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COLLAGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF INFECTION PREVENTION PRACTICE AND ASSOCIATED FACTORS AMONG HEALTH PROFASSIONALS IN TIKUR ANBESSA SEPECALIZED HOSPITAL, ADDIS ABABA.

BY

ABEBE ANTENEH ENYEW (BSC)

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Approval by the Examining Board

This thesis by **ABEBE ANTENEH ENYEW** is accepted in its Present form by the board of examiners as satisfying thesis requirement for Degree of Masters of General public health.

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ACRONYMS/ABBREVIATIONS

AA	Addis Ababa
BSC	Bachelor of Science
CDC	Centre for Disease Control
ETB	Ethiopian Birr
HAI	Health care Associated Infection
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HPs	Health professionals
HIV	Human Immunodeficiency Virus
IP	Infection Prevention
OR	Odds Ratio
PEP	Post exposure prophylaxis
PPE	Personal Protective Equipment
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
TASH	Tikur Anbessa Specialized Hospital
WHO	World Health Organization

Abstract

Introduction: Hospital Acquired Infections are a major global safety concern for patients, healthcare professionals and the community. Health care workers had potentially exposed to infectious materials such as blood, tissue, specific body fluids, medical supplies, equipment or environmental surfaces contaminated with these substances.

Objective: The objective of this study was to assess infection prevention practices among health professionals and associated factors in Tikur Anbessa Specialized Hospital, 2019.

Methods: A cross-sectional study was conducted at Tikur Anbessa Specialized Hospital from March to April 2019. The study populations were Health care professionals selected using simple random sampling. Data was collected using self-administered questionnaire supplemented by observation. Data was entered in to Epi version 7.2.1 and exported to SPSS version 22 for further analysis. Logistic regression analysis was used to identify factors associated to with infection prevention practices. Findings were presented using odds ratio with 95% confidence intervals. A P-value less than 0.05 was used to declare statistical significance.

Results: 396(94.5%) Health care professionals participated in the study. The mean age of participants was 28.54 years, and 188 (47.5%) were males and 208(52.5%) were females. 305(77%) of health care professionals are knowledgeable and 281(71%) of the respondents were found to be positive attitude towards infection prevention. 230(53.8%, (95%CI: 49.0-58.1)) had good infection prevention practices. Having good knowledge on infection prevention measures (AOR =3.66, 95%CI:(2.005,6.704)), having infection prevention guidelines on infection prevention practices (AOR=1.926, 95%CI:(1.148,3.230)) and average working hours per week (AOR=1.866, 95%CI: (1.037,3.356)) were predictors of infection prevention practices.

Conclusion: The results of the study show that half of (53.8%) HCPs had good infection prevention practices. Having good knowledge, availability of infection prevention guideline and average working hour per week of health professionals are predictors of good infection prevention practices. As a result, to sustain and improve good infection prevention practices, adequate pre-service as well as on job trainings should be given and accessing infection prevention guidelines in each department.

Key words: Infection, infection prevention, health professionals, standard pre questions, practice, nosocomial infection etc.

1. Introduction

1.1 Background

Infection prevention refers to policies and procedures used to minimize the risk of spreading infection, especially in hospitals (nosocomial infection) and human health care facilities. Nosocomial infections or Hospital Acquired Infections are a major global safety concern for patients, healthcare professionals and the community (1). Health care workers (HCWs) are potentially exposed to infectious materials such as blood, tissue, specific body fluids, medical supplies, equipment or environmental surfaces contaminated with these substances (1,2).

Infection Prevention is assisting health professionals and patients in reducing dissemination of infections associated with healthcare, by assisting with the assessment, planning, implementation and evaluation of infection control policies. It also depends on placing protective barriers (physical, chemical, or mechanical) between a susceptible host and the organisms (2,3).

Nosocomial infections affect the quality of health care and a principal source of adverse healthcare outcomes and also it has serious impact. Increased hospital stay days, increased costs of healthcare, economic hardship to patients and their families and even deaths, are among the many negative outcomes. The transmission frequently occurs during the performance of medical procedures, when these healthcare workers fail to follow standard precautions (1).

The burden of nosocomial infections has been seen to be substantial in developed countries where it affects 5-15% of hospitalized patients in regular wards and in as many as 50% or more in intensive care units. WHO estimated that the risk of health care-associated infection is 2 to 20 times higher in developing countries compared to developed countries and 5% and 10% of patients admitted to hospitals in developed countries acquire these infections (1,4).

Among the 35 million health care workers worldwide, more than 3 million experience percutaneous exposures to blood borne viruses each year (2 million HBV; 900,000 HCV and 300,000 HIV). These injuries are estimated to result in 66,000 hepatitis BV; 16,000 hepatitis CV and 2000 to 5000 HIV infection. More than 90% of these infections are occurring in low-income countries, and most are preventable (2).

1.2 Statement of the problem

Hospital Acquired Infections are common healthcare problems of both developed and developing countries although there is big disparity of share of the burden (5).

Many factors promote infection among hospitalized patients – decreased immunity among patients; increasing variety of medical procedures and invasive techniques creating potential routes of infection; and the transmission of drug-resistant bacteria among crowded hospital populations, where poor infection control practices may facilitate transmission. Despite progress in public health and hospital care, infections continue to develop in hospitalized patients, and also affect hospital staff (6).

Globally, a significant proportion of healthcare providers and patients/clients acquire nosocomial infections. The situation tends to persist causing a real threat to healthcare providers and community at large and at times demand additional cost to the patient in particular and the healthcare system in general. Furthermore, with an inadequate practice of infection prevention and patient safety, healthcare providers and patients would be at an increased risk of acquiring most serious infections like HIV, HBV, HCV, multidrug-resistant TB & other emerging and re-emerging bacterial or viral infections. (5)

Healthcare associated infections are a significant public health concern. Despite being largely preventable, these infections are a significant contributor to patient mortality and morbidity, and are expensive to healthcare systems. It is estimated that up to 70% of some types of HAIs are preventable through improved infection control practices among healthcare providers (7).

The incidence of Hospital Acquired Infections in developing countries is approximately five times higher than international standards (8).In developing countries, mostly African countries the magnitude of the problem is high due to overcrowding and understaffing in hospitals. This leads to inadequate infection control practices. Lack of infection control policies, guidelines and trained professionals also add to the extent of the problem (4).

Despite a significant improvement in facility of health institutions and in the number and kind of health task forces in Ethiopia particularly in the last two decades, the burden is expected to be high (5). A

study done in Bahir Dar shows that 54.2% of the health professionals had safe infection prevention practice (9).

Tikur Anbessa Specialized Hospital the largest university based teaching hospital that serve as a referral centre for hospitals all over the country so this may have effect on health professionals' infection prevention practice.

Minimal data is available on the prevalence of infections prevention practice among health professionals in Ethiopian hospitals (10).

1.3 Rationale of the study

A hospital is one of the most likely places for acquiring an infection because it harbours a high population of micro-organisms, some of which are resistant to certain antibiotics, which may lead to hospital acquired infections. Health professionals are likely to be at risk due to the nature of their occupation, since they may expose to infection while on routine duty. Infection prevention is critically important to effective provision and management of heath care services

In Ethiopia, where many health care settings are resource constrained, the control of the risk of acquiring nosocomial infections is a bit challenging. Because, for the control measure or practice to kick into action, material, human power, training, policy, and guideline would certainly be necessary. Infection prevention and patient safety in healthcare settings is therefore, a broad and cross-cutting component of healthcare which involves every aspect of patient care, healthcare waste management and a lot others (11).

This study will to intervene and get insights about the problem of infection prevention practices and factors affecting infection prevention practices, there by finding an appropriate solution for the IP practices of the health professionals. This is a good basis for designing and implementation of effective Interventions for sustaining the observed positive behaviours and sealing the identified Performance gaps among health professionals in Tikur Anbessa Specialized Hospital.

1.4 Significance of the study

Infection Prevention and Control programmes have been shown to result in significant cost savings to healthcare systems. Despite the increases of highly contagious infections, infection prevention practices among healthcare workers are unknown in many developing countries especially in Ethiopia.

Identifying existing infection practices among health care workers and associated factors a key step in developing and implementing a successful infection control program. This study will be designed to assess the practice of infection prevention among HCWs, and to have a better understanding of the possible areas for improving infection prevention strategies and practices in Tikur Anbessa Specialized Hospital.

This study also provides baseline information on practice of infection prevention and associated factors among health workers in Tikur Anbessa Specialized Hospital**.**

2. Literature review

2.1 overview of infection prevention

Infection Prevention is a systematic effort or process of placing barriers between a susceptible host (person lacking effective natural or acquired protection) and the microorganism (5)

Infection prevention targeting a quality standard of patient's care and is essential for the wellbeing of the patients and the safety of both patients and staff to accomplish a reduction in infection rates. The transmission of blood borne viruses and other microbial pathogens to patients during routine health care procedures continues to occur because of the use of unsafe and improper procedures as injection, infusion, and medication practices by health care professionals in various clinical settings (12).

Health care professionals are constantly exposed to microorganisms. Health care-associated infections have long been recognized as crucial factors bothering the quality and outcomes of health care delivery. Health care-associated infections are important cause of adverse health outcomes such as morbidity, mortality, and increased health care costs with possible attendant litigations. An infection is considered nosocomial if it becomes evident 48 hours or more after hospital admission or within 30 days of discharge following inpatient care (1).

Transmission of infections in health care facilities can be prevented and controlled through the application of basic infection control precautions which can be grouped into standard precautions, which must be applied to all patients at all times, regardless of diagnosis or infectious status, and additional transmission-based precautions which are specific to modes of transmission(airborne, droplet and contact) (3).

Infection control practices, such as hand washing and use of gloves and gowns, have proven to be effective Because many nosocomial infections result from cross transmission, primarily via the hands of health care workers (HCWs), hand washing remains the single most important means to prevent the transmission of nosocomial pathogens (13).

2.2 Magnitude of hospital acquired infections

Nosocomial infection rates range from 1% in Europe and America to more than 40% in some parts of Asia, Latin America and Sub-Saharan Africa The most frequent nosocomial infections occurring in developing countries are Surgical Site Infections (SSI), urinary tract infections and lower respiratory tract infections such as pneumonia (14).

At any one time, up to 7% of patients in developed and 10% in developing countries will acquire at least one HAI. These infections also present a significant economic burden at the societal level. However, a large percentage of HAI are preventable through effective infection prevention and control (IPC) measures (15).

2.3 Socio demographic characteristics

The socio-demographic characteristics include factors like age, sex, marital status, service year or experience working place, job title and income.

A study done in India shows that there is significant association between age and years of experience and the level of infection control practices among nurses (16). Study done in India on Assessment of knowledge, attitudes, and practices towards infection prevention among healthcare workers shows that There is no significance between age, gender, educational status and work experience, and their knowledge (17)

A study done in mekelle shows that young health care workers had a good practice when comparing with those older age. The odd of good practice among male likely to be reduced by 50% than female. The study found that when compared to laboratory technician, doctors and nurses had 80% and 70% reduce odd of good practice respectively (18).

A study done on Knowledge and Practice of Nursing Staff towards Infection Control Measures in the Palestinian Hospitals shows there is Significant statistical differences were found in mean practice

scores in relation to gender. Nurses are often exposed to various infections during the course of carrying out their nursing activities (1).

A study done on Bahir Dar shows that working experience greater than 10years have positive association with infection prevention among health professionals (9).

2.4 Components of infection prevention

Infection prevention and control is a key component of practice for all healthcare professionals, not only for their health but also to reduce nosocomial infections and thus improve patient safety. Healthcare workers are at increased risk of occupationally acquired infections transmitted from both blood-borne pathogens, such as hepatitis B and C and human immunodeficiency virus as well as respiratory pathogens, such as influenza, tuberculosis, diphtheria and varicella (19).

Treating all patients in the health care facility with the same basic level of standard precautions involves work practices that are essential to provide a high level of protection to patients, health care workers and visitors. These include the following: Hand washing and antisepsis (hand hygiene), Use of personal protective equipment when handling blood, body substances, excretions and secretions; Appropriate handling of patient care equipment and soiled linen; Prevention of needle stick/sharp injuries; Environmental cleaning and spills-management; and Appropriate handling of waste.

Five infection prevention and control domains have been identified as critical for outpatient safety by WHO. These are (i) hand hygiene; (ii) use of protective gloves; (iii) injection and blood sampling safety; (iv) disinfection of reusable equipment; and (v) waste segregation (12).

2.4.1 Hand hygiene

Hand hygiene is a general term referring to any action of hand cleansing. It includes care of hands, nails and skin. Among various hygienic practices of the hands, the use of soap and water when hands are visibly soiled remains the commonest and most important. For hands which are free of dirt or debris, however, alternatives such as antiseptic hand-rubs which are faster to act, cheaper and easier to use,

are increasingly gaining acceptance especially in setups where access to sinks and clean water is limited (11).

Appropriate hand hygiene can minimize micro-organisms acquired on the hands during daily duties and when there is contact with blood, body fluids, secretions, excretions and known and unknown contaminated equipment or surfaces. Failure to perform appropriate hand hygiene is considered to be the leading cause of nosocomial infections and the spread of multi resistant microorganisms, and has been recognized as a significant contributor to outbreaks (3,20).

WHO 5 Moments for Hand hygiene includes before touching the patient, before clean/aseptic procedure, after body fluid exposure risk, after touching the patient and after touching body surroundings (21).

Hand hygiene can be achieved by rubbing hands with 70-80% alcohol-based formulation or washing hands with soap and water. Do not wear artificial fingernails or extenders, rings or other jewellery when having direct contact with patients (22).

A cross-sectional study done in Jordan shows that 78·9% of nurses reported that they always wash their hands before and after giving care to patients, and 63·2% reported that they always wash their hands before and after using gloves (8).

A cross-sectional study conducted among nurses and physicians providing direct patient care in four hospitals in Hong Kong on perceptions of the importance and impact of health care associated infections and hand hygiene. Among respondents a total of 60% of the nurses and 46% of the physicians acknowledged that over 75% of healthcare-associated infections can be prevented by hand hygiene (1).

Alcohol based hand rubs do not remove soil or organic nature/materials. For better effects, therefore, hand washing with soap and water should be done first if hands are visibly soiled or contaminated with blood or body fluids. Besides, it is recommended that the washing should be done every 5 to 10 applications so as to reduce the “build up” of emollients on hands after repeated use of alcohol-based

hand rubs. Finally, hand rubs containing alcohol only as the active ingredient, have limited residual effect (11).

2.4.2 Personal protective equipment

Using personal protective equipment provides a physical barrier between micro-organisms and the wearer. It offers protection by helping to prevent micro-organisms from contaminating hands, eyes, clothing, hair and shoes; Personal protective equipment includes: gloves; protective eye wear (goggles); mask; apron; gown; boots/shoe covers; and cap/hair cover.
Handle patient care equipment soiled with blood, body fluids secretions or excretions with care in order to prevent exposure to skin and mucous membranes, clothing and the environment. Ensure all reusable equipment is cleaned and reprocessed appropriately before being used on another patient (19).

Across-sectional study done in Trinidad and Tobago shows that 132**(**44%) of health workers had good practices, while 168 (56%) of health workers did not have good practice (17).

Personal protective equipment reduces but does not completely eliminate the risk of acquiring an infection. It is important that it is used effectively, correctly, and at all times where contact with blood and body fluids of patients may occur. Continuous availability of personal protective equipment and adequate training for its proper use are essential (3).

Personal protective equipment should be chosen according to the risk of exposure. The health care worker should assess whether they are at risk of exposure to blood, body fluids, excretions or secretions and choose their items of personal protective equipment according to this risk and Avoid any contact between contaminated (used) personal protective equipment and surfaces, clothing or people outside the patient care area (3).

2.4.3 Safe injection

Safe injection is an integral component of infection prevention and control and does not harm the recipient, expose the provider to any avoidable risk and result in any waste that is dangerous to the community(11).

WHO estimates that in developing and transitional member States, 16 billion healthcare injections are administered each year i.e. an average of 3.4 injections per person yearly. Concurrently, it is also estimated that at least 50 % of all injections are unsafe (11).

A cross-sectional study done in Jordan shows that about one fourth (23·5%) reported that they always perform needle recapping, and less than one third (29·6%) reported that they always use eye protection when required. Nurses who reported that they were trained about IC guidelines in their hospital scored higher on the IC practice than nurses who reported that they received no IC training in the hospital (8).

The World Health Organization (WHO) estimates that 16 billion injections are administered annually in developing countries of which 90-95% is for therapeutic purpose. Approximately 5% of HIV, 40% of Hepatitis C and 32% of Hepatitis B virus infections are caused by unsafe and unnecessary injections worldwide (23).

The study done in India shows that the commonest clinical activity to cause the NSI was blood withdrawal (55%), followed by suturing (20.3%) and vaccination (11.7%). The practice of recapping needles after use was still prevalent among HCWs (66.3%). Some HCWs also revealed that they bent the needles before discarding (11.4%) (24).

2.4.4 Waste management

Hospital waste is a potential reservoir of pathogenic micro-organisms and requires appropriate, safe and reliable handling. The main risk associated with infection is sharps contaminated with blood. Steps in the management of hospital waste include: generation, segregation/separation, collection, transportation, storage, treatment, final disposal (3).

Safe management of Healthcare Waste is a key issue to control and reduce HAIs in healthcare facilities and to ensure that the environment outside is well protected. Healthcare Waste Management should be part of the overall management system of a HCF and reflect the quality of the services provided by the facilities (5)

Most wastes (80% to 85%) generated from Health Care Facilities can be treated as regular solid municipal wastes due to the fact that it is believed to be non-infectious and risk-free. About 15% to 20% of these wastes from Health Care Facilities, however, can be dangerous and require special attention. These ones are referred as 'risk waste' of which 1% of risk waste is sharps waste. The commonest risky waste in HCFs includes sharps and other wastes which are pathological, biological, chemical and pharmaceutical. In the absence of waste segregation, however, all wastes generated in HCFs can be considered as infectious and hazardous (5)

Principles of waste management includes Segregate clinical (infectious) waste from non-clinical waste in dedicated containers, Transport waste in a dedicated trolley, Store waste in specified areas with restricted access and Collect and store sharps in sharps containers. Sharps containers should be made of plastic or metal and have a lid that can be closed (3).

Segregation of medical wastes according to the category

1. Non-infectious waste (black bin)(paper, packaging materials and food.)
2. Infectious waste (yellow bin) (Dressing ,Gauze, Gloves and IV fluid)
3. Sharp wastes. needles or syringes, scalpels, blades and broken glass
4. Highly infectious wastes (red bin) (blood bag, extracted teeth, used test tubes and anatomical wastes e.g. placenta)

2.5 Factors affecting infection prevention practices

A cross-sectional study in Maluti Adventist Hospital in the Berea District of Lesotho, (36.4%) health workers reported poor infection control practices, with the majority of inappropriate practices being the administrative infection controls (25)

A cross-section study done at Bindura Provincial Hospital, Zimbabwe Utilization of the infection control manual was poor as 21 (42%) nurses did not utilize the infection control manual, either because they did not know about it 12 (24%) or it was not available 9 (18%). Infection control workshops were poorly organized as 68% of the nurses did not attend any workshop on IPC which contributed to poor IPC practice. Other factors impeding infection control were lack of time and resources (4)

A cross-sectional study on Assessment of knowledge and practice of health workers towards tuberculosis infection control and associated factors in public health facilities of Addis Ababa, Ethiopia: shows that Health workers who have more than six year working experience in health facility are two times more likely be knowledgeable compared to those who had less than three-year experience (AOR = 1.97; 95% CI:1.10, 3.5). This study shows that health worker who had first degree and above were 1.49 times more knowledgeable compared to diploma level (26).

A cross-sectional study on awareness and practice of infection control amongst doctors and nurses in two ICUS of a tertiary care hospital in delhi showed that although there was a high level of awareness of hospital-acquired infection control measures amongst doctors (79.81%) and nurse (79.55%); infection control practices were found to be lower amongst them, 70.43 per cent for doctors and 63.86 per cent for nurses (6).

A cross-sectional study done in South India shows that Hand rub (95%) and gloves (77%), reported use of protective eye gear and outer protective clothing was very low (22 and 28%, resp.). Despite a perceived risk of exposure to blood-borne infections, 8% of the HCWs had not completed the hepatitis B vaccination schedule. About 17% reported at least one needle stick injury in the past year but only 5.6% received medical attention (27).

A cross sectional study done in Zimbabwe shows that Fifteen percent (15%) of hospital admissions acquire nosocomial infection and the susceptibility to infection has been associated with the use of invasive devices and negligent infection control practice which contribute to the necessity of implementing control measures. 12(24%) of the respondents indicated lack of knowledge as a factor that impeded them from proper infection control practice, 13(26%) indicated lack of time, 8(16%) indicated lack of equipment, 5(10%) indicated forgetfulness as a factor and 12(24%) indicated lack of resources as a factor impeding them (4).

An Infection Control Committee provides a forum for multidisciplinary input and cooperation, and information sharing. This committee should include wide representation from relevant programmes: e.g. management, physicians, other health care workers, clinical microbiology, pharmacy, central supply, maintenance, housekeeping, training services. The committee must have a reporting relationship directly to either administration or the medical staff to promote programme visibility and effectiveness (28).

Above all the literature focuses on selected health professionals such as physician, midwives, nurses and laboratory professionals. There are different components of Infection prevention practices and the literature focuses on selected components like hand hygiene practice. Personal protective equipment, safe injection, waste management Etc.

Synthesis of the Review

Health care-associated infections have long been recognized as crucial factors bothering the quality and outcomes of health care delivery. Health care-associated infections are important cause of adverse health outcomes such as morbidity, mortality.

Hand hygiene, use of protective gloves, injection and blood sampling safety, disinfection of reusable equipment; and waste segregation are critical for infection prevention.

Conceptual framework

The conceptual framework is adapted from different literatures. It showed that factors such as, socio-demographic, availability of supply, knowledge and organizational factors to assess infection prevention practices and associated factors among health care professionals. In this frame work, Infection Prevention guideline, knowledge and average working hours affects the infection prevention practices.

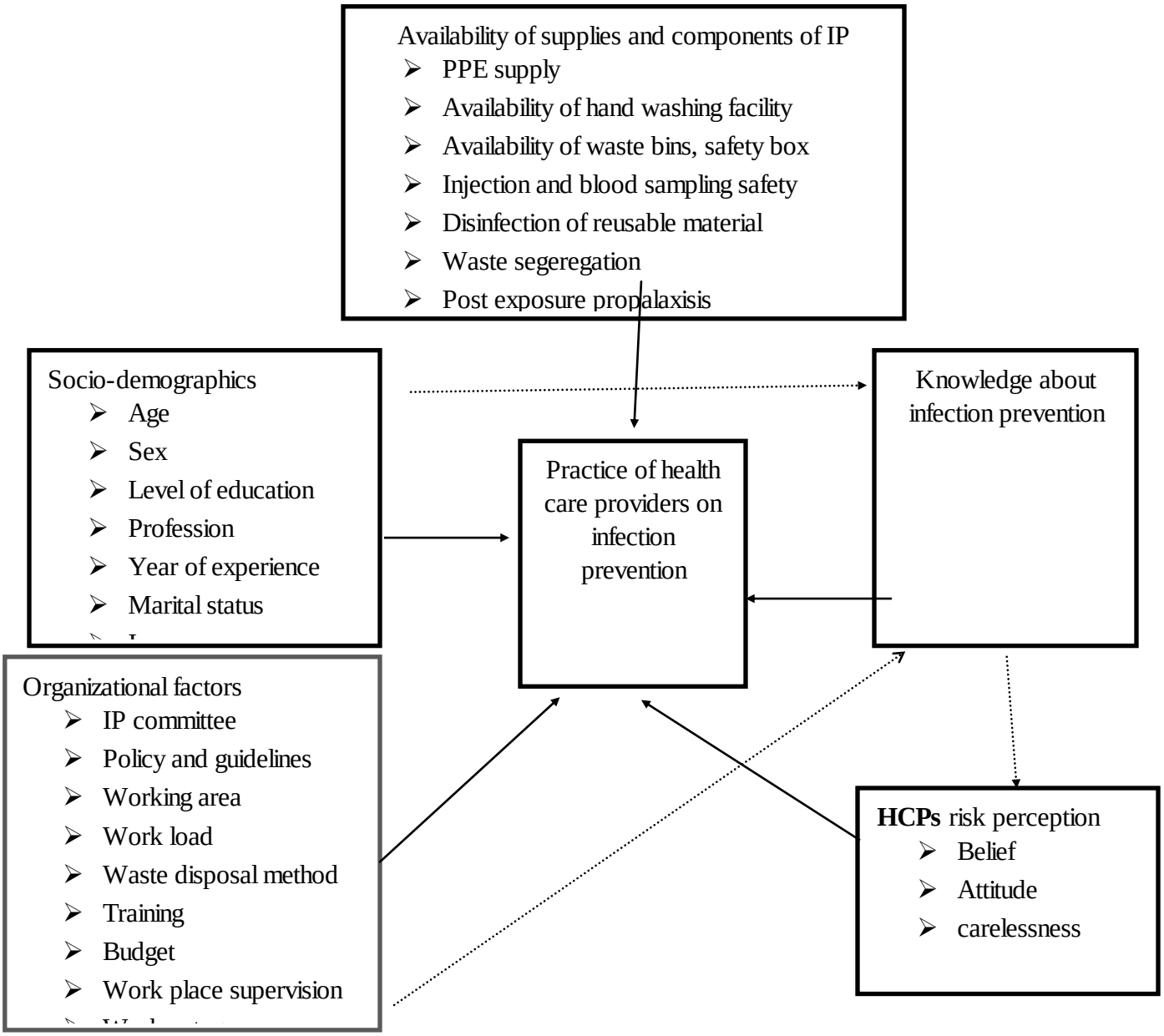

Figure 1: conceptual framework showing the factors affecting the Practice of infection prevention among health professionals in health care facilities adopted from literature.

3. Objectives

3.1 General Objective:

- ✓ To assess infection prevention practices among health professionals and associated factors in Tikur Anbessa Specialized Hospital, Addis Ababa, 2018/19

3.2 Specific objectives:

- ✓ To assess infection prevention practices among health professionals in Tikur Anbessa Specialized Hospital.
- ✓ To identify factors associated with **infection prevention practices** among health professionals in Tikur Anbessa Specialized Hospital.

4. Methods

4.1 Study design and period

An institutional based cross-sectional study was conducted from March to April 2019 to assess infection prevention practice and associated factors among health professionals in Tikur Abessa Specialized Hospital, Addis Ababa. Tikur Anbessa Specialized Hospital is the largest University based teaching hospital that serves as referral centre for hospitals all over the country.

4.2 Study area

The study was conducted in Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia from March to April 2019**.** Tikur Anbessa Specialized Hospital is the largest referral hospital in the country, with 700 beds, with large flow of patients from all over the country including from other referral hospitals and the main teaching hospital for both clinical and preclinical training of most disciplines. It is also an institution where specialized clinical services that are not available in other public or private institutions are rendered to the whole nation. It also has 265 physicians, 887 nurses, 70 midwife and 53 laboratory professionals dedicated to providing health care services.

4.3 Source and study population:

The **source populations** are all health care professionals (physician, midwife, nurse and laboratory professionals) working in Tikur Anbessa Specialized Hospital.

The **study populations** are health care professionals (physician, midwife, nurse and laboratory professionals) working in Tikur Anbessa Specialized Hospital who worked permanently for at least one year.

Inclusion Criteria:

Healthcare providers those who were providing health care service at Tikur Anbessa specialized hospital including physicians, nurses, midwives and laboratory professionals who have direct patient care or specimen contact in the study area were included.

Exclusion Criteria:

Health care professionals who are on annual leave, maternity leave during data collection was excluded from the study.

4.4 Sample size

Sample size for the first specific objective

Sample size was determined by single proportion formula by considering proportion of practices of infection prevention method 54.2%, from the study conducted in Bahidar City Administration, 95% CI and 5% of marginal error (9).

Sample size estimate using the following assumption

$$n = \frac{(Z_{\alpha/2})^2 * P(1-P)}{d^2} = \frac{(1.96)^2 * (0.542 * 0.458)}{(0.05)^2}$$

n= 381

Where, n = minimum sample size

Zα/2= Z value at (α = 0.05) = 1.96

d = Margin of error (0.05)

-Adding 10 % non-response rate, the final sample size is **419**

Sample size for the second specific objective

Sample size for specific objective two.

Factors	CI	Power (1-β)	Ratio	Proportion of outcome among unexposed	Proportion of outcome among exposed	OR	Sample size	
							n	Sample size including 10% NR
Written material availability (18)	95%	80%	1:1	29.9%	50.3%	2.4	188	207
Availability of PPE (18)	95%	80%	1:1	59.67	15.9	0.12	46	51

Double population proportion formula

$$n1 = \frac{\left[Z\frac{\alpha}{2} \sqrt{\left(1+\frac{1}{r}\right)P(1-P)} + Z\beta\sqrt{P1(1-p1)+\frac{p2(1-p2)}{r}} \right]2}{(P1-P2)2}$$

Sample size for the second specific objective was calculated by using EPIINFO version7.2.1 with the following assumptions:

Confidence interval = 95%

Power of test = 80%

Ratio (Exposed: unexposed) = 1:1

By considering Availability of Written material (guidelines) as factor

Outcome in unexposed group = 29.9% (18)

Out come in exposed group = 50.3 (18)

Using EPI INFO version7.2.1 we get **188**

Adding 10% non-response rate we get **207.**

Therefore, the sample size has been:

n **=207**

The decision made by comparing the sample size in the first objective and second objective.

The first objective yields the largest sample size which is 419, so, it is representative for both objectives. Therefore, by taking into consideration time and other resources sample size **419** in the first objective is considered as appropriate sample size for this study.

4.6 Sampling procedures

Total number of health workers list was obtained from human resource unit of Tikur Anbessa Specialized Hospital by profession. The sample size (n) was distributed among the professions using probability proportional to size method. Finally, 419 study populations was included by simple random sampling technique.

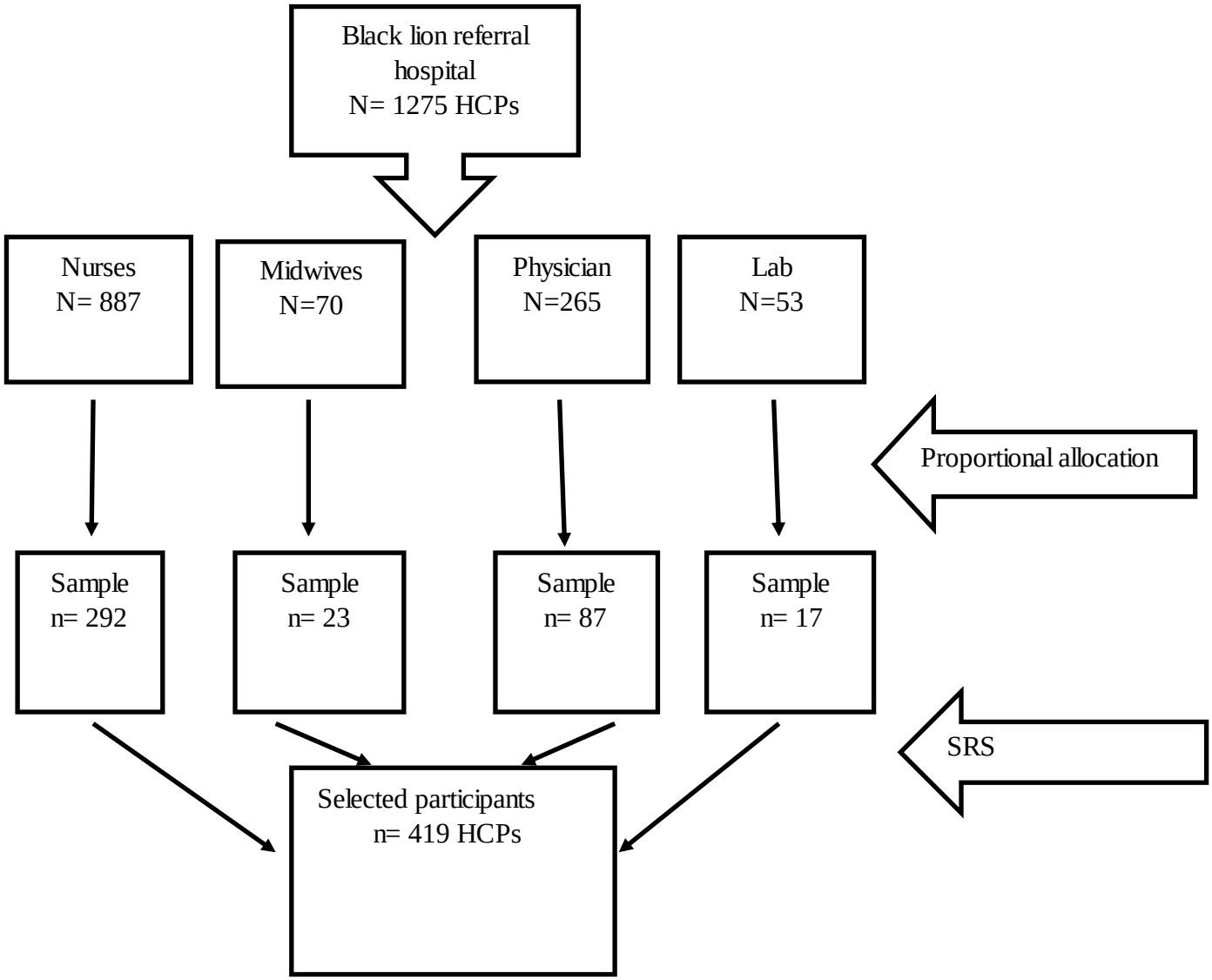

Figure 2: Schematic presentation of sampling procedure

4.7 Data collection procedures

Data was collected from the study subjects using self-administered Amharic version questionnaire supplemented by observation. First it was modified in English and translated back into Amharic version and was translated back to English. Pretest was conducted in Menelik Hospital for validation of questionnaire prior to actual data collection. Training was given to data collectors and supervisors prior to data collection.

Two data collectors (BSC health professionals) was selected; training was given on clarification of some terms and assessment tools. The questionnaire was filled by healthcare providers.

4.8 Operational definitions

Hospital Acquired Infection: is an infection acquired in a hospital or health care Facility by a patient or health care worker and if it becomes evident 48 hours or more after hospital admission or within 10 days of discharge following inpatient care (10,11).

Infection: is the entry and multiplication of an infectious agent in the tissue of a host with signs and symptoms (11).

Infection Prevention: is the practice of putting in place barriers to limit transmission of disease causing microorganisms (11)

Health professionals: health care Providers who were giving service in black lion hospitals and those their education level was diploma and above (Physician, nurse, laboratory and midwifery).

Infection prevention practice of health care professionals was classified into two groups (safe practice and unsafe practice).

Safe practice: Respondents who score more than mean of correct answer were classified as safe practiced (9).

Unsafe practice: Respondents who had score less than mean value of correct answers were classified as unsafe practice (9).

Knowledgeable: Respondents who score more than mean of correct answer

Not knowledgeable: Respondents who had score less than mean value of correct answers

Positive attitude: Respondents who score more than mean of correct answer

Negative attitude: Respondents who had score less than mean value of correct answers

4.8 Study variables

Dependent Variables

- ✓ Practice of Infection prevention

Independent Variables

- Socio demographic characteristics (age, sex, marital status, Professional/ job title, Service year, Department/working place, Income)
- Previous training on infection prevention
- Availability of personal protective equipment
- Availability of guidelines on infection prevention
- Presence of infection prevention committee
- Work place supervision
- Work load
- Waste disposal method
- Post exposure prophylaxis
- Knowledge
- Attitude

4.9 Data management

The collected data was checked for completeness, accuracy and clarity. Codes were given to the questionnaire and participant during data collection so that any identified errors could get traced back using the codes. The necessary feedback was given to the data collectors. Coded data was entered into Epi info version 7.2.1 computer software package. After the entry of every questionnaire is completed, the soft copy of every questionnaire was checked with its hard copy to see for the consistency. After the cross checking, cleaning was made to avoid missing values, outliers and other inconsistencies before analysis. Data was cleaned using frequency to see the missing value and descending and ascending order to see the outliers. Cleaned data was exported to SPSS version 22.0 software package for analysis.

4.10 Data Analysis procedures

The coded data was entered in to computer using Epi Info version 7.2.1 software and transferred to SPSS version 22.

For specific objective 1(infection prevention practice among health professionals)

Descriptive statistical values such as; frequencies, percentage, mean and standard deviations was used primarily to summarize as well as to describe the data. A chi-square and Fischer's Exact test was also use where appropriate to identify if relationships exist between categorical variables. P value set as < 0.05 considered as used to ascertain significant associations.

For specific objective 2 (factors associated with infection prevention practices)

Logistic regression analysis was carried out at two levels. Bi- variable and multi- variable analysis was done between independents and dependent variables to identify independent factors. P-value less than 0.2 in bivariate analysis entered in to multivariate logistic regressions to control confounders. Multivariable logistic regression model was used to identify factors associated with infection prevention practice. During the analysis p-value and 95% CI for OR was used in determining the significance of association; p-value less than 0.05 or CI not contain 1 was taken as significance of association. Result was presented in text, table and graphs.

4.11 Data quality assurance

Training was provided to data collectors and supervisors on the study instrument and data collection producers prior to the beginning of the study. About 5% Pretest the was conducted prior to data collection in Menelik hospital to check the clarity, sequence, consistency and time required to fill the entire questionnaire. Based on the result of pretest, further modification was made accordingly. Day to day supervision were conducted for each data collectors by supervisor and principal investigator to see how the data collection tools are used and filled questionnaires were checked for completeness, legibility and consistency. The questionnaire was developed based on the Ethiopian IP guideline, Ethiopian Hospital Reform Implementation Guidelines and other literatures.

4.12 Ethical consideration

Before conducting the research Ethical clearance was obtained from the Research Ethics committee (REC) of Addis Ababa University School of public health and black lion Hospital. Informed consent was obtained from respondents who were participating in the study. Confidentiality were maintained by omitting their name and personal identification of the participant. Before starting the interview data collectors were informing the study subjects about the purpose and Significances of the study to get the consent of the respondents.

4.13 Dissemination of results

Results will be put in a research paper that is to be submitted to Addis Ababa university school of public health. Moreover, it will be disseminated to black lion hospital and NGOs working on infection prevention in the study area will be supplied with a copy of the research. Furthermore, the finding will be presented on appropriate seminars, conferences and workshops. And publishing with scientific journal will be considered.

5. Results

5.1 **Socio-demographic characteristics**

A total of 396 subjects participated in the study with a response rate of 94.5%. The mean age of participants was 28.54 years (SD = ±5.223), and among them 188 (47.5%) were males and 208(52.5%) were females. There were 77 physicians (19.4%), 279 nurses (70.5%), 23 Midwife (5.8%) and 17 (4.3%), laboratory professionals.

Regarding their service year 268(67.7%) had served for less than 5 years 91 (23%) served between 5 and 10 years and 37(9.3%) served more than 10 years in their respective professions. A higher proportion 286(72.2%) of the respondents were BSC holder, diploma 15(3.6%), Medical Doctors 77(19.4%) and 18(4.5%) of healthcare worker were MSC/MPH. regarding Marital status 180(45.5%) married, 211(53.3%) single, 1(0.3%) widowed and 4(1%) divorced (table 1)

Table 1: Socio-demographic characteristics of health care professionals at Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2019 ***(n=396)****.*

Characteristic	Frequency	Percent
Age		
≤25	100	25.3
26-30	218	55.1
31-35	49	12.4
36-40	17	4.3
≥41	12	3
Sex		
Male	188	47.5
Female	208	52.5
Educational status		
Diploma	15	3.8
BSC Degree	286	72.2
MD	77	19.4
MSC/MPH	18	4.5
Work experience		
≤5 years	268	67.7
5−10 years	91	23
≥10 years	37	9.3
Marital Status		
Married	180	45.5
Single	211	53.3
Widowed and Divorced	5	1.3
Profession		
Nurse	279	70.5
Midwife	23	5.8
Physician	77	19.4
laboratory	17	4.3
Working hours per week		
<40	93	23.5
≥40	303	76.5

5.2 Infection prevention practices

Respondents Infection prevention practices were assessed for the main element of infection prevention practice like hand hygiene, use of personal protective equipment and injection safety. Based on this the overall practice score was calculated by counting the individual response rate and mean was calculated to classify their practice as safe and unsafe practice, based on this 213 (53.8%) of respondents had safe practice and 183 (46.2 %) of them had unsafe practice.

The type of hand hygiene practice given by the respondent was 63(15.9%) water only, 242(61.1%) water and soap and 152(38.4%) water and antibacterial soap.

The reason given by the respondent those who didn't practice hand hygiene were unavailability of hand washing facilities 92 (23.2%), heavy patient load 20 (5.1%) and negligence 11 (2.8 %).

Among the participants 331(83.6%) use antiseptic hand rub and 65(16.4) didn't use antiseptic hand rub.

Among the participants 340(85.9%) use PPE from this 338(85.4%) used gloves, 314(79.3%) used gown, 47(11.9%) used caps, 47(11.9%) used google and 199(50.3%) used mask. The Reason they didn't use PPE was lack of materials 49(12.4%), lack of awareness 2(0.5%), difficult to work with 4(1%), not always necessary 8(2%) and carelessness 5(1.3%).

Among 396 participants 284(71.7%) recap needles and 112(28.3%) didn't recap needles and all participants didn't reuse syringe.

Table 2: Infection prevention practices of health care professionals at Tikur Anbesa Specialized Hospital, Addis Ababa, Ethiopia, 2019 ***(n=396)***

Characteristic		Frequency	Percent
Wash hand regularly			
	yes	297	25
	No	99	75
Use antiseptic hand rub			
	Yes	331	83.6
	No	65	16.4
Wear personal protective equipment's			
	Yes	340	85.9
	No	56	14.1
Recap needles			
	Yes	284	71.7
	No	112	28.3
Colour coded bin system			
	Yes	309	78
	No	87	22
Safety box availability			
	Yes	349	88.1
	No	47	11.9
ever vaccinated against Hepatitis B virus			
	Yes	327	82.6
	No	69	17.4

According to health care professionals self-reported hand washing practice 156 (39.4 %) health professionals had hand hygiene practice before patient contacts, 240(60.6%) after patient contact, 249(62.9%) if the feel looks dirty, 275(69.4%) after using toilet, 240(60.6%) after contact with blood, 195(49.2) before caring wound, 221(55.8) after caring wound, 191(48.2) after removing gloves, 141(35.6%) between patient contacts.

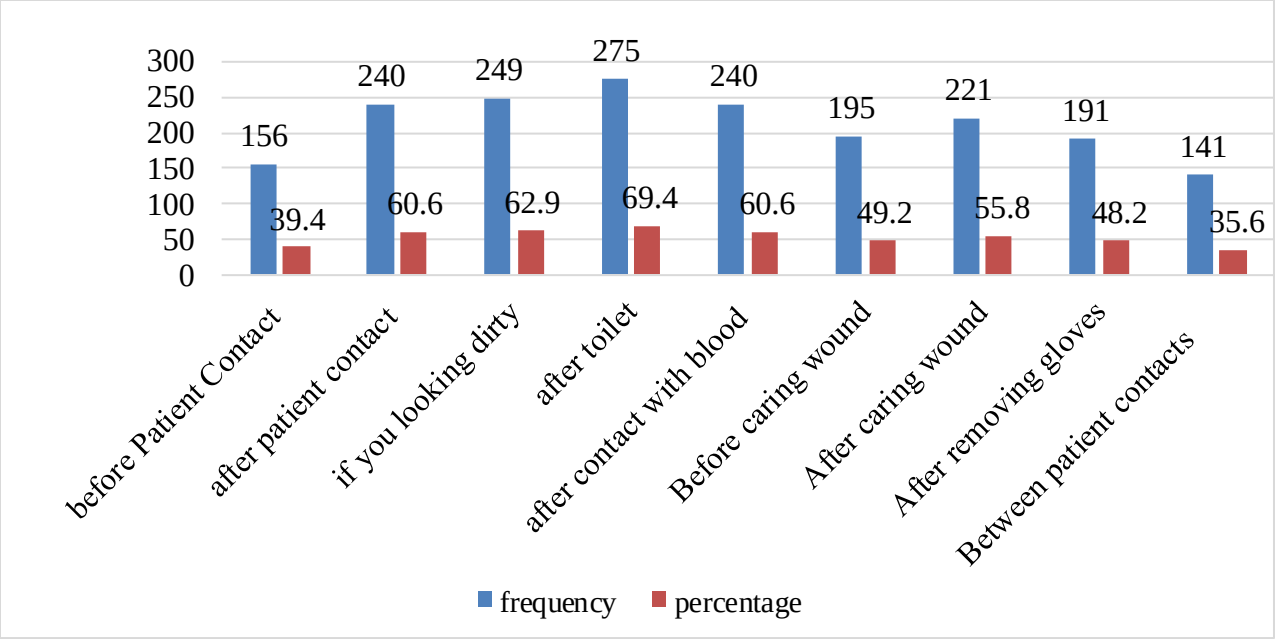

Figure 3: Hand washing practices of health professionals in Tikur Anbessa Specialized hospital, Addis Ababa.

From the 396 respondents The type of materials for hand washing practice given by the health professionals was 63(15.9%) water only, 242(61.1%) water and soap and 152(38.4%) water and antibacterial soap.

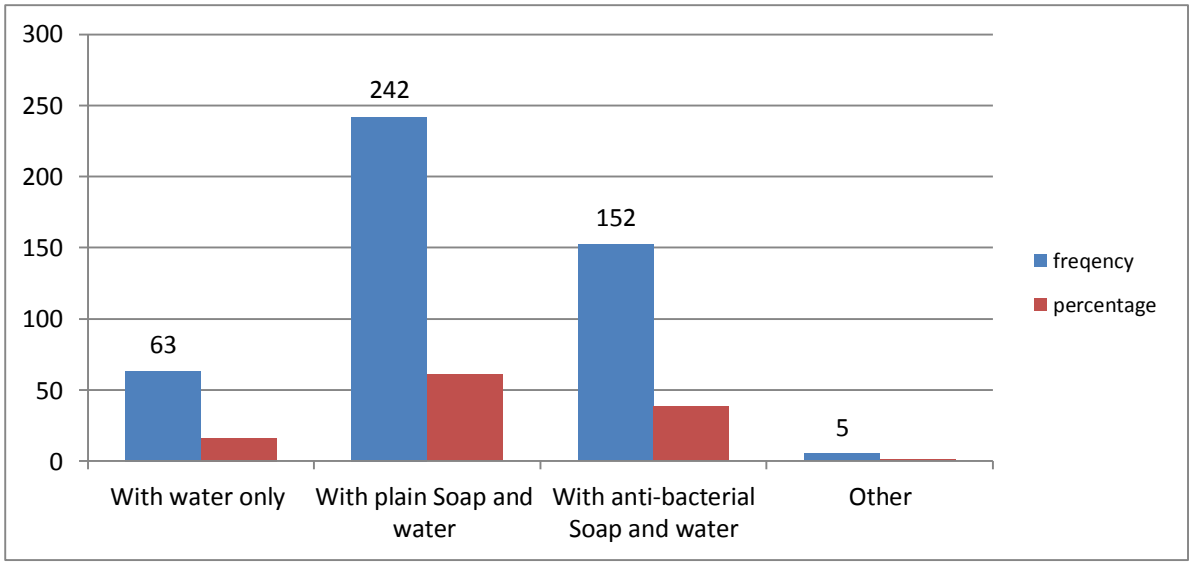

Figure 4: Health Professionals hand washing material in Tikur Anbessa specialized Hospital, Addis Ababa.

5.3 Work related factors

Results of this study shows that 107(27%) of the respondents had got training on infection prevention. One hundred seventy five (44.2%) of the respondents reported the presence of safety guideline in their working department. Nearly one-third, 121(30.6 %), of the health professionals reported that they had received supervision in the last one year (Table 3).

Table 3: Work related factors of health care professionals at Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia, 2019 ***(n=396)***

Characteristic		Frequency	Percent
Receive training on IP in the last 1 year			
	yes	107	27
	no	289	73
Infection prevention guidelines			
	Yes	175	44.2
	No	221	55.8
Activity supervised regularly regarding infection prevention			
	Yes	121	30.6
	No	275	69.4

5.4 Factors associated with Infection prevention practices

5.4.1 Binary logistic regression

The bivariate logistic regression was used to see the association between each independent variable and the dependent variable. The degree of association between independent and dependent variables was assessed using crude odds ratio with 95% confidence interval and a *P*-value <0.05 was considered as statistically significant.

In the bivariate logistic regression sex, service year, knowledge, received training on IP, infection prevention guidelines, regular supervision, working hours and average monthly income were significantly associated with infection prevention practices.

Table 4: socio demographic variables tested for Infection prevention practices among health professionals in Tikur Anbessa specialized hospital, Addis Ababa, 2019

Characteristic		Infection prevention practices		COR (95% CI)	
		safe	unsafe		p-value
Sex	Male	89	99	0.609(0.409,0.907)*	0.015
	Female	124	84	1	
Age	20-25	40	60	1	
	26-30	114	104	1.644(1.017,2.658)	0.424
	31-35	39	10	5.85(2.624,13.041)*	0
	36-40	11	6	2.75(0.941,8.035)	0.064
	≥40	9	3	4.5(1.147,17.648)*	0.031
Marital status	Married	116	64	2.224(1.481,3.338)*	0
	single	97	119	1	
Profession	Nurse	154	125	0.513(0.176,1.496)	0.222
	Midwife	11	12	0.382(0.101,1.438)	0.155
	Laboratory	36	41	0.366(0.118,1.139)*	0.083
	Physician	12	5	1	
Working hours per week	<40	56	37	1.407(0.878,2.257)*	0.156
	≥40	157	146	1	
Service year	less than 5	122	146	1	
	between 5-10	62	29	2.559(1.548,4.228)*	0
	greater than 10	29	8	4.338(1.913,9.838)*	0
Average monthly income	<4000	52	71	0.502(0.315,0.801)*	0.004
	4000-5999	56	40	0.96(0.58,1.59)	0.874
	>=6000	105	72	1	
Additional responsibility	No	172	154	1	
	Yes	41	29	1.266(0.75,2.135)	0.377

Table 5: Work related variables tested for Infection prevention practices among health professionals in Tikur Anbessa specialized hospital, Addis Ababa, 2019

Characteristic		Infection prevention practices		COR (95% CI)	
		safe	unsafe		p-value
Training	no	142	147	1	
	Yes	71	36	2.042(1.286,3.243)*	0.002
Infection prevention guidelines	No	97	124	1	
	Yes	116	59	2.513(1.667,3.79)*	0
Regular supervision	No	134	141	1	
	Yes	79	42	1.979(1.271,3.082)*	0.003
Additional responsibility	No	172	154	1	
	Yes	41	29	1.266(0.75,2.135)	0.377
Safety box availability	No	30	17	1	
	Yes	183	166	0.625(0.332,1.174)	0.144
Color coded bins availability	No	49	38	1	
	Yes	164	145	0.877(0.543,1.416)	0.592
Vaccinated against Hepatitis B virus	No	31	38	1	
	Yes	182	145	1.539(0.913,2.593)*	0.106

Table 6: Knowledge and attitude tested for Infection prevention practices among health professionals in Tikur Anbessa specialized hospital, Addis Ababa, 2019.

Characteristic		Infection prevention practices		COR (95% CI)	p-value
		safe	unsafe		
knowledge	not knowledgeable	27	64	1	
	Knowledgeable	186	119	3.705(2.235,6.14)*	0
Attitude	negative attitude	56	59	1	
	Positive attitude	157	124	1.334(0.863,2.061)	0.194

5.4.2 Multivariable logistic regression

Variables with *P*-value ≤ 0.2 in the bivariate analysis were entered into the final multivariable logistic regression analysis to control potential confounding factors and to get estimates of the association between factors and dependent variables.

When variables were analyzed together in the multivariable analysis only level of knowledge, availability of guidelines and working hours were significantly associated with infection prevention practices.

A multivariate logistic regression analysis was applied to determine the association between different factors with infection prevention practice of health care professionals. There was statistically significant between level of knowledge, availability of guidelines and working hours with infection prevention practices. There was no significant difference of practice on infection prevention with sex, age, service year, attitude, training, regular supervision, marital status, availability of safety box, average monthly income, additional responsibility and working department.

In Table 7, the multivariate analysis showed, the odd of good infection practice was 3.66 times higher in knowledgeable health professionals than not knowledgeable health professionals [AOR (95%C.I.) = 3.66(2.005, 6.704)].

The odd of good infection practice was 1.926 times higher in rooms having infection prevention guidelines than rooms have no infection prevention guidelines [AOR (95%C.I.) = 1.926(1.148, 3.230)]. The odd of good infection practice was 1.866 times higher in working hours less than 40 hours per week than greater than 40 working hours per week of health professionals [AOR (95%C.I.) = 1.866(1.037, 3.356)] (Table 7)

Table 7: Multivariate logistic regression analysis of factors associated with infection prevention practice among health care professionals in Tikur Anebessa Specialized Hospital, Addis Ababa (n=396)

Characteristic		Infection prevention practices		COR (95% CI)	AOR (95%CI)
		safe	unsafe		
Sex	Male	89	99	0.609(0.409,0.907)*	0.815 (0.505 1.315)
	Female	124	84	1	1
Age	20-25	40	60	1	1
	26-30	114	104	1.644(1.017,2.658)	1.056 (0.581 1.919)
	31-35	39	10	5.85(2.624,13.041)*	1.833(0 .626 5.37)
	36-40	11	6	2.75(0.941,8.035)	0.643(0.146 2.831)
	≥40	9	3	4.5(1.147,17.648)*	1.020 (0.174 5.988)
Service year	less than 5	122	146	1	1
	between 5-10	62	29	2.559(1.548,4.228)*	1.784(0.890 3.574)
	greater than 10	29	8	4.338(1.913,9.838)*	2.452(0.696 8.638)
knowledge	not knowledgeable	27	64	1	1
	Knowledgeable	186	119	3.705(2.235,6.14)*	3.666(2.005,6.704)**
Attitude	negative attitude	56	59	1	1
	Positive attitude	157	124	1.334(0.863,2.061)	0.851 (0.490 1.478)
Training	no	142	147	1	1
	Yes	71	36	2.042(1.286,3.243)*	1.570 (0.926 2.661)
IP guidelines	No	97	124	1	1
	Yes	116	59	2.513(1.667,3.79)*	1.926(1.148,3.230)**
Regular supervision	No	134	141	1	1
	Yes	79	42	1.979(1.271,3.082)*	1.272 (0.724 2.238)
working hours per week	<40	56	37	1.407(0.878,2.257)*	1.866(1.037 3.356)**
	≥40	157	146	1	1
Marital status	Married	116	64	2.224(1.481,3.338)*	1.447 (0.877 2.386)
	single	97	119	1	1
Safety box availability	No	30	17	1	1
	Yes	183	166	0.625(0.332,1.174)	0.550 (0.263 1.150)
Average monthly Income	<4000	52	71	1	1
	4000-5999	56	40	1.912(1.113,3.283)*	1.568 (0.833 2.953)

	≥6000	105	72	1.991(1.248,3.176)*	1.362 (0.713 2.601)
Additional responsibility	No	172	154	1	1
	Yes	41	29	1.266(0.75,2.135)	0.858 (0.458 1.606)

NB: * P<0.2 for COR and **significant at P<0.05 for AOR.

5.5 Findings from Observation

Even though there is availability of running water for 24 hours sometimes there is interruption of running water and there are rooms not having functional running water. From 27(100%) observed rooms 20(74%) have hand hygiene facility like soap. Twenty-three (21%) of the rooms had waste collection containers for sharp objects located closer to work area. Three (11%) of them had picture on risk communication which is posted. All rooms have colored labeled waste containers 16(59%) rooms have hand rub near to working area. There is also shortage of personal protective equipment for health professionals' especially gloves and masks. The sterilization technique was steam and instruments were clearly labeled with date. There is an operating incinerator but the capacity of incinerator is less and there is high wastes collected near to incinerator and the waste segregation is poor since needles and other wastes are collected together.

Even though there is ash pit it is not functional because it is full. There was also shortage of safety box. There is Infection prevention committee but there is no regular meeting and they have no budget for infection prevention.

6 Discussion

Infection prevention is a key component of practice for all healthcare professionals, not only for their health but also to reduce nosocomial infections and thus improve the patient safety. Health care workers are at increased risk of occupationally acquired infection transmitted from both blood borne pathogen, such as hepatitis B and Human Immune Deficiency Virus as well as respiratory infection(12). In this study 53.8% (95% CI 48.7,58.9) of Health care professionals had good infection prevention practices. The prevalence of infection prevention practices among HCPs was in consistent with the studies conducted in Bahir Dar city with 54.3% and Debre Markos referral hospital with 57.3% (9,29). This result is higher than the studies conducted Mekelle special zone (42.9%) (30) , West Arsi Zone, Ethiopia 36.3% (31) and India (44%) ((32)

Difference in practice could be attributable to the difference in study settings, composite scoring, sampling technique, study area, characteristics of study participants, HCPs experiences and availability of infection prevention guidelines. Since HCWs in the capital cities had better work experience and get the opportunities for various infection prevention trainings, the likelihood of having better prevention practice will be higher than HCWs residing in the country-side. the study conducted in Mekelle with sample size 483 and have both qualitative quantitate method so this may make difference in result and also the study is done in hospital and health center set up. Two hundred eighty-four (37.4%) of health care workers ever had needle stick injury in the last one year. This study is almost similar with a survey done in 2003–04 on 40 health facilities in Ethiopia reported that 32 percent of the health care workers reported needle-stick injuries over a 12-month period. This study relatively lower than previous study in North Wollo which showed needle stick injury of 53.0%(33) and south east Nigeria 50.6% (23).This difference could be achieved by the effort made on infection prevention measure, sample size, study area, and characteristics of the respondents.

Although hand hygiene is the primary measure proven to be effective in preventing health care–associated infections and the spread of antimicrobial resistance only One hundred fifty-six (39.4%) of health professionals wash their hands before patient contact this finding is similar with study done in krobo district Ghana (37%) and lower than study done in Mizan-Aman General Hospital (68.7%) (29,33) this could be availability of hand washing facility, work load, negligence, sample size and characteristics of the respondents.

Two hundred fifty (63.1%) of health professionals exposed to blood or other body fluids of patients through contact in the last one year. This study is similar with study done in mekelle which is (60.2%) this might happen because of carelessness of the HCPs, shortage of personal protective equipment, time constraint and high patient flow.

This study also shows 349(88.1%) of the respondents reported that there is safety box for sharp objects located as closer to the practical area this study is lower than study done in Mekelle (95.7%). This may be due to the provision of safety box closer to the working area. Provision of sharps collection containers for proper disposal of sharps and placing this container close to the point of use have a high contribution for prevention of needle stick injuries and recapping of used needles in the health care facilities.

A cross sectional study done in Debre Markos shows that Availably of guidelines are significantly associated with infection prevention practice this is consistent with my study.

A study done in India shows that There was no significant association between socio-demographic variables (Age, Sex, Marital status, Educational status, Work experience) with their infection prevention practices and this is consistent with my study (32)

Study done Zimbabwe shows that Availability of infection prevention guidelines and knowledge is significantly associated with infection prevention practice among health professionals so this study is consistent with my study (34)

A study done in Saud Arabia shows that Training and age was significant associated with infection prevention practice so this study is not consistent with my study the reason may be study setting, characteristics of respondents and economical status of the country (35)

Strengths and Limitations of the Study

Strengths of the Study

- It had representative sample and good response rate.

Limitations of the Study

- The possibility of respondents' bias that they were likely to over report or under report their practice.
- There might be possibility of recall bias result in under reporting and misreporting of infection prevention practices.
- Cross sectional study design because it doesn't show cause and effect relationship

7. Conclusions

The results of the study show that half of (53.8%) HCPs had good infection prevention practices considered to be low. Having good knowledge, availability of infection prevention guideline and average working hour per week of health professionals are predictors of good infection prevention practices. As a result, to sustain and improve good infection prevention practices, adequate pre-service as well as on job trainings for health care professionals should be given and accessing infection prevention guidelines in each department should be effective and important interventions to improve healthcare worker's infection prevention practice.

8. Recommendations

- ✓ Tikur Anbessa specialized Hospital together with stakeholders has to conduct follow up and supervision to health care professionals to aware and maximize practicing safe infection prevention
- ✓ Health care professionals should strengthen their adherence to universal precautions.
- ✓ Tikur Anbessa specialized Hospital should Integrate Infection prevention practices with routine works and improving sustainable supplies like PPE, and encouraging the healthcare providers to use PPE and IP guideline.
- ✓ The practice of recapping used needles should be prohibited in the hospital. Posters should be posted in the facilities to remind HCPs of the need to comply with universal precautions.
- ✓ The hospital has to plan to be able to equip the shortage of IP equipment's and safety box
- ✓ Above all, HCPs should receive periodic training on infection prevention, with a view to improving overall safety of patients and healthcare providers.
- ✓ Further study should be conducted on a large scale by including different levels of health facilities and regions of the country.

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Annex

Annex I Participants information sheet

Research Project: Assessment of infection prevention practice and associated factors among health professionals in Tikur ambessa specialized hospital, Addis Ababa.

Name of Principal Investigator: Abebe Anteneh

Introduction: This information sheet is prepared by the investigator whose main aim is to study the infection prevention practices and associated factors among health professionals in Tikur Ambessa specialized hospital, Addis Ababa. The investigator is MPH student from Addis Ababa University School of Public Health.

Purpose: The purpose of this study is to assess the infection prevention practices and associated factors among health professionals in Tikur ambessa specialized hospital.

Procedures: You are kindly invited to take part in this research because I believe you can provide the necessary information for the research. Participation into the study is on voluntary basis. If you are willing to participate in this project, you will be asked to give your response by the data collectors. All the responses given by the participants and the results obtained will be kept anonymous and confidential. No one outside the research team will have access to your responses.

Risk and/or Discomfort: Risk of participating in this study is nil since the study doesn't need collecting any samples.

Confidentiality and Anonymity: The information that we will be collected from this research project will be kept confidential. Information about you that will be collected from the study will be stored in a file, which will not have your name on it, and it will not be revealed to anyone except the principal investigator. Your participation in this study is voluntary.

Right to Refuse or Withdraw: you have the full right to refuse from participating in this research (you can choose not to respond some or all of the questions) if you do not wish to participate; and this will not affect you. You have also the full right to withdraw from this study at any time you wish to, without losing any of your rights as a resident of this site.

Content and Duration of the Questionnaire: The questionnaire will look into the following details; socio demographic characteristics, work environment and work-related factors and questions related

to infection prevention practices and associated factors. The questionnaire will take you approximately 25-30 minutes to give complete response.

Contact address: If you have any question which is not clear to you can contact the investigator or Research and Ethical Committee of Addis Ababa University.

Investigator: Abebe Anteneh

Mob +251-910 718195

Email abxant@gmail.com

Advisors : Dr.Abera Kumie (MSC, PHD)

Email Aberakumie2@yahoo.com

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Mulugeta Tamire (MPH,PHD fellow)

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Mobile:-+251911805081

Addis Ababa University, school of public health

Annex II: consent form

How are you, I am _____. This is an interview to be done with you for a study that is being conducted by Addis Ababa University, school of public health, Extension General Master of Public Health student Abebe Anteneh. This study is prepared to obtain relevant information about the infection prevention practice and associated factors among Health professionals in Tikur ambessa specialized Hospital. The study is aimed to fulfill the information gap and provide evidence for program planners, implementers and decision makers at different levels by enabling them to access a baseline on infection prevention practices. And this question will take about 25-30 minutes.

Your name & address will not be written in this form and will never be used in connection with any information you tell us. All the information given by you will be kept strictly confidential and only used for this study. Your participation is voluntary and you are not obligated to answer any question which you do not wish to answer. If you fill discomfort to respond to any of the question, please fill free to drop it any time you wish to do so. Thank you in advance for your participation in the study.
If you agree to participate in this study, I appreciate your truthfulness. And after having this consent form read to you, please put a sign below to show if you are willing to participate (No need of writing your name).

Are you willing to participate in this study?

Yes [ ] No [ ]

If yes, proceed to self-administered questionnaire below; If No, thank you!

Result of interview; 1) completed 2) partially completed 3) refused 4) others

Witness: signature certifying that the informed consent has been given

Data collector name ----------

Signature ---------- date ----------

Annex III English version questionnaire

All questionnaires are completed anonymously. We would appreciate if you answer all the questions and answer as honestly as possible. Please circle on the number you select that best answers the question. Kindly make only one Selection unless otherwise instructed.

Self-administered questionnaire on Assessment of infection prevention practice and associated factors among health workers in Tikur anbessa specialized hospital, Addis Ababa

Read the questions carefully and **circle** the number among the choices and **write an answer** to open questions in the space provided. Please circle on the number you select that best answers the question.

Questionnaire ID: ---------- Name of facility (**TASH**) date: / / .

Part I: Socio-demographic characteristics

Code	Socio-demographic Questions	Response	Remark
101	Sex	1. Male 2. Female	
102	Age	_____ (Age in completed years)	
103	marital status	1. Married 2. Single 3. Widowed 4. Divorced 5. Separated	
104	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Other(Specify) _____	
105	Profession	1. Nurse 2. Midwife 3. Physician	

		4. laboratory technicians	
106	Educational status	1. Diploma 2.. BSc 3. Dr/MD 4. MSc/MPH 5. Other (specify) ____	
107	Service year	---------- (year)	
108	What is your average monthly income/salary/ in ETB?	----------(ETB)	
109	Do you have another responsibility other than your position?	0. No 1. Yes	
110	Working hours in a day	---------- (in hours)	
111	Working unit/department	1. Out patient 2. Emergency 3. Laboratory 4. Surgery ward 5. Medical ward 6. Pediatric ward 7. Gyn and obs ward 8. Other (specify) ____	

Part II. Knowledge about infection prevention practice

Code	Question	Response	Remark
201	All microorganisms including spores are destructed by autoclaving?	0. No 1. Yes	
202	Chemical sterilization technique used for every equipment.	0. No 1. Yes	

203	Are health facilities staffs are at risk of infection?	0. No 1. Yes	
204	Washing hand with soap and water inhibit or kill transient and resident flora.	0. No 1. Yes	
205	There is need to wash hands before doing procedures that do not involve bodily fluids.	0. No 1. Yes	
206	Gloves should be worn if blood or body fluid exposure is anticipated.	0. No 1. Yes	
207	There is need to wear the different pair of gloves for multiple patients as long as there is no visible contamination	0. No 1. Yes	
208	Washing your hands with soap or an alcohol based antiseptic decreases the risk of transmission of hospital acquired pathogens	0. No 1. Yes	
209	. At what level of safety boxes should be filled before closing and sealing?	1. Full 2. One half (1/2) 3. Three fourth (3/	

Part III: Attitude toward infection prevention practice

301	Washing hands with soap or an alcohol based antiseptic decreases the risk of transmission of hospital acquired infections.	1. Strongly Disagree 2. Disagree 3. Neutral 4. agree 5. Strongly agree	
302	Gloves provide complete protection against acquiring/transmitting infection	1. Strongly Disagree 2. Disagree 3. Neutral	

		4. agree 5. Strongly agree	
303	To prevent accidental injury, used needles should be recapped immediately after use.	1. Strongly Disagree 2. Disagree 3. Neutral 4. agree 5. Strongly agree	
304	Gloves use for patient care contacts is a useful strategy for reducing risk of transmission	1. Strongly Disagree 2. Disagree 3. Neutral 4. agree 5. Strongly agree	
305	Hand washing is unnecessary when gloves are worn	1. Strongly Disagree 2. Disagree 3. Neutral 4. agree 5. Strongly agree	
306	Frequent hand washing damages skin and causes cracking, dryness, irritation and dermatitis.	1. Strongly Disagree 2. Disagree 3. Neutral 4. agree 5. Strongly agree	
307	You have a very low risk of acquiring infections from your patients	1. Strongly Disagree 2. Disagree 3. Neutral 4. agree 5. Strongly agree	

Part-IV: Health professional's infection prevention Practice related questionnaires

Code	Question	Choices	Remark
401	Do you wash your hand regularly when you perform tasks in health facility?	0. No 1. Yes	
402	When do you wash your hands? (**it is possible to circle more than one item)**	A. before Patient Contact 0.No 1.Yes B. After Patient Contact 0.No 1.Yes C. If you look or feel dirty 0.No 1.Yes D. After going to the toilet 0.No 1.Yes E. After contact with blood or bodily fluids 0.No 1.Yes F. Before caring for a wound 0.No 1.Yes G. After caring for a wound 0.No 1.Yes H. After removing gloves 0.No 1.Yes I. Between patient contacts 0.No 1.Yes	
403	What do you use to wash your hand? **(it is possible to circle more than one answer**)	1. With water only 2. With plain Soap and water 3. With anti-bacterial Soap and water 4. Other specify_____	
404	If your answer is no for question 401 why you did not wash your hands?	1.Heavy patient load 2.Unavailability of hand washing materials 3.negelegency 4.Other specify_____	
405	Do you use antiseptic hand rub?	0. No 1 .Yes	
406	Do you wear personal protective equipment's to prevent infection?	0. No 1. Yes	If question No 406 is no skip to question 408

407	If your answer is yes for question 406, which type(**it is possible to circle more than one item**)	1. Gloves 2. Gown 3. Caps 4. Goggle 5. Mask 6. Other specify_____	
408	If no, why you are not use personal protective equipment?	1. Lack of materials 2. Lack of awareness 3.Difficult to work with 4.Not always necessary 5. Carelessness 4. Other (specify)----------	
409	Do you recap needles after using them?	0. No 1. Yes	If question number 409 is No skip to question Number 411
410	If your answer is yes for question no 409, do you use one or two hands?	1. One hand 2. Two hands	
411	Do you reuse syringe?	0. No 1. Yes	
412	Have you ever had needle stick injury in the last one year?	0. No 1. Yes	
413	If your answer is yes for question number 412, how many times?	----------	
414	Have you ever had got sharp injury in the last one year?	0. No 1. Yes	
415	If your answer is yes for		

	question number 414, how many times?	----------	
416	Have you ever exposed to blood or other body fluids of patients through contact or unprotected skin?	0. No 1. Yes	
417	Does your health facility have color coded bin system?	0. No 1. Yes	
418	Was safety box available at your work place?	0. No 1. Yes	
419	Did you receive training on IP in the last 1 year?	0. No 1. Yes	
420	Have you ever vaccinated against Hepatitis B virus?	0. No 1. Yes	
421	Do you have infection prevention guidelines in your room	0. No 1. Yes	
422	Does your activity supervised regularly regarding infection prevention?	0. No 1. Yes	

Part VI Organizational factors that influence infection prevention practice

Code	Question	Choices	Remark
501	Does your department have continuous water supply for 24hrs?	1. Yes 2. No	
502	If yes for question number 501, what is the source of water?	1. Pipe line 2. Hand pump 3. Other specify__	
503	Does your facility have infection prevention committee?	1. Yes 2. No	

Annex II checklist

Part VII. Observation Checklist

Questioners Id---------- Name of facility (TASH) Date ----------

Department----------

No	Observation Questions	Response		Comments
	1. Hand hygiene			
1	Availability of running water for 24 hours per day?	Yes	No	
2	Number of rooms having functional running water for 24 hours per day			
3	Number of rooms having hand hygiene facility (soap)			
4	Number of rooms having hand rubs available			
5	Number of rooms having Picture on risk communication.			
	2. Use of PPE			
1	Gloves			
2	Gown			
3	Caps			
4	Goggle			
5	Mask			
6	Others			
7	Availability of PPE in each department			
	3. Instrument processing			
1	Is the facility using any sterilization technique? Dry sterilization (Autoclave)/steam sterilization	Yes	No	
2	Is sterilized instrument clearly labeled with date?	Yes	No	
3	Is chlorine solution changed every 24 hours?	Yes	No	
	4. Linen Handling Practice			
1	Soiled linens are handled, stored and transported properly?	Yes	No	

2	Is there a separate room or area for sorting soiled linens?	Yes	No	
3	Is there a separate room or area for sorting clean linens?	Yes	No	
4	Are separate carts designated and used for transporting contaminated/soiled linens and clean linens?	Yes	No	
	5. Waste collection and disposal Practice			
1	Is there an operating incinerator?	Yes	No	
2	Are separate (color coded) bins/containers used for segregating waste into infectious, non-infectious and sharps waste?	Yes	No	
3	Are infectious and sharps waste disposed by burning or burying?			
4	Is there a properly constructed placenta pit?	Yes	No	
5	waste collection containers for sharp objects located closer to work area	Yes	No	
6	Does this facility have an ash collecting pit for the ash that is generated when waste is burned			
7	Number of functional toilets for staff			
8	Number of functional toilets for patients			
9	Is the latrine designated for Male and Female?	Yes	No	
10	Number of rooms having Infection prevention guideline			
11	Does the facility have Infection prevention committee	Yes	No	
12	Infection prevention committee Regular meeting	Yes	No	
13	does your facility have budget for infection prevention	Yes	No	

አባሪ 1 ስለ ጥናቱ በአማርኛ የተሳታፊዎች መረጃ መስጫ ቅጽ

የምርምር ፕሮጀክት፡- የጥቁር አንበሳ ስፔሻላይዝድ ሆስፒታል ጤና ባለሙያወች የኢንፌክሽን ፕሪቬንሽን መከላከል ተግባራት እና ተጓዳኝ መንስኤወች ለማወቅ የሚደረግ ጥናት፡፡

ጥናቱን የሚያካሂደው ስም፡- አበበ አንተነህ

መግቢያ፡- ይህ የመረጃ መስጫ መጠየቂያ ቅጽ በአጥኝው የተዘጋጀበት ዋና አላማው የጥቁር አንበሳ ስፔሻላይዝድ ሆስፒታል ጤና ባለሙያወች የኢንፌክሽን ፕሪቬንሽን መከላከል ተግባራት እና ተጓዳኝ መንስኤወች ለማወቅ የሚደረግ ጥናት፡፡ጥናቱን የሚያካሂዱት ግለሰብ በአዲስ አበባ ዩኒቨርስቲ የህረተሰብ ጤና አጠባበቅ ትምህርት ቤት በህበረተሰብ ጤና አጠባበቅ የድህረ-ምረቃ ተማሪ ናቸው፡፡

አላማ፡ የጥናቱ አስፈላጊነት የጤና ባለሙያወችን የኢንፌክሽን መከላከል ተግባራት እና ተጓዳኝ መንስኤወች ለማወቅ የሚደረግ ጥናት እና ኢንፌክሽንን ለመከላከል የሚያስችሉ አቅጣጫወችን መለየት ነው፡፡

ሂደቶች፡- በአክብሮት በዚህ ጥናት እንዲሳተፉ የተፈለገበት ምክንያት ለጥናቱ አስፈላጊ የሆነ መረጃ ይሰጣሉ ብዬ ስለማምን ነው፡፡ በጥናቱ የሚያደርጉት ተሳትፎ በፈቃደኝነት ላይ ብቻ የተመሰረተ ነው፡፡ በፕሮጀክቱ ለመሳተፍ ፈቃደኛ ከሆኑ የፈቃደኝነት መጠየቅያውን በአግባቡ ተረድተው ሊፈርሙ ይገባል፡፡ በመቀጠልም በመረጃ ሰብሳቢው በኩል መልስወን ይጠየቃሉ፡፡ በተሳታፊዎች የሚሰጡ ምላሾችና የሚገኙ ውጤቶች ሚስጥራዊነታቸው የተጠበቀ ነው፡፡ ጥናቱን ከሚያካሂደው ቡድን ውጭ ማንኛውም ሶስተኛ ወገን ምላሽዎን እንዲያውቅ አይደረግም፡፡

ጉዳት፣አለመመቸት፡- ጥናቱ ምንም አይነት ጉዳት አያደርስብዎትም፡፡

ሚስጥራዊነትና ማንነትን ስለአለማጋለጥ፡- ከዚህ ጥናት የሚሰበሰበው መረጃ ሚስጥራዊነት የተጠበቀ ነው፡፡ ከእርስዎ የሚሰበሰበው መረጃ ላይ ስምዎት አይጻፍም እንዲሁም ማንም በማይደረስበት ቦታ ፋይል ተደርጎ ይቀመጣል፡፡ መረጃውም ከአጥኝው በስተቀር ለማንም ግለሰብ አይገለጽም፡፡ የእርስዎ ተሳትፎ በፈቃደኝነት ላይ ብቻ የተመሰረተ ነው፡፡

ፈቃደኛ ያለመሆንና የማቋረጥ መብት፡- በዚህ ጥናት ላይ ሙሉ ለሙሉ ወይንም ለመመለስ ለማይፈልጓቸው ጥያቄወች በከፊል ወይንም በመሉ የመዝለል መብትዎ የተጠበቀ ነው እንዲሁም ጥናቱ እርስዎን አይጎዳም፡፡ እንዲሁም በሚሰሩበት የስራ አካባቢ ጥናቱን መሳተፍ ከጀመሩ ቢኋላ በፈለጉበት ጊዜ የማቋረጥ መብትዎ ሙሉ ለሙሉ የተጠበቀ ነው፡፡

የመጠይቁ ይዘትና ቆይታ፡- መጠይቁ በአጠቃላይ በተለያዩ ክፍሎች ማለትም፤ ማህበራዊና ስነ-ህዝባዊ፣ ባህሪ፣ የስራ አካባቢና የጤና ባለሙያወችን የኢንፌክሽን ፕሪቬንሽን መከላከል ተግባራት እና ተንዳኝ መንስኤወች ያካተተ ነው ። መጠይቁ በአጠቃላይ ከ20-30 ደቂቃ ይወስዳል።

የበለጠ መረጃ ለማግኘት፡- ማንኛውም አይነት ጥያቄ ካለዎት ጥናቱን የሚያካሂደውን ግለሰብ በሚቀጥለው አድረሻ ማናገር ይችላሉ።

የአጥኝ ስም፡- አበበ አንተነህ ስልክ ቁ. ፡- +251910718195 Email abxant@gmail.com

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አዲስ አበባ ዩኒቨርስቲ የህብረተሰብ ጤና ሳይንስ ት/ቤት

አባሪ 2፡ የተሳታፊ ፍቃደኝነት መጠየቂያ ፎርም

ጤና ይስጥልኝ፡፡ ስሜ ----------እባላለሁ፡፡ ይህ ቃለመጠይቅ ከእርስዎ ጋር የሚደረገው የአዲስ አበባ ዩኒቨርሲት የማህበረሰብ ጤና ሳይንስ ት/ቤት የማስተርስ ተማሪ የሆኑት ለአቶ አበበ አንተነህ የመመረቂያ ጥናት ሥራ ነው ;;የተወሰኑ ጥያቄወችን ስለምጠይቀዎት ፍቃደኝነዎትን እጠይቃለሁ፡፡ይህ ጥናት የተዘጋጀው በጥቁር አንበሳ ስፔሻላይዝድ ሆስፒታል የሚሰሩ ጤና ባለሙያዎች የኢንፌክሽን መከላከል ድርጊቶችን እና ተጓዳኝ መንስኤዎቻቸውን ለማጥናት ነው፡፡መጠይቁ ከ25-30 ደቂቃ ይወስዳል፡፡

በዚህ መጠይቅ ላይ የእርስዎ ስም አይፃፍም እንዲሁም የእርስዎ ቃለመጠይቅ ለሌላ ሰው ተላልፎ አይሰጥም፡፡የእርስዎ ቃለመጠይቅ ሚስጥራዊነቱ የተጠበቀ ሲሆን ለዚህ ጥናት ብቻ ያገለግላል፡፡የእርሰዎ ተሳትፎ በፍቃደኝነት ላይ የተመሰረተ ነው እንዲሁም ያልተስማማዎት ጥያቄ ካለ ጥያቄውን ያለመመለስና ማቋረጥ ይችላሉ፡፡በዚህ ጥናት ስለተሳተፉ በጣም እናመሰግናለን፡፡

በዚህ ጥናት ላይ ለመሳተፍ ፈቃደኛ ከሆኑ፤ እውነተኛነትዎን ማበረታት እወዳለሁ፡፡ ይሄንን የፍቃደኝነት መጠጠቂያ ቅጽ ካነበቡ ቡኃላ፤ በጥናቱ ለመሳተፍ ፈቃደኛ ከሆኑ ከታች ባለው አማራጭ ላይ የራይት (√) ምልክት ያድርጉ፡፡ (ስምዎን እንዲጽፉ አትጠየቁም)

በዚህ ጥናት ላይ ለመሳተፍ ፈቃደኛ ነዎት?

አዎ [ ] -ፈቃደኛ ከሆኑ ወደ መጠይቁ ይግቡ አይ [ ] -አመሰግናለሁ!

የመጠይቁ ውጤት: - ሀ) ሙሉ በሙሉ የተሞላ ለ) በከፊል የተሞላ ሐ) ፈቃደኛ አይደለም መ) ሌላ ካለ ይገለጽ _____

የመረጃ ሰብሳቢው ስም ----------

ፊርማ ---------- ቀን ----------

አባሪ 3 የአማርኛ ትርጉም መጠይቅ

ጥያቄወችን በጥንቃቄ ያንብቡና መልስዎን ምርጫ ላላቸው በማክበብ ይመልሱ እንዲሁም ምርጫ ለሌላቸው በክፍት ቦታወች በጽሁፍ ይመልሱ። እንደየጥያቄወቹ አንድና ከአንድ በላይ መልስ መስጠት ይችላሉ።

የመጠይቁ መለያ ኮድ፡ _____ የጤና ድርጅቱ ስም፡(ጥቁር አንበሳ ስፔሻይዝድ ሆስፒታል) ቀን----------

ክፍል 1፡- ማህበራዊና ስነ-ህዝባዊ ገጽታወችን የተመለከቱ ጥያቄዎች

ኮድ	መጠይቅ	ምርጫ	ምርመራ
101	ፆታ	1.ወንድ 2. ሴት	
102	እድሜ	_____(እድሜ በሙሉ አመት)	
103	የጋብቻ ሁኔታ	1.ያገባ/ች 2. ያላገባ/ች 3. የሞተበት/ባት 4. የፈታ/ች 5. ተነጣጥለው የሚኖሩ	
104	ሃይማኖት	1.ኦርቶዶክስ 2. መስሊም 3. ፕሮቴስታንት 4. ሌላ (ይገለጽ)_____	
105	የስራ ድርሻ/ሙያ	1. ነርስ 2. ሚድዋይፍ 3. ፊዚሽያን 4. ላብራቶሪ	
106	የትምህርት ደረጃ	1. ዲፕሎማ 2. ዲግሪ 3. ዶክተር 4. ማስተርስ	

		5. ሌላ (ይገለጽ)_____	
107	የስራ ልምድ በአመት	---------- (በአመት)	
108	አማካኝ የወር ገቢዎት ስንት ነው?	----------(የኢትዮጵያ ብር)	
109	ከተመደቡበት ስረ ውጭ ተጨማሪ ስራ ደርበው ይሰራሉ?	0. የለም 1. አዎ	
110	በቀን ምን ያህል ስአት ይሰራሉ	---------- (በስአት)	
111	የሚሰሩበት የስራ ክፍል?	1.ተመላላሽ 2. ድንገተኛ 3. ላቦራቶሪ 4. የቀዶ ህክምና ክፍል 5. ምርመራ ክፍል 6. የህጻናት ክፍል 7. ማዋላጃ ክፍል 8. ሌላ (ይገለፅ) ____	

ክፍል 2. ኢንፌክሽን ፕሪቬንሽን በተመለከተ የጤና ባለሙያው ያላቸው እውቀት መጠይቅ

ኮድ	መጠይቅ	ምርጫ	ምርመራ
201	ሁሉም ረቂቅ ተዋህስያን ስፖርን ጨምሮ በአውቶክሌቭ ይጠፋሉ ብለው ያስባሉ?	0. የለም 1. አዎ	
202	ኬሚካል ስትራሌዜሽን ለሁሉም የህክምና መገልገያ ቁሳቁሶች መጠቀም አለብን ብለው ያስባሉ?	0. የለም 1. አዎ	
203	የጤና ተቋማት ሰራተኞች ለኢንፌክሽን ተጋላጭ ናቸው ብለው ያስባሉ?	0. የለም 1. አዎ	
204	በሳሙና እና በውሃ እጅን መታጠብ ተዋህሲያንን ሊገድል ወይም ሊከላከል ይችላል ብለው ያስባሉ?	0. የለም 1. አዎ	
205	የህክምና አገልግሎት ከመሰጠታችን በፊት የሰውነት ፈሳሽ ንክኪ ባይኖርም እጅ መታጠብ	0. የለም 1. አዎ	

	አስፈላጊ ነው?		
206	ለደምና የሰውነት ፈሳሽ ተጋላጭነት የሚኖር ከሆነ ግላቭ መልበስ አስፈላጊ ነው	0. የለም 1. አዎ	
207	የተለያዩ ታካሚዎችን አገልግሎት ስንሰጥ ግላቭ መቀየር አስፈላጊ ነው ምንም እንኳ የሚታይ ብክለት ባይኖርም	0. የለም 1. አዎ	
208	እጅን በሳሙና ወይም በአልኮል እና በውሃ መታጠብ ከሆስፒታል አገልግሎት ጋር ተያይዞ የሚመጣ በሽታን ለመቀነስ ወይም ለመከላከል ያገለግላል	0. የለም 1. አዎ	
209	ሴፍቲ ቦክስ ምን ያህሉ ክፍል ሲሞላ ነው መወገድ ያለበት ?	1.ሙሉ 2. ግማሽ (1/2) 3. ሶስት አራተኛ (3/4)	

ክፍል 3: ኢንፌክሽን ፕሪቬንሽን በተመለከተ የጤና ባለሙያው የአመለካከት ጥያቄዎች

301	እጅን በሳሙና ወይም በእጅ ማከሚያ አልኮል መታጠብ ከሆስፒታል አገልግሎት ጋር ተያይዞ የሚመጣ ኢንፌክሽንን ለመቀነስ ያገለግላል	1.በጣም እስማማለሁ 2. እስማማለሁ 3. እርግጠኛ አይደለሁም 4. አልስማማም 5. በጣም አልስማማም	
302	ግላቭ ሙሉ በሙሉ ኢንፌክሽንን ይከላከላል	1.በጣም እስማማለሁ 2.እስማማለሁ 3.እርግጠኛ አይደለሁም 4.አልስማማም 5.በጣም አልስማማም	
303	ድንገተኛ አደጋዎችን ለመከላከል የተጠቀምንባቸውን መርፌዎች ወዲውኑ መክደን አለብን	1.በጣም እስማማለሁ 2.እስማማለሁ 3.እርግጠኛ አይደለሁም	

		4.አልስማማም 5.በጣም አልስማማም	
304	ግላቭ መጠቀም የበሽታ ተጋላጭነትን ለመቀነስ ጠቃሚ ዘዴ ነው	1.በጣም እስማማለሁ 2.እስማማለሁ 3.እርግጠኛ አይደለሁም 4.አልስማማም 5.በጣም አልስማማም	
305	ግላቭ ከተለበሰ እጅ መታጠብ አስፈላጊ አይደለም	1.በጣም እስማማለሁ 2.እስማማለሁ 3.እርግጠኛ አይደለሁም 4.አልስማማም 5.በጣም አልስማማም	
306	እጅን ቶሎ ቶሎ መታጠብ ቆዳን ይጎዳል በዚህም የእጅ መሰነጣጠቅ፤መድረቅ፤ማቃጠል እና የቆዳ በሽታ ያስከትላል	1.በጣም እስማማለሁ 2.እስማማለሁ 3.እርግጠኛ አይደለሁም 4.አልስማማም 5.በጣም አልስማማም	
307	ከከታካሚዎች በኢንፌክሽን የመያዝ እድል በጣም ዝቅተኛ ነው	1.በጣም እስማማለሁ 2.እስማማለሁ 3.እርግጠኛ አይደለሁም 4.አልስማማም 5.በጣም አልስማማም	

ክፍል 4: የጤና ባለሙዎች የኢንፌክሽን ለመከላከል የሚሰሩ ተግባራት በተመለከተ መጠይቅ

ኮድ	መጠይቅ	ምርጫ	ምርመራ
401	በጤና ተቋም ውስጥ ስራ ሲሰሩ እጅዎትን በመደበኛነት ይታጠባሉ?	0. የለም 1. አዎ	ለጥያቄ ቁጥር 401 መልስዎ የለም ከሆነ ወደ ጥያቄ ቁጥር 404 ይለፉ
402	መቼ መቼ ነው እጅዎትን የሚታጠቡት ?(ከአንድ በላይ መልስ መመለስ ይቻላል)	1. ታካሚ ከመንካታችን በፊት 0 **የለም** 1 **አዎ** 2. ታካሚ ከነካን በኋላ 0 **የለም** 1 **አዎ** 3. እጃችን ቆሸሸዋል ብለን ካሰብን 0 **የለም** 1 **አዎ** 4. ከመጸዳጃ ቤት መልስ 0 **የለም** 1 **አዎ** 5. የደምና ሰውነት ፈሳሽ ከነካን በኋላ 0 **የለም** 1 **አዎ** 6. ቁስል ከማከማችን በፊት 0 **የለም** 1 **አዎ** 7. ቁስል ካከምን በኋላ 0 **የለም** 1 **አዎ** 8. ግላቭ ካወለቅን በኋላ 0 **የለም** 1 **አዎ** 9.አንዱን ታካሚ አስተናግደን ወደ ሌላ ታካሚ ከማለፋችን በፊት 0 **የለም** 1 **አዎ**	
403	እጅዎትን ለማጽዳት ምን ይጠቀማሉ? ?(ከአንድ በላይ መልስ መመለስ ይቻላል)	1.በውሃ ብቻ 2. በውሃ እና በሳሙና 3. ፀረ-ተዋህሲያን ያለው ሳሙና እና ውሃ 4. ሌላ (ይገለጽ) _____	
404	ጥያቄ ቁጥር 401 የለም ከሆነ ለምንድን ነው እጅዎትን በመደበኛነት የማይታጠቡት?	1.የስራ ጫና 2.የእጅ መታጠቢያ ቁሳቁስ ባለመኖሩ 3.ችልተኝነት 4.ሌላ ይገለጽ _____	ለጥያቄ ቁጥር 401 መልስዎ አዎ ከሆነ ወደ ጥያቄ ቁጥር 405 ይለፉ

405	እጅዎትን ለማጽዳት የእጅ ማከሚያ አልኮል ይጠቀማሉ?	0. የለም 1. አዎ	
406	ኢንፌክሽንን ለመከላከል ሰውነትን መከላከያ መሳርዎችን ይጠቀማሉ?	0. የለም 1. አዎ	ለጥያቄ ቁጥር 406 መልስዎ የለም ከሆነ ወደ ጥያቄ ቁጥር 408 ይለፉ
407	ለጥያቄ ቁጥር 406 መልስዎ አዎ ከሆነ የትኛውአይነት (**ከአንድ በላይ መልስ መመለስ ይቻላል**)	1.ግላቭ 2. ግዋን 3. የጭንቅላት መከላከያ 4. የአይን መከላከያ መነጸር 5. የአፍ መሸፈኛ 6. ሌላ ይገለጽ_____	
408	ለጥያቄ ቁጥር 406 መልስዎ የለም ካሉ ለምንድን ነው የመከላከያ መሳርያዎችን የማይጠቀሙት?	1. የመሳርያዎች እጥረት 2. የግንዛቤ እጥረት 3.ለመስራት ስለሚያስቸግር 4.ሁልጊዜ ስለማያስፈልጉ 5. ቸልተኝነት 4. ሌላ (ይገለጽ)----------	
409	ከተጠቀሙ በኃላ መርፌን መልሰው ይከድናሉ?	0. የለም 1. አዎ	መልስዎ ለጥያቄ ቁጥር 409 የለም ከሆነ ወደ ጥያቄ ቁጥር 411 ይለፉ
410	መልስዎ ለጥያቄ ቁጥር 409 አዎ ከሆነ መርፌውን እንዴት ነው የሚከድኑት?	1.በአንድ እጅ 2.በሁለት እጅ	
411	የተጠቀሙበትን መድፌ ለመልሶ ጥቅም ያውላሉ?	0. የለም 1. አዎ	
412	ባለፉት አንድ አመት ውስጥ በስራ ቦታወት	0. የለም 1. አዎ	መልስዎ ለጥያቄ ቁጥር 409 የለም ከሆነ ወደ ጥያቄ ቁጥር

	በመርፊ ተወግተዉ ያዉቃሉ??		411 ይለፉ
413	ለጥያቄ ቁጥር 412 መልስዎ አዎ ከሆነ ምን ያህል ጊዜ?	----------	
414	ባለፉት አንድ አመት ውስጥ በስራ ቦታወት በስለታም የህክምና መገልገያወች ተወግተዉ ያዉቃሉ?	0. የለም 1. አዎ	
415	ለጥያቄ ቁጥር 414 መልስዎ አዎ ከሆነ ምን ያህል ጊዜ ተወግተው ያውቃሉ?	----------	
416	በበሽተኛ ደምና ስውነት ፈሳሽ የመነካት አደጋ አጋጥዎት ያውቃል?	0. የለም 1. አዎ	
417	ተቋማችሁ ባለቀለም ማርክ ያለው የቆሻሻ ማጠራቀመያ አለው?	0. የለም 1. አዎ	
418	ሴፍቲ ቦክስ በስራ ቦታዎ አለ ?	0. የለም 1. አዎ	
419	ባለፊው አንድ አመት ውስጥ ስለ ኢንፊክሽን መከላከል ስልጠና ወስደው ያውቃሉ?	0. የለም 1. አዎ	
420	ሄፓታይተስ ቢ ቫይረስ ክትባት ወስደው ያውቃሉ?	0. የለም 1. አዎ	
421	ክፍላችሁ ኢንፌክሽን	0. የለም	

	ፕሪቬንሽን መመርያ አላችሁ	1. አዎ	
422	ኢንፌክሽንን መከላከል በተመለከተ በየጊዜው ክትትል ይደረግበታል	0. የለም 1. አዎ	

ክፍል 5; ከስራ ተቋሙ ጋር ተያያዥነት ያላቸው መጠይቆች

ኮድ	መጠይቅ	ምርጫ	ምርመራ
501	ክፍላችሁ ለ 24 ስአት የማይቆራረጥ የውሃ አገልግሎት አለው?	0. የለም 1. አዎ	
502	ለጥያቄ ቁጥር 501 መልስዎ አዎ ከሆነ ውሃ ከየት ነው የምታገኙት?	1.የቧንቧ ውሃ 2. የቦኖ ውሃ 3. ሌላ ይገለጽ__	
503	ተቋማችሁ ኢንፌክሽን ፕሪቬንሽን ኮሚቴ አለው?	0. የለም 1. አዎ	

አመሰግናለሁ!

የመረጃ ሰብሳቢ ስም …….. የሱፐርቫይዘር ስም ……..

የመረጃ ሰብሳቢ ፊርማ……የሱፐርቫይዘር ፊርማ …….

መረጃው የተሰበሰበበት ቀን……..…

Abebe Anteneh Enyew

Back Ground

Name: Abebe Anteneh Enyew Nationality: Ethiopian

Sex: Male

Birth Date: August 17,1980 E.C

Marital status: Single

Experience Summary

I have been working for 9 years with a good understanding of hygiene and sanitation activities as well as overall waste management practices. Have a good knowledge of Ethiopia's health policy especially legislations associated with waste management plus environmental policy coupled with experience on basic safety measures, assessments, data collection & analysis, planning, reporting and partnership coordination**.**

1st April,2011 E.C- to date Ministry of health, Addis Ababa, Ethiopia

Health Education and promotion officer

Role and responsibilities

- Working with different stakeholders on SBCC material development
- Conducting Monitoring and supportive supervision for regional, zonal, woreda and health institutions on health education and promotion activities
- Providing TOT for regional and zonal health education, promotion officers and concerned bodies in different thematic areas.
- Development of project proposals and searching for fund.
- Interact with the stakeholders and work closely with NGOs, Private health sector and the community.
- Preparing and disseminating report on regular bias to the concerned bodies.
- Preparation of key messages in different health issues

1st Augest,2010 E.C- to April 2011 E.C Health office, – yeka Sub city, Addis Ababa, Ethiopia
Urban Health extension officer

Role and responsibilities

- Monitoring the field activities of health extension program works as well as checklist that enables

good monitoring

- Conducting supportive supervision for health extension supervisors and professionals on implementation of the urban health extension program (UHEP)
- Monitoring and Evaluating on weekly, Quarterly and annually on the overall activities of urban health extension program.
- Conducting supportive supervision for supervisors on implementation of the urban health extension program (UHEP).
- Monitoring and Evaluating on weekly, Quarterly and annually on the overall activities of urban health extension program.
- Facilitate community mobilization, organization and empowerment process.
- Providing technical support for Health Extension professionals on the implementation of UHEP.
- Appraise and produce development project proposals and searching for fund.
- Interact with the stakeholders and work closely with NGOs, Private health sector and the community.
- Preparing and disseminating report on regular bias to the concerned governmental offices.

1st November,2007 E.C- August 2010 FMHACA, – Bole Subcity,Addis Ababa, Ethiopia

Food, Health and Health related facilities and Industries Environmental Health Quality Assurance and Control Core Process Owner

Roles and responsibilities:

- Inspection of food and drinking establishment to ensure compliance to food safety regulatory requirements and safety of food.
- Giving Quality assurance and control of food and drinking establishment based on the criteria.
- Creating awareness about pest control measures and action taken in food and drinking establishment as well as institutions.
- Supervising availability of first aid kits in food and drinking establishment and institutions.
- Supervising food handlers about their personal hygiene.

1st November 2006- 30th October 2007 E.C FMHACA, – Bole Subcity,Addis Ababa, Ethiopia
Food and Drinking Establishment Quality Assurance and Control Officer

Roles and Responsibilities:

- Inspection and control of food and drinking establishment to ensure compliance to food safety

regulatory requirements and safety of food for human consumption.

- Participate in setting supplementary quality standards
- Reporting and coordination
- Providing technical support to different parties
- Overall hygiene and sanitation management

12th December 2004-30th November 2006 E.C AAHB,Yeka S/ city Health office, AA,Ethiopia

Urban Health Extension Program Supervisor

Roles and Responsibilities:

- Monitoring the field activities of health extension program works as well as checklist that enables good monitoring
- Conducting supportive supervision for health extension professionals on implementation of the urban health extension program (UHEP)
- Monitoring and Evaluating on weekly, Quarterly and annually on the overall activities of urban health extension program.
- Conducting supportive supervision for health extension professionals on implementation of the urban health extension program (UHEP).
- Monitoring and Evaluating on weekly, Quarterly and annually on the overall activities of urban health extension program.
- Facilitate community mobilization, organization and empowerment process.
- Providing technical support for Health Extension professionals on the implementation of UHEP.
- Facilitating and organizing in the functioning of health committee
- Appraise and produce development project proposals and searching for fund.
- Interact with the stakeholders and work closely with NGOs, Private health sector and the community.
- Preparing and disseminating report on regular bias to the concerned governmental offices.

1st October 2002- 12th December 2004 North Shewa Zone,Menzilalo Medir Woreda Health Office Health Extension Package Officer

Roles and responsibilities:

- Developing, establishing and promoting the maintenance of a safe, accident free and healthy working environment.
- Giving technical support on measures to improve community health including action regarding sorting of solid waste for sanitation.
- Organize and facilitate meetings with all members of target beneficiaries and promote their awareness on sanitation and hygiene especially on solid waste handling and safety measures.
- Conducting Risk assessment on production sites and recommends corrective and preventive actions.
- Creating awareness about Personal protective device for workers and distributing PPE.
- Ensure the implementation for the EHS rules and regulations.
- Conduct Hazard and Job safety analysis (JSA) on production site and recommend preventive and corrective action to be taken.
- Deliver Training for workers on occupational health and safety, First aid, EHS rules, regulations in the compound, Fire management and safety.
- Recommending measures to reduce accidents and hazards and assure that safety of the working environment.
- Monitor and inspect to ensure all units to implement the safety work plan.
- Organizing the investigation and handling of major accidents, incidents and near miss.
- Coordinating planning and open communication between partners which helped the establishment of good working relationship
- Monitoring the field activities of health extension program works as well as checklist that enables good monitoring
- Planning and reporting health extension activities to the concerned bodies
- Produce weekly, monthly and quarterly update program reports and submitted to the woreda management and zonal health department.
- Monitoring and evaluating health extension workers

Education and Trainings

October 2007–July 2009 Jimma University Faculty of Public Health Jimma, Ethiopia

BSC Degree in Environmental Science

Trainings and skills:

Certified on basic Computer application skill from IT Computer Training Center, Bahir Dar: (Ms Word, Ms Excel, Ms Access, Ms Power point, and internet application) in 2006 G.C.

Certified on Supportive supervision, UHEP packages, Monitoring and evaluation, planning and reporting training in May 2012 G.C.

Certified on Training on HMIS

Certified on Data collection skill for 6 month at Ethiopian public health institute on Ethiopian service provision assessment. Addition skill on CAPE and CAFÉ in 2014.

Certified on primary health care Implementation manual 2018.

Language

Amharic is native language

English : Proficient in speaking, writing and reading

References

1. Abebe Alamneh /pharmacy,/EFMHACA licensing and recording officer . E-mail-lifehabesha37@gmail.com Tel.0973816835
2. Meles Assefa WHO immunization project Officer.e-mail mass21@gmail.com Tel- 0910097348
3. Gebeyaw wubale/BSC/e-mail-gebeyawwubale@gmail.com Tel-0913329992

Declaration

I the undersigned declare that this is my original work and has not been presented in this or any other University and all source of materials used for the thesis have been fully acknowledged. **Name of principal investigator**: **ABEBE ABTENEH ENYEW**

Signature: _____

Date: _____

Place: Addis Ababa University College of Health Science School of Public Health

Department of General master of public health

This thesis has been submitted for approval to:

Advisor: DR. ABERA KUMIE (MSC, PHD)

Signature: _____

Date: _____