regarding work experience, HCPs with low work experience less than 5 years 145(85.3%) had a higher awareness than those who had higher work experience more than 10 years24 (61.5%). About 15(38.5%) of the respondents those with work experience more than 10 years were no awareness about HIV PEP. Chi-square analysis shows an association between the work experience and awareness and knowledge f HIV PEP. (X^2 =11.5, p=0.003) (Table 6)

Table 6 Association of socio-demographic characteristics to Awareness HIV PEP among HCP in Asella Teaching hospital, Asella town, 2014

Variables		Awareness of PEP		X^2	P-value
		Yes No. (%)	No No. (%)		
Sex	Female =(112)	81(72.3)	31(27.7)	5.2	0.022
	Male =(139)	117(84.2)	22(15.8)		
Age	≤24 =(43)	43(100.0)	0	22.6	0.001
	25-34 = (138)	113(81.9)	25(18.1)		
	35-44 =(49)	34(69.4)	15(30.6)		
	≥45=(20)	11(55)	9(45)		
Educational status	1-10 =(23)	8(34.8%)	15(65.2)	46.3	0.000
	Preparatory complete=(5)	3(60.0)	2(40.0)		
	Certificate=(7)	7(63.6)	4(36.4)		
	Diploma=(113)	86(76.1)	27(23.9)		
	First Degree=(82)	79(96.3)	3(3.7)		
	Master =(13)	11(84.6)	2(15.4)		
	Specialist=(4)	4(100.0)	0		
Current profession	Physicians / HO =(55)	54(98.2)	1(1.8)	21.4	0.000
	Nurses/ Midwife=(82)	71(86.6)	11(13.4)		
	Laboratory/ Pharmacy=(26)	21((80.8)	5(19.2)		
	Cleaner/ Porters=(35)	16(45.7)	19(54.3)		
	Maintenance/ Laundry workers =(16)	10((62.5)	6(37.5)		
	Others=(37)	26(70.3)	11(29.7)		
Department	OPD=(50)	43(86.0)	7(14.0)	13.0	0.023
	Wards=(97)	84(86.6)	13(13.4)		
	Theater=(17)	12(70.6)	5(29.4)		
	Special clinic=(9)	7(77.8)	2(22.2)		
	Maternity=(22)	17(77.3)	5(22.7)		
	Others=(56)	35(62.5)	21(37.5)		
Work experience	Less 5 year =(170)	145(85.3)	25(14.7)	11.5	0.003
	5-10 year =(42)	33(78.6)	9(21.4)		
	Above 10year =(39)	24(61.5)	15(38.5)		

6-Discussion

HIV/AIDS continues to be a serious public health concern and occupational exposure of HCWs to this virus poses a threat to health care delivery systems in resource-limited settings. Ensuring occupational health and workplace safety pose serious challenges in our clinical care settings; therefore, studies relating to awareness, knowledge, and attitude/practices of HCWs are vital as they help to inform policy on occupational post exposure prophylaxis against blood borne pathogens such as the HIV. [28]

This study showed that the greater majority 198(78.9%) of health care personnel in the Asella teaching hospital Arsi Zone Southeastern Ethiopia were aware of HIV PEP. The study revealed that 53(21.1%) of HCPs were not aware of HIV PEP.

This is similar with study conducted in Mangalore, India, among Interns of a Medical College ; it was reported that only 23.5% knew the first aid measures following exposure and approximately 57.6% expressed knowledge relating to the application of antiseptics to the injured site; however, poor knowledge was observed with respect to the time of initiation of PEP, PEP drug regimens and their duration; while very few of the respondents actually knew where the drugs were available at the hospital and whom to first contact following any incidence of occupational exposure.[27]

In other study conducted in Kenya in which 74% at rural area HCP and 67% in urban area HCP were aware of HIV PEP. [9] It was less than the present study. This difference could be due to broader information coverage among the study population.

Another study conducted among Nigerian Family physicians reveals that 97.7% of respondents were aware of the concept of post-exposure prophylaxis. 82.1% had existing protocols for HIV PEP at their workplaces, 7.5% did not have HIV PEP protocols at their workplaces, and 10.4% were not aware of the existence of HIV PEP protocols in their facilities. [28]

In the present study, among all study participants 87.6% have heard about PEP for HIV. When we compare it with other study which was conducted in Gondar University Hospital (92.8%), it was found that less percentage of the study participants in the present study had been found who heard about PEP. [14] The variation might be due the study time.

Among health care personnel those who are a supportive staffs were less aware and knowledge about PEP of HIV in this study area. The study indicates that health care personnel from physicians and health officer categories (98.2%) were well aware about the presence of HIV PEP. But from cleaner and porters categories (45.7%) were aware about the presence of HIV PEP. This is less when comparing with others category of heath care personnel. This is similar with that of study conduct in Addis Ababa health facilities among HCP that indicating all health professionals (76.6%) were aware PEP but from all Auxiliary staffs (36.5%) were aware of HIV PEP. [3] This indicates as there is gap of awareness and knowledge among non health care professionals those who were at the risk of accidental occupational HIV infection.

The most effective means to put a stop to the occurrence of blood borne diseases is by preventing exposure to blood and body fluids. Work-related exposures need urgent medical attention to ensure timely post-exposure management. Needle stick injuries (NSI) and exposure to splashes of blood and body fluids (BBF) among health care workers have been reported from different parts of the world. [17]

The present study shows (82.1%) were thinking as they were at high risk accidental exposure to HIV infection at their work place. Also among the respondents (25.5%) had needle stick or other sharp injuries for Once (17.9%) in their life time and (41.0%) of them were encountered blood or body fluid splash to their eye or mouth. Studies in other areas also indicated that (38.2%) of HCWs experienced at least one needle stick or other sharp injuries in their life time and blood and other body fluid splash in to the eye, nose and/or mouth were (34.9%) respondents in their entire work career. [3]

Needle stick or other sharp injuries were greater than the present study whereas the blood and other body fluid splash in to the eye, nose and/or mouth accidents were less than the present studies. This difference could be due to the study population were from one health facilities that face similar accidents. Also one study conduct in a University Hospital in the United Arab Emirates (25.7%) nurses had exposure to splashes of blood and body fluids into their eyes or mouth. [17]

Reasons for the observed difference of findings between different research results might be due to the difference population, economic difference of the study population and time difference of the studies.

From the study findings, there seemed to be a gap of awareness of HIV PEP among health care personnel. Trainings may also be needed to ensure that HCP to fully understand the presence HIV PEP. So that in case of exposure they will know what to do, where to get treatment and where to report.

7. Strength and limitation

7.1. Strength of the Study

One of the strengths of the study was that the sample was includes all category of the health care personnel to address different view of the respondents. The study sample was including health care professionals (physicians, Health officers, nurses and all other), paramedical and supportive workers (cleaners, porters) those who are risk to HIV infection due to their work place. This study also to explore factors that are affects the presence of HIV PEP

7.2. Limitations of the Study

There are some limitations of the study. As information was self reported, this was respondent recall bias among the HCPs. A purposive sampling may limit the generalization.

8-Conclusions

Based on the finding and discussions of the study, majority 82.1% believed as they were at a risk of acquiring HIV infection and 64.4% respondents had at work place exposure to HIV infection. One hundred seven 50.6% respondents leveled themselves as having high risk**.** Also among the respondents 25.5% had needle stick or other sharp injuries for Once 17.9% in their life time and 41.0% of them were encountered blood or body fluid splash to their eye or mouth. Majority of them 79.3% did not take any training related on how to report a needle stick injuries or other exposure.

Respondents in their age group younger ages less than 24 years 100.0% had a higher awareness than the older age group 55%. Work experience of HCPs with low work experience less than 5 years 85.3% had a higher awareness than those who had higher work experience more than 10 years 61.5%. About 38.5% of the respondents those with work experience more than 10 years were no awareness about HIV PEP.

In general, the finding of this study revealed that, out of total respondents, about 78.9% respondents had good level of awareness whereas 21.1% respondents had no awareness of PEP of HIV was concluded.

9-Recommendations

A formal training for all HCP regarding PEP for HIV should be provided to improve their knowledge. An adequate in-service training, including monitoring of procedures should be provided. Supportive staffs should also be involved in in-service trainings related to infection prevention. Attention should be paid to supportive staffs and paramedical to increase their awareness regarding the availability of PEP.

Health facilities should make available within their system standardized written protocol for infection prevention and reporting unit for management of occupational exposures so that health care personnel will know how and where to report is recommended so that utilization of PEP can be improved.

10-Reference

1. Federal Ministry of Health, Infection prevention and patient safety, Reference Manual for service providers and management in health care facilities of Ethiopia, Addis Ababa Ethiopia, February 2011.
2. Ali S., Andrew F. Prophylaxis of HIV infection, British Medical Bulletin Volume 108 Issue 1 December 2013 also available at ali.omrani@doctors.org.uk
3. Tadesse A. Assessment of Health Care Workers Occupational Exposure to HIV and Post-Exposure Prophylaxis (PEP) in Health Centers and Hospitals, Addis Ababa university school of public health Addis Ababa, Ethiopia July, 2008
4. David T. Kuhar, David K. Henderson, Kimberly A. Struble D. , Walid H., Vasavi T., Laura W. Cheever, ScM Ahmed G.,Adelisa L. Occupational Exposures to HIV and Recommendations for Post exposure Prophylaxis, the U.S. Public Health Service Working Group, Infection Control and Hospital Epidemiol... Vol. 34, No. 9, September 2013...
5. Ikram B., Ibtihal F., Amna M., Asma M., Emad S. Knowledge, Attitudes and Practices of Health Care Workers in Benghazi, Libya towards Post Exposure Prophylaxis for HIV, November 2013. Also available from: http://www.ijmbs.org
6. Demographic and Health Survey, Ethiopia Demographic and Health Survey , 2011
7. Alberta Guidelines for Non-Occupational, Occupational and Mandatory Testing and Disclosure Act Post-Exposure Management and Prophylaxis: HIV, Hepatitis B, Hepatitis C and Sexually Transmitted Infections, January 1, 2013
8. Pramod.T. A study on Assessment of level of Knowledge and Practice regarding Occupational Blood And Body Fluid Exposure among Staff Nurses in selected Hospital at Bangalore, Rajiv Gandhi University of health sciences, Karnataka, June 2010
9. Samuel Omondi O,Supattra S, and Bang-on T. :Awareness of occupational post-exposure prophylaxis HIV infection among health workers in Nyanza province , Kenya, Journal of public Heath and development Vol. 11 no 2 May- August 2013
10. Okechuku E. F. The knowledge and practice of standard precautions among health care workers in public secondary health facilities in Abuja, Nigeria University of South Africa, November 2009

11. Reshma R., Prithviraj D. R, Basavarajaiah D. M ,Vidyashankar N , Assessment of knowledge on post exposure prophylaxis in HIV among dental healthcare workers, Vol. 2, Issue 2, May 2013, 31-36 © IASET
12. Jennifer H., Jacqui R. Standard precautions and infection control, Infectious Diseases Physician, Alfred Hospital, Melbourne, Victoria. St Vincent's Hospital, Melbourne, Victoria,2008
13. Everline M., Zipporah N., Peter W., Jared O. Prevalence and factors associated with percutaneous injuries and splash exposures among health-care workers in a provincial hospital, Kenya, 2010
14. Biniam M., Wubet B., Sebesbe K., Meaza B., Gemechu T., Zelalem A.,Agersew A. Assessment of knowledge, attitude and practice towards post exposure prophylaxis for HIV among health care workers in Gondar, North West Ethiopia, *BMC Public Health* 2013, **13**:508 doi:10.1186/1471-2458-13-508
15. Bosena T., Chernet H. Assessment of HIV Post-Exposure Prophylaxis Use Among Health Workers of Governmental Health Institutions in Jimma Zone, Oromiya Region, Southwest Ethiopia, Ethiop J Health Sci. Vol. 20, No. 1 March 2010
16. Ibtissam S., Hala S., Sanaa S., Hussein A., and Nabil D.: Occupational exposures to blood and body fluids (BBF): Assessment of knowledge, attitude and practice among health care workers in general hospitals in Lebanon, Vol.5, No.1, 70-78 (2013) Health http://dx.doi.org/10.4236/health.2013.51010
17. Jayadevan S., Jayakumary M.,Manda V.Knowledge and practice of standard measures in occupational exposure to blood and body fluids among nurses in a University Hospital in the United Arab Emirates, Italian Journal of public health, JPH - Year 8, Volume 7, Number 1, 2010
18. Vijay N., Evy D., Nadine P. , Lorna A Ryan, Jennifer C., Andrew W. CD40mAb adjuvant induces a rapid antibody response that may be beneficial in post-exposure prophylaxis, Bhagawati-Prasadet al. Journal of Immune Based Therapies and Vaccines 2010,8:1 http://www.jibtherapies.com/content/8/1/1
19. Isaac I. MD, Eileen P. MD PhD, Kimon C. MD Antiretroviral medication for preventing HIV infection in non-occupational settings, CMAJ, 184(10) July 10, 2012,

20. Fast Facts National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention Division of HIV/AIDS Prevention, Occupational HIV Transmission and Prevention among Health Care Workers, February 2013, available as http://www.cdc.gov/hiv/ resources/ factsheets/
21. Benn M., Fisher M. and R Kulasegaram L.,on behalf of the BASHH§ PEPSE Guidelines Writing Group Clinical Effectiveness Group: UK guideline for the use of post-exposure prophylaxis forHIV following sexual exposure, International Journal of STD & AIDS, Volume 22 December 2011
22. Michelle E., Torsten B., Melissa R.,Thomas J. Coates, Karena F., Margaret A., Chesney., James S. Kahn., Jeffrey N. A Randomized No inferiority Trial of Standard Versus Enhanced Risk Reduction and Adherence Counseling for Individuals Receiving Post-Exposure Prophylaxis Following Sexual Exposures to HIV, CID:53 1 July 2011.
23. The support of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) through the U.S. Agency for International Development under contract number GHH-I-00-07-00059-00, AIDS Support and Technical Assistance Resources (AIDSTAR-One) Project, Sector I, Task Order 1; Improving infection prevention and control in Ethiopia through supportive supervision of health facilities October, 2012
24. EMI Guidelines: HIV Post-Exposure Prophylaxis (PEP), Adapted from BASHH UK Guideline for use of HIV PEPSE 2011.
25. Elizabeth H. and Philippa E. Occupational exposure to HIV and the use of post-exposure prophylaxis, Elizabeth Hamlyn, Caldecot Centre, Kings College Hospital, London SE5 9RS, UK. Tel: +44 787 066 5620; fax: +44 207 346 3486;email:elizabeth.hamlyn@kingsch.nhs.uk
26. Brian J. Blood-borne Pathogen Exposure and Post-Exposure Prophylaxis in Global Health Field Sites, UW Global Health Institute, April 2010
27. Shuvankar M., Agnihotri B., Biswanath S., Dipendra N. ,Goswami, S., Amrita S.: Knowledge and Practice of Standard Precautions and Awareness Regarding Post-Exposure Prophylaxis for HIV among Interns of a Medical College in West Bengal, India; Oman Medical Journal (2013) Vol. 28, No. 2:141-145 DOI 10. 5001/omj.2013.38; Received: 03 Dec 2012 / Accepted: 12 Feb 2013 © OMSB, 2013
28. Patricia A., Emmanuel I., Amaka N., Comfort A., Maxwell O., and Edith N. Awareness and Knowledge of human immunodeficiency virus post exposure prophylaxis among family Physicians, Original Article, Junuary 31, 2014, IP: 197.156.126.10.

11-Annex

Annex I Information Sheet and Consent Form: English Version

Information Sheet

Hello, how are you? My name is_____. This is an interview to be done with you for a study that is being conducted at Addis Ababa University, College of Health Sciences School of Allied Health, Department of Nursing and Midwifery.

The purpose of the study is to determine awareness health care personnel of post exposure prophylaxis against HIV infection and risk factors to expose to HIV infection due to their day to day activities.

We would like to ask you some questions that are related to health care personnel awareness about post exposure prophylaxis against HIV infection and the risk factors to expose to HIV infection due to day to day activities. We believe that the results of this study will assist policy makers, planners and health service providers for making considerations regarding occupational HIV risks and post-exposure prophylaxis. It will also help to contribute in the subsequent efforts to improve prevention, diagnosis, treatment and support of HIV/AIDS in relation to the occupational hazards.

Your contribution has a great input for the study and I would greatly appreciate your participation. There is no possible risk associated with participating in this study. Your name will not be written in the questionnaire and please be assured that all the information you give will be kept strictly confidential. Your participation is completely voluntary.

Therefore, you will not be obliged to answer any question that you do not want to and you may end this interview at any time you want to. There are also no obligations for not participating in the interview. The interview will take about few minutes.

If you have questions regarding this study or would like to be informed of the results after its completion, please do not hesitate to contact Ato Birhanu Alemu (0911910373)

Consent Form

I have read the information sheet concerning this study (or have understood the verbal explanation) and I understand what will be required of me and what will happen to me if I take part in it. I also understand that any time I may withdraw from this study without giving a reason and without me or my families' routine service utilization being affected for my refusal.

Participant's signature _____ Date_____

Interviewer signature certifying that the informed consent has been given verbally

Interview's name _____

Interview's signature _____ Date _____

May I continue the interview?

1. Yes _____Continue the interview
2. No _____Stop the interview and thank the respondent

Result: (to confirm for completeness)

A. Questionnaire completed _____
B. Questionnaire partially completed _____
C. Participant refused _____
D. Others (please Specify) _____

Checked by Supervisor:

Supervisor's Name _____

Supervisor's Signature _____

Date _____

Annex II. Information Sheet and Consent Form: Afan Oromifaa Version

Waraqaa odeeffannoo

Akkam jirtuu? Maqaan Kiyya _____jedhama. Kun gaafii qu'annoo yuunivarsiitii Addis Ababaa, kolleejota Saayinsii fayyatti gamtooman, kutaa Narsootaa fi Ogummaa Deessistuun kan qophayee gaafiif deebii siniin waliin adeemsisuudhaf.

Kaayyoo qu'annoo kanaa kunuunsa fayyaa hojjettotaa, hubannaa dhukkuba daddarbaa HIV ittin saaxilamuu booda qorichaa dhukkuba ittisu, dhukkuba daddarbaa HIV fi balaa ykn gaaga'ama sababii hojji isaaniitin saaxilamaa dhukkuba daddarbaa HIV tiin murteessuuf. Nuti gaaffii kunuunsa fayyaa hojjettotaa ilalchisee hubannaa dhukkuba daddarbaa HIV ittin saaxilamuu booda qorichaa dhukkuba ittisu fi balaa ykn gaaga'ama sababii hojji isaaniitin saaxilamaa dhukkuba daddarbaa HIV siingafannaa.

Bu'aa qu'annoo kan imaammata qopheessituu, karooraa, fi tajajiilaa fayyaa dhiheessitufii sababii hojji isaaniitin saaxilamaa dhukkuba daddarbaa HIV tiin fi dhukkuba daddarbaa HIV ittin saaxilamuu booda qorichaa dhukkuba ittisu, dhukkuba daddarbaa HIV ni qarqara jennee amanna. Itti dabaletis kara fundur'atti miidhaa sababii hojiitin saaxilamuu dhukkuba daddarbaa HIV, itti carraqqii fooyyesuu ittisaa godhamufi, addaan baasanii beekuu, waldhaanu fi qarqaarsaa godhamuf nigargaaraa.

Hirmaannaa keessan qu'annoo kanaf bu'aa guddaa kan qabu yoota'u hirmaannaa keessanif durran dursinee isin galateefanna. Qu'annoo kanarati hirmaachuu keessanin gaag'amni tokkolee isin irra hengwu. Maqaan keessenis waraqaa gaafii irrattii hinbarrawu; akkasumas odeffannoon siin nuuf kenniten iccitidhaan akka egaman waadaa isiniif galla. Hirmanan keessaan hunduu heeyyama kessaniiratti kanhunda'uudha. Kanaafu gaaffilee deebisuu hinbarbanee deebii keennuuf hin dirqamtan. Akkasumas hirmanaf dirqamni tokkolee hinjiru. Hirmaannaa yeroo barbaddameetti addaan kutanii dhiisuun nidanda'ma. Mamii tokkon alatti waa'ee Qu'annoo ilaachisee ykn bu'aa qu'annoo boodaa gaaffii gafachuuf bilbilaa 0911910373 Obbo Birhaanuu Alamuu jechudhan nu argachuu nidandeechuu.

Uunkaa waliigaltee

Qu'annoo kan ilalichisee waraqaa odeeffannoo duubbisi ykn jechii kanaaf dubifamee kannaf ibsamee kan nafgalee yoota'u fi waana ana irra barbadamu fi ween ta'uu qabu ifaa naaf ta'ee jira. Akkasumas akkan qu;annoo kan irra yeroo barbadamaf sababi tokkon alaa hafuu akkan danda'ufi anas ta'ee maatii koo iratti rakkoon tokko illee akkaa na irra hingeenye hubadhee jira.

Mallatoo hirmataa_____ Guyyaa _____
Gaafii dhiyessaa kan uunkaa waligaltee jeechaan mirkaneessee
Maqaa gaafataa _____
Mallatoo gaafataa _____ Date _____

Gaafii itti fufuu ?

3. Eeyyee _____ Gaafii itti fufuu
4. Lakki _____ Gaafii daabeetii deebii kanna galatfadhuu

Bu'aa: (xumuraa isaa mirkaneessuuf)

A. Gaafiilee xumuramani _____
B. Gaafiilee gartokeedhaan xumuraman _____
C. Diduu hirmatootaa _____
D. Kan biraa (maloo kan murteessaamee kayaa) _____

Sakatta'uu to'ataa:

Maqaa **t**o'ataa _____
Mallattoo to'ataa _____
Guyyaa _____

Annex III. Questionnaire (English version)

Addis Ababa University
College of Health Sciences School of Allied Health
Department of Nursing and Midwifery

Questionnaire

This question is designed to collect data related to Awareness of PEP against HIV Infection among health care personnel in Asella Teaching hospital.

Instruction: Circle the alternative of your chosen or write your answer in space provided.

Part I. Questions about basic Socio-demographic characteristics respondent.

NO	Questions	Response/Answers
101	Sex	1. Female 2. Male
102	Age	----------years
103	What is your Educational status?	1. 1-10 2. Preparatory complete 3. Certificate 4. Diploma 5. First Degree 6. Master 7. Specialist
104	What is your main job? /Your current technical qualification?	1. Physicians 2. Health officers 3. Nurses 4. Midwife 5. Laboratory 6. Pharmacy 7. Cleaner 8. Porters 9. Maintenance workers 10. Laundry workers 11. Others(specify)_____
105	Where are your working departments /units?	1. OPD 2. Wards 3. Theatre 4. Special clinic 5. Maternity 6. Others(specify)_____
106	How long have you been working in this hospital?	**----------years**

Part II: Questions related to Awareness of HCP about the risk of accidental occupational exposure to HIV infection

NO	Questions	Response/ Answers
201	Do you think that you are at risk of HIV infection?	1.Yes 0. No
202	Where you say that you are most likely to get infected with HIV, outside work or at work place?	1. Outside work 2. At work place 3. Same Risk in both places 4. Don't Know
203	How do you level your risk of HIV infection?	1. High risk 2. Low risk 3. No risk
204	Have you ever had any needle stick or other sharp injuries?	1. Yes 2. No
205	If yes for question 204, how many times have you had these injuries?	1. Once 2. Two times 3. More than two times 4. No injury at all
206	Have you ever had blood or body fluid splash to your eye or mouth?	1. Yes 2. No
207	Have you been trained on how to report a needle stick injuries or other exposures in the last one year?	1. Yes 2. No
208	Do you use universal precaution or wear personal protective equipments?	1. Yes, always 2. Yes, sometimes 3. No
209	Have you ever been exposure to occupational injuries?	1. Yes 2. No
210	Could you please describe it?	1. Accidental sharp items injury 2. Splash of blood & body fluids 3. Contact with blood & body fluids 4. I have no any exposure
211	Have you ever been tested because of your occupational exposure to HIV?	1. Yes 2. No because of no any exposure

Part III: Questions related to Awareness of HCP about post-exposure prophylaxis against HIV infection.

NO	Questions	Response/ Answers
301	Do you know the presence of prophylaxis to HIV after exposure to injury or blood and other body fluids?	1. Yes 2. No
302	Have you had any refresher training on HIV Post-exposure Prophylaxis (PEP)?	1. Yes 2. No
303	If you have had any pre-service or in-service training on PEP, when was that?	1. Past 01 year 2. Past 2-3 year 3. Before 3 years 4. No training
304	Have you seen any written guidelines/ protocols for PEP in this facility?	1. Yes 2. No 3. Don't Know
305	Have you seen any posters that remind for the availability of PEP in this facility?	1. Yes 2. No 3. Don't Know
306	Is PEP available for health care workers' use in this facility?	1. Yes, available here 2. Yes, available elsewhere 3. No, not available here or elsewhere 4. Don't Know
307	Have policies related to HIV at work places been communicated to staff at any time in the past?	1. Yes 2. No 3. Don't Know
308	Is there a PEP focal person in this facility?	1. Yes 2. No
309	Have you ever known the use of PEP in your life time?	1. Yes 2. No
310	Would you say that PEP is effective in protecting a staffs, which has had needle stick injury or any other exposure with an HIV positive patient?	1. Very effective 2. Somewhat effective 3. Not effective 4. Don't Know
311	What in your view would be the most successful way of increasing PEP up take at this facility? (Read the list and circle your response)	1. Have a counsellor available 2. Have someone to report the injury 3. Provide private way to have an HIV test 4. Provide more training for staff 5. Other (specify)

Part IV: Questions to measure the level of awareness of health care personnel about PEP against HIV.

No	Question	Response
401	Ever heard of HIV- PEP?	1. Yes 2. No
402	Is PEP presence in this hospital?	1. Yes 2. No
403	What is the use of PEP?	1. Prevent transmission of the virus 2. Prevent establishment of virus 3. Curing from the disease 4. Prolong the lives of the person 5. Do not know
404	When do the maximum time to start the first PEP?	1. 1 hour or less 2. Within 24 hours 3. Within 72 hours 4. After 3 days 5. Do not know
405	What is the duration of PEP?	1. Less than 1 week 2. 4 weeks 3. More than 4 weeks 4. Life long 5. Do not know

Annex IV Questionnaire (Afaan Oromoo version)

Yuunivarsiitii Aaddis Ababaa, kolleejii Saayinsii fayyatti kutaa Narsootaa fi Ogummaa Deessistuun

Gaaffiin kun kan qophaayef hojatoottaa kununasaa fayyaa; waa'ee dhukkuba daddarbaa HIV ittin saaxilamuniin booda qorichaa dhukkuba ittisu, dhukkuba daddarbaa HIV; hubanoo hojatootaa hospiitaal barumsaa Asalaa itti isaa qabanii raga sasabufi.

Qajeelfama: Deebii keessaan geengoo itti godhudhaan ykn idoo sinifii qophaayee irratti bareesudhan deebisaa

Kutaa I. Gaafilee bu'uraa gaafatamaa

Lakk.	Gaaffilee	Deebii
101	Saala	1. Dhalaa 2. Dhiira
102	Waggaa	Waggaa_____
103	Sadarkaa barumsaa	1. 1-10 2. Qophayeenaa kanxumuree 3. Sartifiikeet 4. Diiplomaa 5. Digrii duraa 6. Maastrii 7. Ispeeshaalistii
104	Hojii /ogummaa?	1. Hakimaa 2. Qondaala fayya 3. Narsii 4. Midwayifarii 5. Laabooratory 6. Faarmasii 7. Qulquleesitu 8. Portsri 9. Hojatoottaa Supha 10. Hojatoottaa lawndarii 11. Kan biroo(ibsi)_____
105	Daree hojii keessaan?	1. Daree OPD 2. Waardii 3. Daree opireeshinii 4. Kilinikaa adaa 5. Daree hadhootaa 6. Kan biroo(ibsi) _____
106	Erga hospitaala kana keesse hojjeechu qebdenii waggaa meeqa?	**Waggaa_____**

Kutaa II: Gaaffilee hubannoo hojjettoota kunuunse fayyaa waa'ee dhukkuba daddarbaa HIV tasaa saaxilamuu ilaala.

Lakk.	Gaaffilee	Deebii
201	Dhukkuba daddarbaa HIV nisaaxilamaa jettanii niyaaddu?	1. Eeyyee 2. Miti (lakkii)
202	Eessetti Dhukkuba daddarbaa HIV tiif saaxilamaa jettanii niiyaddu, iddoo hojiiti moo hojiin ala ?	1. Hojiin ala 2. iddoo hojiitti 3. iddoo lachutuu walfakataa 4. Hinbeeku
203	Sederkaa saaxilamuu keessaanii akkamitti hakkamiitii shallagdu?	1. Baaay'ee guddaa 2. Xiiqqaadha 3. Balee hinqabu
204	Limmoofi meeshaa qara qabaniif saaxilamtanii beektuu?	1. Eeyyee 2. Miti(lakkii)
205	Yoo gaafii 204 eyyee jeettan, yeroo hangamiif saaxilamtanii beektuu?	1. Yeroo tokko 2. Yeroo lama 3. Yeroo lama ol 4. Hinsaaxilamani
206	Dhegiin ykn dhangaloo qaamaa ija ykn afa'an keesaanitti facaa'ee beekaa?	1. Eeyyee 2. Miti(lakkii)
207	Tasa limoon waaranamuu ykn balee tasa dhalatu akkamitti gaabastan leenjitenii jirtuu?	1. Eeyyee 2. Miti(lakkii)
208	Ittisa waligala fi Meeshaalee of eeggaanoo nifayadamtuu?	1. Eyyee, yeroo hundaa 2. Eyyee, yeroo tokko tokko 3. Hinfayadamu
209	Dhukuba daddarbaa HIV itin tasa saaxilamtanii nibeekktuu?	1. Eeyyee 2. Miti(lakkii)
210	Saaxilamuu keesaan ibsaa?	1. Tasa meesha qara qabun waranamuu 2. Diiigaa fi dhagala'oon qaamaa faca'uu 3. Diiigaa fi dhagala'oon qaamaa wal-tuquu 4. Saaxilamuun hinjiruu
211	Saababii saaxilamuu keessanif qoramtanii nibeektuu?	1. Eeyyee 2. Hinqoramtanii sababii wan hinsaaxilamanif

Kutaa III: Gaaffilee hubannoo hojjetoota kunuunsa fayyaa waa'ee dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii jiruu ilaaala

Lakk.	Gaaffilee	Deebii
301	Yaaliin balaa tasaa dhukkuba HI,dhiigaafi dhangala'oo qaaman wal-tuquun booda jiraachuu isaa ni beektuu?	1. Eeyyee 2. Miti(lakkii)
302	Dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii jiru irrtti leenjii haaroomsuu argatanii?	1. Eeyyee 2. Miti(lakkii)
303	Yoo iddoo hojiti ykn hojii allatti leenjii fudhatan; yoomii fudhattan?	1. Waggaa 01 boodaa 2. Waggaa 2-3 darban keesa 3. Wagaa3 duraa 4. Leenjii fudhatan
304	Dhukuba daddarbaa HIV tasa saaxilamuu boodaa yaalii jiruu barrefama ykn qajeelcha ykn protokolee argitee jiraa?	1. Eeyyee 2. Miti(lakkii) 3. Hinbeeku
305	Dhukuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii jiruu poostaarii hubachisuu argamaa ykn jiraa?	1. Eeyyee 2. Miti(lakkii) 3. Hinbeeku
306	Dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii hojjatotaa kunusitota fayyaa kennmuu jira?	1. Eeyyee, asitti niargama 2. Eeyyee, idoo biratti niargama 3. Lakkii , asittis iddoo birattis hinargamu 4. Hinbeeku
307	Waggaa darbee keesatii Imamatini fi wal qunnamtii Dhukuba daddarbaa HIV ilaalchisee hojii fi hojjattota walinii nijira?	1. Eeyyee 2. Miti(lakkii) 3. Hinbeeku
308	Dhukuba daddarbaa HIV tasa saaxilamuu boodaa yaalii jiiruf namin xiyyeefaono nijiraa?	1. Eeyyee 2. Miti(lakkii)
309	Jireenya kee kessatti ega balaan tasaa HIV tasaa saaxilamunii booda yaalii beekta?	1. Eeyyee 2. Miti(lakkii)
310	Dhukuba daddarbaa HIV tasaa saaxilamuu boodaa yaaliin godhamuu hojattotaa ni ittisaa ?	1. Baaay'ee ittisa 2. Gartokkeen ittisaa 3. Hin ittisuu ykn hinfayadu 4. Hinbeeku
311	Karaan tajaajilaa dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii ittin guddatu maalin? (tartibaa jirani dubisiti fil'ano keesaan geengoo itti godhi.)	1. Gorsaa kannituu qopheessuu 2. Nama gabasaa godhu qopheessuu 3. Iddoo qoranoo iccitii qopheessuu 4. Hojjatota baayisanii leenjisuu 5. Kan biroo (ibsi)_____

Kutaa IV: Gaaffilee hojjetotta kunuunsa fayyaa waa'ee dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii jiruu hangaam hubanoo isanii safaruuf

Lakk.	Gaaffilee	Deebii
401	Yoomillee hata'u dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii jiruu ni beektuu?	1. Eeyyee 2. Miti(lakkii)
402	Hospitaa kana kesaatii dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaaliin jiraa?	1. Eeyyee 2. Miti(lakkii)
403	Fayyidaan dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaaliin maaliin?	1. Tamsaassa vaayirsi Ittisu 2. Hundaa'uu vaayirsi Ittisu 3. Dhukkuba irra Fayyisuu 4. Lubbuu nama dheereesuu 5. Hinbeeku
404	Yeroon inni ol'aanaa dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaaliin yoom calqabamaa?	1. Sa'a 1 ykn gadii 2. Sa'atii 24 keessati 3. Sa'atii 72 keessati 4. Guyyaa 3 ni booda 5. Hinbeeku
405	Dhukkuba daddarbaa HIV tasaa saaxilamuu boodaa yaalii jiruu hagaam turaa?	6. Torban tokkoo gadii 7. Torban 4 8. Torban 4 oli 9. Umurii guutuu 10. Hinbeeku

Annex V Assurance of principal investigator

Declaration:

I, the undersigned, declare that this is my original work and has not been presented in this or any other University and all sources of materials used for this study have been fully acknowledged.

Name: Birhanu Alemu

Signature: _____

Date: _____

Place: Addis Ababa University, College of Health Sciences,

Department of Nursing and midwifery

Advisor

Mr. Asrat Demissie (Ast. Professor)

Signature: _____

Date: _____

Place: Addis Ababa University, College of Health Sciences,

Department of Nursing and midwifery