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Millennium Medical College**
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St. Paul Hospital Millennium Medical College

*Department of Emergency and Critical Care Medicine Graduate
Study Program.*

**Assessment of Knowledge, Attitude and Practice of Occupational Health
and Safety among Health Care Workers in Addis Ababa Tertiary
Government Hospitals from April 1, 2024 – October 28, 2024.**

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Table of Contents

Abstract.....	V
CHAPTER ONE	1
Introduction.....	1
1.1 Back ground of the study	1
1.2 Statement of the Problem	3
1.3 Significance of the study	4
CHAPTER TWO	6
Literature Reviews.....	6
Theoretical Frame work.....	Error! Bookmark not defined.
CHAPTER THREE	9
Objectives of the study.....	9
3.1 General objective	9
3.2 Specific objective	9
CHAPTER FOUR.....	10
Methodology and Materials	10
4.1 Study Area.....	10
4.2 Study Period	10
4.3 Study Design.....	10
4.4 Population	10
4.4.1 Source Population	11
4.4.2 Study Population	11
4.5 Eligibility Criteria	11
4.5.1 Inclusion Criteria	11
4.5.2 Exclusion Criteria.....	11
4.6 Sampling Technique / Procedure	11
4.7 Sample Size Determination	11
4.8 Study Variables	12
4.8.1 Dependent variables	12
4.8.2 Independent variables	12
4.9 Operational definitions	13
4.10 Data collection tool and procedures.....	13

4.11 Data quality Assurance	13
4.12 Data processing and analysis	14
4.13 Ethical considerations	14
4.14 Dissemination of results	14
CHAPTER FIVE	15
Result.....	15
5.1 Socio demographic characteristics of the respondents.....	15
5.2 Knowledge of the respondents to wards OHS	17
5.3 Attitude of the respondents to wards OHS	20
5.4 Practice of the respondents to wards OHS	23
CHAPTER SIX	25
Discussion	25
Limitation of the study	27
CHAPTER SEVEN.....	28
Conclusion and Recommendation	28
7.1 Conclusions	28
7.2 Recommendation.....	29
Reference	30

Acronyms

AA-----Addis Ababa

HCWs -----Health Care Workers

KAP-----Knowledge, Attitude and Practice

ILO-----International Labor Organization

OHS----- Occupational Health and Safety

SPHMMC -----Saint Paul Minillium Medical Collage

SPSS----- Statistical Package for Social science

WHA----- World Health Association

WHO-----World Health Organization

BPR----- business process reengineering

Abstract

Introduction: - Occupational safety and health hazards in healthcare facilities play a significant role in the lives of care providers and also contribute toward quality patient care. Occupational Health and safety in the workplace are critical components in healthcare institutions. Unsafe working conditions are among the causes of poor quality of care and burnout.

Objectives: - The study was intended at assessing the knowledge, attitude and practice of healthcare professionals towards occupational health and safety (OHS) in selected Addis Ababa tertiary hospitals.

Methodology: - Cross-sectional study was conducted among 354 health care workers who work in four selected tertiary government hospital in Addis Ababa from January to March, 2024. Data was collected using structured questionnaire and entered and analyzed using SPSS-27 version. Results were summarized in percentages and presented in tables, figures and texts.

Result:-Three hundred fifty four healthcare workers participated in the study with a response rate of 100%. Among these, 70.9%, 56.5% and 49.2% of respondents had high level of knowledge, positive attitude and good practice respectively.

Conclusion: - Knowledge, Attitude and Practice investigations provide helpful insight into the level of understanding and utilization of occupational health and safety towards healthcare workers. The finding shows that the overall level of knowledge and attitude was good. However, the practice was relatively low.

Recommendation:-Better workplace safety and employee well-being will be ensured by ongoing assessment and modification of OHS programs. Based on the above finding even though the knowledge level and attitude was good the practice was low. So I recommend another study to be done to identify the causal and effect relationship which will give us information on to which area will have to focus to fill this gap.

CHAPTER ONE

Introduction

1.1 Back ground of the study

Occupational safety and health hazards in healthcare facilities play a significant role in the lives of care providers and also contribute toward quality patient care. Healthcare workforce gets exposed to physical, chemical, biological, and psychological hazards while discharging their duties, thus demanding for proper knowledge and awareness to address the issue. Occupational health and safety is a discipline with a broad scope involving many specialized fields such as physical, psychological, chemical, biological, and mechanical/electrical, which determines the health and safety of employees in a broader context (1).

All health workers share a common goal to improve people's health. They are the backbone of any effective health system. While working to ensure that everyone has the right to health, health workers themselves should also have the right to safe and healthy working conditions to preserve their own well-being (2). Poor well-being and occupational burnout among health workers are associated with poor quality of care and negative patient safety outcomes such as medical errors (3)

Healthcare workers constituting 12% of the working population worldwide operate in an environment that is considered to be one of the most hazardous occupational settings. Hospital workers routinely face hazards related to lifting, moving, or otherwise physically interacting with patients. Workplace injuries and illnesses among hospital workers reflect common risks of hospital jobs and differ by type of hospital.(1)

There are many international commitments, conventions and resolutions on healthy and safe working conditions for health workers. Respecting labor rights and providing safe and

healthy working environment for all workers, including health workers, is one of the global commitments under Sustainable Development Goal 8 on decent work and economic growth(2)

Globally, for the very first time, healthcare quality and safety received attention at the 55th World Health Assembly in 2002. Since then, several initiatives to improve quality and safety have been launched. Following the WHA resolution, WHO initiated Clean Care is Safer Care (2005), to reduce healthcare-associated infection by focusing on improved hand hygiene; Safe Surgery Saves Lives (2008), dedicated to reducing risks associated with surgery; and Medication Without Harm (2017), to reduce the level of severe, avoidable harm related to medications globally by 50% over five years. However, low-quality and unsafe care continue to exist all over the world, and its burden is highest in the low- and middle-income countries.(2)

At the national level, Countries have several national programs that are related to protecting the health and safety of health workers. In the Ethiopian health system, the 1993 health policy didn't directly address the quality and safety of healthcare. However, it mentioned that the “development of an equitable and acceptable standard of the health service system” was one of its policy directions, which could be related to the quality of care. Subsequently, four health sector development program plans (I-IV) were launched. The first two health sector development program plans were devoted to increasing access to health care by expanding primary health care facilities and initiating the health extension program. During the third and fourth health sector development programs, business process reengineering (BPR) was implemented as an intervention to improve the quality of care. (4)

Health care workers are exposed to many occupational health hazards in Ethiopian government hospitals which include biological (infectious bacterial and viral agents like

hepatitis A, hepatitis C, and HIV), physical (musculoskeletal health problems due to working for a long time also exposure to radiation, laser, or chemicals and anesthetics), and psychological health problems. Consequently, these have negative effect on the employees, their families and the nation at large. Occupational health and safety is an important issue because of increased incidence of morbidity and mortality of exposed employees.(5). Thus, the study aims to assess the knowledge, attitude and practice (KAP) of occupational health and safety among health care workers in Addis Ababa tertiary hospitals.

1.2 Statement of the Problem

Occupational health and safety in any healthcare facility is an issue that should be dealt with a lot of concern because it provides a qualifying environment to healthcare workers in ensuring high-quality performance and reduction of risks. Some of the potential hazards are physical, chemical, biological, and psychological. Therefore Health and Safety issues relating to the personal safety and protection of its workers are a very important Environmental Health concern for hospitals(6).

Studies conducted in Assessment of Occupational Safety Practices among Medical Laboratory Staff in Governmental Hospitals in Riyadh, Saudi Arabia. Nationality and age group were the only two variables that were significantly correlated with occupational safety practices. Almost of the occupational safety practices subscales were followed in the assessed subscales, except for certain parameters including mainly personal protective equipment's and electrical safety(7).

Another study conducted in Overall prevalence of occupational hazards in Jugol Hospital, Harari region was 58% and 53% were exposed to Physical and Biological hazards while 32% and 35% were suffered by Chemical & Ergonomic hazards. More than half were not washing

their hand and 57% did not Wearing gown at work place. Generally there is great risk to occupational hazard in the Jugol hospitals(8).

No accurate data regarding Occupational safety and health is available in Addis Ababa government tertiary hospitals. Most workplace diseases and accidents do not come under the consideration of the labor department of the health ministry and the occupational health system is not well recognized in the country. This has resulted in an insecure and unhealthy workplace. Hence, the study fills the gap by providing updated information for healthcare policymakers, emphasizing the need to pay more attention to healthcare workers. It assessed the level of Knowledge, Attitudes, and Practices (KAP) regarding occupational health & safety and identifies common hazards in Government tertiary hospitals in Addis Ababa.

1.3 Significance of the study

Occupational health and safety is important to safely implement daily routine activities in hospitals. The study on the knowledge, attitude, and practice (KAP) of Occupational Health and Safety (OHS) among healthcare workers in tertiary government hospitals in Addis Ababa is highly significant for several reasons.

First, healthcare workers are at increased risk of occupational hazards, including exposure to infectious diseases, physical injuries, and psychosocial stressors. Despite these risks, there is limited research focusing on how well-prepared healthcare workers in Ethiopia, especially in Addis Ababa, are in terms of their awareness, attitudes, and practices related to OHS. This study seeks to address this knowledge gap by providing valuable insights into the current state of OHS awareness and compliance in the healthcare sector.

Secondly, the findings will be beneficial for hospital administrators and public health officials by highlighting areas where improvements in safety training, policies, and practices

are needed. Strengthening the OHS culture in hospitals will not only protect healthcare workers but also improve the quality of care delivered to patients.

Additionally, the study may offer policymakers evidence-based recommendations for developing or refining occupational health policies in Ethiopia's healthcare sector. This is crucial in ensuring the sustainable well-being and safety of healthcare workers, which is essential for maintaining an effective healthcare system. Finally, the outcomes of this research have the potential to inspire further studies on occupational health, encouraging the development of innovative interventions tailored to the Ethiopian healthcare context. Improved OHS practices will also contribute to reducing staff absenteeism, enhancing productivity, and building a safer and healthier work environment.

CHAPTER TWO

Literature Reviews

Over worldwide million of the workers exposed to the work place accidents and hazardous substances. According to World Health Organization “Occupational hazards is the 10th leading cause of diseases and death at work place. And the data shows occupational accidents and work-related diseases cause over 2.3 million fatalities, out of which over 350,000 are caused by occupational accidents and close to 2 million by work-related diseases. As a result, approximately 6,300 people die every day due to these Occupational health and safety problem(5)

According to a research done in public health facilities of Bhubaneswar Block, India from January 2017 to January 2018,172 health care workers were involved in the study and 69.8% of them had a good knowledge of workplace safety precautions and hazards. With statistically significant association in level of knowledge among younger age groups (81.8%), education, occupation, and job experience. 61% of research participants felt positive attitude and approximately 67% of the participants demonstrated a high degree of proficiency with regard to occupational hazards and safety protocols (9).

Another study held on March to April 2019 in a Hospital at northern Cyprus showed unsatisfactory level of knowledge, inadequate practice, and negative attitude toward standard precautions at the workplace(9,10).

A study on the knowledge, attitudes, and practices of 330 healthcare workers at Al-Shifa Medical Complex in Gaza Strip, Palestine revealed that high level of knowledge, positive attitude and good practice was significantly higher among those with diplomas, obstetric departments, nurses, work experience more than ten years, and those who had OHS training course. On the other hand, poor level of knowledge, negative attitude and inefficient practice

were observed in those with secondary education, work in the administrative and financial affairs department, be employed for five to ten years, and not having taken an OHS training course. Compared to the other HCWs nurses were found to have high level of knowledge (54.9%), positive attitude (47.7%) and good practice (50.4%) (11).

At the Bugando Medical Center in Mwanza, Tanzania, a study on healthcare professionals' knowledge, practices, and variables related to poor compliance with universal precautions was undertaken from December 2014 to February 2015. Of the 200 participants, 174 (87.0%) were aware of the notion of universal precautions. The level of knowledge was found to be higher among females, certain job category (with nurses, doctors, and laboratory technician having more knowledge than auxiliary HCWs), work experience for more than five years and previous training. Regarding the practice among 200 HCWs, 154 (77.0%) followed universal precautions, whereas the remaining 46 (23.1%) did not (12).

A second cross-sectional study was carried out from February to June 2018 at the Gondar University referral hospital to evaluate the knowledge, attitudes, and practices of healthcare professionals about infection prevention. Of the 282 study participants, 230 (81.6%) had sufficient knowledge. Of the research participants, 181 (64.2%) had a good attitude, whereas 101 (35.6%) had a negative attitude. Of the study participants, 162 (57.4%) had sufficient practice (13).

A study conducted on 173 medical laboratory technicians at four teaching hospitals in Ethiopia—Gondar University Hospital, Hawassa University Hospital, Jimma University Hospital, and Mekele University Hospital—showed that among these workers, 20.2% had a high level of knowledge, 65.3% had a moderate level of knowledge, and 25 had a low level of knowledge, with significant associations with risk assessment, monthly income, and OHS training. Additionally, 53.2% of participants had a neutral attitude, 4.0% had a positive

attitude, and 42.8% had a negative attitude. The study's findings also showed that roughly 13.9% of individuals had poor practice, 46.8% had a fair practice, and 39.3% had a good practice. Employment-related orientation of OHS was found to be correlated with attitude. Workplace experience, OHS training, and risk assessment were significantly associated with practice (14).

Another study conducted at Tikur Anbassa Specialized Hospital to evaluate cleaners' knowledge, attitudes, and practices regarding occupational health and safety principles revealed that while cleaners' attitudes toward OHS were generally positive (75%–100%), their knowledge level lagged well behind what was necessary to ensure their safety. 81% of respondents said they do not collect, transport, or dispose of sharp medical objects, such as needles, in closed or puncture-proof containers (15).

As far as my literature search goes there is no published study on assessment knowledge, attitude and practice of occupational health and safety practice in Addis Ababa tertiary hospitals.

CHAPTER THREE

Objectives of the study

3.1 General objective

To assess knowledge, attitude and practice of health care workers towards occupational health and safety (OHS) in selected tertiary hospitals in Addis Ababa from April 1, 2024 – October 28, 2024.

3.2 Specific objective

- To evaluate the level of knowledge of occupational health and safety among health care workers in Addis Ababa tertiary hospitals.
- To determine attitude of occupational health and safety among health care workers in Addis Ababa tertiary hospitals.
- To identify the practice level of occupational health and safety among health care workers in Addis Ababa tertiary hospitals.

CHAPTER FOUR

Methodology and Materials

4.1 Study Area

This study was conducted in selected tertiary government hospitals located in Addis Ababa, the capital city of Ethiopia. Addis Ababa is the political, economic, and cultural center of the country, with a population of 5,461,000 people and a land area of 527 square kilometers. It is home to several major health institutions that provide specialized medical care, training, and research services.

The city has 11 sub-cities (kifle ketemas) and 116 woredas across the city. The city has 49 hospitals. Thirteen are public hospitals. Thirty-six of the city's hospitals are private, from which twenty-two hospitals are served as general hospitals. Furthermore, the city has 98 health centers and 700 different level private clinics. The study was done on selected tertiary government hospitals in Addis Ababa Ethiopia. There are eight tertiary hospitals and from those tertiary hospitals the study selected Tikur Anbessa Specialized Hospital, St. Paul's Hospital Millennium Medical College, Aabet, and Alert hospitals. They count about 8,784 total health care workers including administrative staffs.

4.2 Study Period

This study was conducted from April 2024 – October, 2024

4.3 Study Design

Cross sectional study design was conducted to assess KAP of health care workers to wards occupational health and safety among selected tertiary hospitals. Structured questionnaires applied to assess the status of health care worker's knowledge, attitudes, practice, and associated factors of occupational health and safety in four tertiary hospitals.

4.4 Population

4.4.1 Source Population

All health care workers in St. Paulo's, Aabet, Tikur anbesa specialized hospital and ALERT tertiary government hospitals during the study period.

4.4.2 Study Population

Selected health care workers (who full fill inclusion criteria in four selected tertiary government hospitals in Addis Ababa

4.5 Eligibility Criteria

4.5.1 Inclusion Criteria

Health care workers (physician, nurses, pharmacist, laboratory and radiology technician) and who are willing to participate in the study

4.5.2 Exclusion Criteria

Health care workers who are not available during the study period

4.6 Sampling Technique / Procedure

Convenience method was used to select hospitals and the questionnaires were randomly to different working sites to in each hospital.

4.7 Sample Size Determination

The sample size will be calculated by single population proportion formula below

$$n = \frac{(Z \alpha/2)^2 \cdot pq}{d^2}$$

✓ n =required sample size

✓ $p=0.698$ from previous study(9)

✓ $d=0.05$

✓ $Z\alpha/2=1.96$ with $CI=95\%$

$$\checkmark \quad q = p(1-p)$$

$$n = \frac{(1.96)^2 \times (0.698) \cdot (0.3)}{(0.05)^2}$$

$$(0.05)^2$$

$$n = 322$$

Adding non response rate 10% – $322 + 32 = 354$ Even though the source of population is below 10,000 the determined sample size is less than 5% of the source population. Therefore there is no need to use infinite correction formula.

4.8 Study Variables

4.8.1 Dependent variables

- knowledge about occupational health and safety
- Attitude towards occupational health and safety measures
- Practices to assure occupational safety

4.8.2 Independent variables

- Age, Sex
- Educational status
- Professional status
- Work experience
- Training taken

4.9 Operational definitions

Health care workers – a one who delivers care and services to the sick either directly or indirectly

Occupational health - Occupational health addresses all facets of health and safety at work and has a major emphasis on prevention, particularly with regard to dangers that are infectious or non-infectious.

Knowledge questions were scored as 1 or 0 for correct and incorrect responses respectively, whereas, **practice responses** were provided 1, 2, or 3 for “not at all, yes sometimes and yes always” and **attitude were provided** 1, 2, 3, 4 for strongly disagree, disagree, agree and strongly agree respectively then Mean scores were calculated and used as a cut point to dichotomize the outcome variables. Scores below the mean scores were considered as poor knowledge, negative attitude, or poor practice; whereas, scores equal to the mean score or above were considered as good knowledge, positive attitude, or good practice (1)

4.10 Data collection tool and procedures

Structured questioner was adopted from different literatures and prepared in English language then it was distributed to study participant and assigned three data collectors (one for each hospital) and one as supervisor.

4.11 Data quality Assurance

The quality of data was assured by properly designing and pre-testing of the questionnaire, proper training of the interviewers and supervisors of the data collection procedures, proper

categorization and coding of the questionnaire. Every day, questionnaires were reviewed and checked for completeness by the supervisors and principal investigator and the necessary feedback was offered to data collectors in the next morning before data collection.

4.12 Data processing and analysis

The quantitative data was entered with kobo collect and analyzed with SPSS (Statistical Package for Social science) version 27. The data description method was by using percentages, frequency distributions, tables, and graphic representation used.

4.13 Ethical considerations

Ethically approval of the research proposal was obtained from the Ethical and Research Committee of SPHMMC. Formal letter was written by the department of Emergency and critical care medicine and permission was asked from other responsible bodies and after the consensus was reached the purpose of the study was explained to the study population, and detail information was given about the benefit of the study and the information given by study subject was confidential and no need to write their names. Acknowledgement was given for those who helped us during the study.

4.14 Dissemination of results

The results will be submitted to department of emergency and critical care medicine and will be presented as research defense seminar. The paper will also be distributed to library, to postgraduate office and AaBET's administration office, Addis Ababa health bureau, Federal Ministry of Health. Finally, it will be sent to national or international scientific journals for publications.

CHAPTER FIVE

Result

A total of three hundred fifty-four questionnaires were distributed and all the three hundred and fifty-four (354) completely filled and returned the questionnaires, which gave a response rate of 100%.

5.1 Socio demographic characteristics of the respondents

Among the head count of health care workers investigated at the selected government tertiary hospitals in Addis Ababa there were 226 (63.8%) males and 128(36.2%) females making male to female ratio of about 1.8: 1. The age range was 23 years (minimum) to 52 years (maximum) with the mean age of 31.7 with a standard deviation ± 5.1 years and the majority were found between the age group of 26 – 35 with a value of 81.4%) followed by those who are in the age group between 36-45 constituting 13.8% with the least being the age group >46 and <25 making percentage of 2.5 and 2.3 Respectively.

Regarding to their educational level majority of them are degree holder with a value of 238(67.2%), while 97 (27.1%) were Masters, Specialist &Sub specialist and the remaining 20 (5.6%) were diploma. Concerning their Occupation, the results showed that Doctors predominate with a value of 181 (51.1%), while 126 (35.6%) were Nurses and the remaining 47 (13.3%) were laboratory technician with majority of them had work experience between three and six years (203 (57.3%).

The finding of the study about working hospitals shows that highest number (31.5% of the respondent) work at St.Paulo's followed by Black lion, Aabet and ALERT hospitals with a value of 29.6%, 22.1% and 16.7% respectively and about 17 respondent works both Aabet and St.Paulo's hospitals. Majority of health care works working in emergency room (28.5%) followed by ward (21.5%), ICU (14.4%) and small numbers working in OR (9.0%).

More than half of the respondents had orientation on occupational health and safety during their first employment time (51.7%) but only 43.8% and 29.4% were trained and took risk assessment training respectively. 44.9% of the respondent had history of incidents that resulted in physical injury at their work place and around 55 (15.5%) were absent from work due to the injuries for less than ten days, 2.5% for 11 – 20 days and 2% for more than 3 weeks. While the rest responded as below in the **Table-1**

Table 1:- Socio-demographic characteristics of the respondent		
Variables (N=354)	N	Percentage (%)
Gender of Respondent		
Male	226	63.8
Female	128	36.2
Age of respondent		
<25	8	2.3
26 – 35	288	81.4
36 – 45	49	13.8
>46	9	2.5
Working Experience		
<2	48	13.6
3 – 6	203	57.3
7 – 9	54	15.3
>10	49	13.8
Education Level		
Diploma	20	5.6
Degree	238	67.2
Masters, Specialist &Sub specialist	96	27.1
Occupation		
Doctor	181	51.1
Laboratory Technician	47	13.3
Nurse	126	35.6
Respondent Working Hospitals		
St.Paulo's	117	31.5
Aabet	82	22.1
ALERT	62	16.7
Black lion	110	29.6
Working Site in Hospital		
Emergency Room	110	28.5
ICU	51	14.4
Laboratory Room	46	13.0
OPD	48	13.6
OR	32	9.0
Ward	76	21.5
Do you have orientation on occupational health and safety issue during your first employment time?		
Yes	183	51.7
No	171	48.3
Have you ever been trained on		

occupational health and safety?		
Yes	155	43.8
No	199	56.2
Have you taken risk assessment training?		
Yes	104	29.4
No	250	70.6
Had an incident that resulted in physical injury to you during your practice?		
Yes	159	44.9
No	195	55.1
Have you had history of personal violence?		
Yes	96	27.1
No	258	72.9
Number of days absent from work due to injuries		
0	283	79.9
1-10	55	15.5
11-20	9	2.5
>21	7	2.0

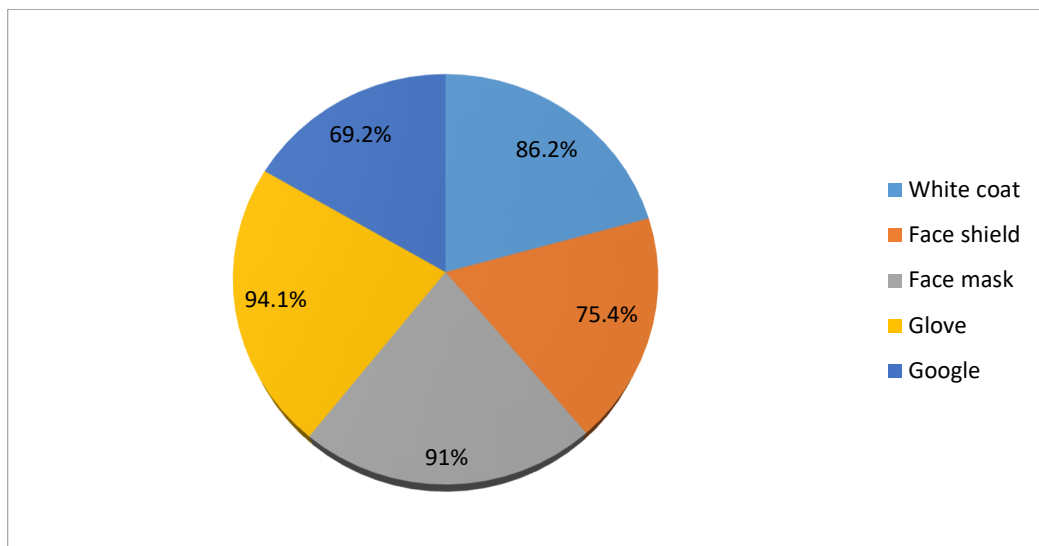
5.2 Knowledge of the respondents to wards OHS

Among the total participant 322 (91%) of respondents have general knowledge about occupational health and safety, this indicates a strong awareness among employees regarding the importance of OHS. Around 339(95.8%) of health care workers understand the types of PPE and how to use them effectively, showing a good level of preparedness. Almost all respondents 351 (99.2%) acknowledge that OHS is fundamental for any organization, reflecting positive attitudes towards safety culture. Regarding to employee responsibility about 346(97.7%) recognize that employees have a key role in improving workplace safety, indicating a shared responsibility mindset concerning to post exposure awareness about 322(91%) of respondents are aware of post-exposure prophylaxis (PEP), though there's room for slight improvement to reach full coverage. This is crucial in environments with exposure risks and all figures shown in **table 2**.

Table 2 :- Knowledge of the respondent towards Occupational Health and Safety

Description	High knowledge level	Low knowledge level
Do you have information on occupational health and safety	322(91%)	32(9%)
Knowledge about the type of personal protective equipment	339(95.8%)	15(4.2%)
Occupational health and safety is to be a major and basic subject for any organization	351(99.2)	3(0.8%)
Employer should take the primary responsibility of occupational health and safety improvement at work place	346(97.7%)	8(2.3%)
Awareness about post exposure prophylaxis and when to take it	322(91%)	32(9%)

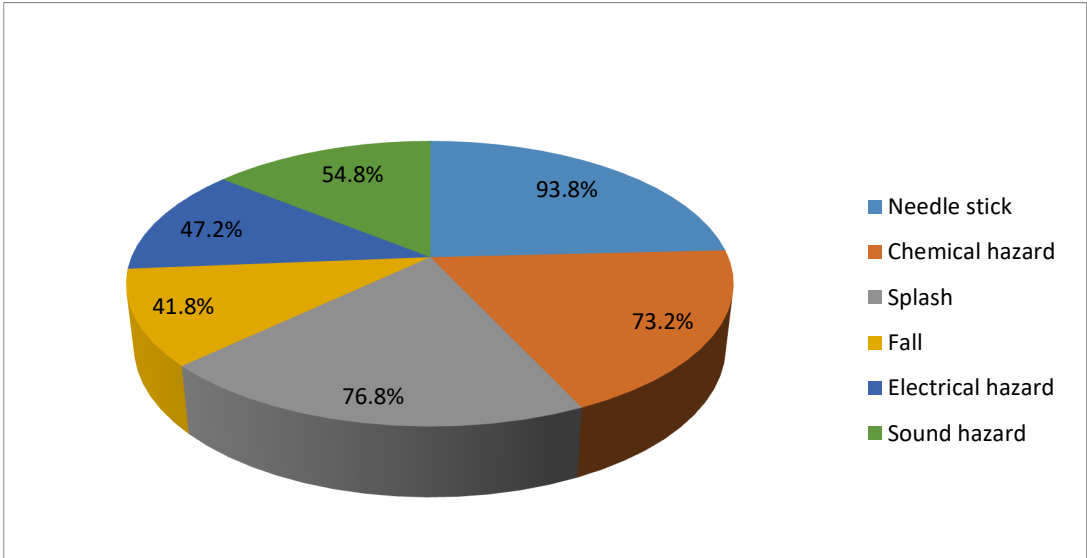
Percentage of the respondent knowledge about personal protective equipment demonstrated in chart 2 and shows that Gloves are the most frequently used item with 333(94.1%) usage closely followed by face mask with 322(91%) of the observed individuals and White coats are also common at 305(86.2%) usage. Goggles have the lowest adoption rate 245 (69.2%), possibly because their use might be limited to more specific situations and Face shields are used by about 267(75.4%), likely as an additional protective measure in higher-risk environments.

Chart 1: respondent's knowledge about the types of personal protective equipment

Work hazard demonstrated in chart 2 shows that needle stick injuries are the most common hazard (93.8%), followed closely by splash (76.8%) and chemical hazards (73.2%). Electrical (47.2%) and

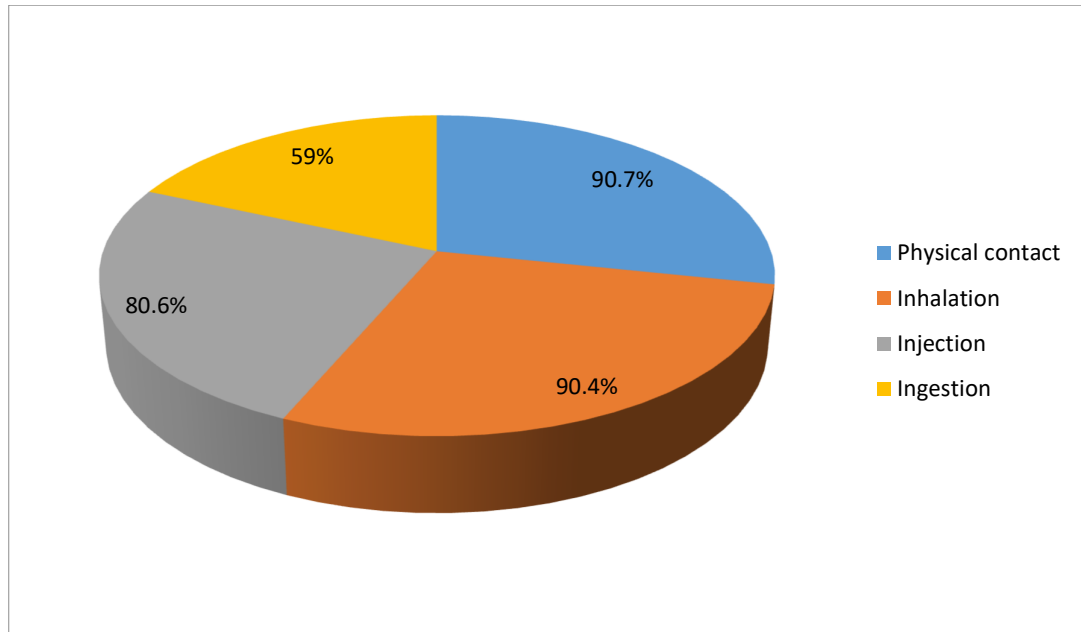
sound hazards (54.8%) are also notable but less prevalent than needle sticks. Preventive measures should prioritize high-frequency hazards while also addressing other risks to maintain workplace safety.

Chart 2: Respondents knowledge about the types of work hazard



Respondents' awareness of different routes of infection transmission is clearly stated in chart 3. The majority (90.7%) understand that infections can spread through direct or indirect physical contact, such as touching contaminated surfaces or shaking hands, a similar proportion (90.4%) are aware that infections can be transmitted through breathing in infectious agents, a slightly lower percentage (80.6%) recognize that infections can spread via injection, such as through needles or other invasive medical procedures and Fewer respondents (59%) are aware of infections transmitted through ingestion.

Chart 3: Responder's knowledge about the route of infection transmission



5.3 Attitude of the respondents to wards OHS

Attitude of HCW towards occupational health and safety were indicated in table 5 and the weighted mean score of attitude of the study participant was 3.32. Based on this cut of value majority of the participant about 56.5 % (200) of the respondent had positive attitude towards occupational health and safety, whereas 43.5% (154) of the respondent had negative attitude towards occupational health and safety. About 62.3 % (200) and 35.3 % (145) of the respondent strongly agree and agree in the absence of universal precaution of hospital facilities can be the sources of infection and epidemic disease respectively and the mean (3.6) is greater than the weighted average mean, thus 97.6% of health worker participant had positive attitude that the absence of universal precaution hospital facilities being a source of infection and epidemic disease. Around 69.2% (245) and 29.9%(106) of health care workers responded strongly agree and agree on the occupational health and safety is important for any organization respectively and had a mean score of 3.68 this shows that 99.2% of the respondent have positive attitude on the importance of occupational health and safety for any organization. 61.9% (219) and 36.2%(128) of the participants were responded strongly agree and

agree on Occupational health and safety training were helpful for health care worker behavioral change respectively and the mean (3.6) is greater than the weighted average mean thus, 98.1% of health care workers have positive attitude that occupational health and safety training is helpful for worker's behavioral change. Similarly, 96.3% (341) of the respondent with a mean of 3.54 had positive attitude that Occupational health and safety guideline and manuals are helpful for work place.

Participant on the question of Health care workers are among highest risk exposure responded 60.2% (213) and 36.7% (130) strongly agree and agree with a mean of 3.57. This indicates that 96.9% of the respondent have positive attitude that Health care workers are among highest risk exposure. From the total participant 48 %(170) and 44.9 %(159) responded strongly agree and agree on Risk assessment is a backbone for occupational health and safety question respectively with a mean of 3.41. This highlights that majority of the health care workers have positive attitude on risk assessment as a backbone of occupational health and safety. Whereas majority of the respondents had negative attitude towards the availability of personal protective equipment with a mean of 2.05, occupational health injuries or any incident occurrence recorded in log sheet with a mean of 3.25 and also from the total participant majority of the respondent have negative attitude on individual work place risk exposure should be taken as a community crisis with a mean of 3.19.

Table 3:- Attitude of health care workers towards occupational health and safety

Variables	Strongly disagree	Disagree	Agree	Strongly Agree	mean	SD	Attitude level
Do you agree that, in the absence of universal precaution hospital facilities can be the source of infection and epidemic diseases?	0 (0%)	8 (2.3%)	125 (35.3%)	221 (62.3%)	3.6	0.53	Positive
Occupational Health and Safety is important for any organization	0(0%)	3 (0.8%)	106 (29.9%)	245 (69.2%)	3.68	0.48	Positive
Occupational health and safety training is helpful for health care worker behavioral change	0 (0%)	7 (2%)	128 (36.2%)	219 (61.9%)	3.6	0.53	Positive
Occupational health and safety guideline and manuals are helpful for	1	12	136	205	3.54	0.578	Positive

work place	(0.3%)	(3.4%)	(38.4%)	(57.9%)			
Health care workers are among highest risk of exposure health professionals	1 (0.3%)	10 (2.8%)	130 (36.7%)	213 (60.2)	3.57	0.565	Positive
All personal protective equipment's are available at working environment	111 (31.4%)	146 (41.2%)	66 (18.6%)	31 (8.8%)	2.05	0.922	Negative
Occupational health injuries or any incident occurrence should be recorded in occurrence (incident) log sheet	6 (1.7%)	47 (13.3%)	155 (43.8%)	146 (41.2%)	3.25	0.744	Negative
Individual workplace risk exposure should be taken (counted) as a crisis of community	0 (0%)	62 (17.5%)	164 (46.3%)	128 (36.2%)	3.19	0.709	Negative
Risk assessment is a backbone for occupational health and safety	0 (0%)	25 (7.1%)	159 (44.9%)	170 (48%)	3.41	0.62	Positive

5.4 Practice of the respondents to wards OHS

Practice of health care workers on occupational health and safety were presented in table 6. The weighted mean score of practice of the study participants was 2.14. Based on this cut of value more than half of the respondents (180) (50.8%) had poor practice whereas only 49.2% of the respondent had good practice on occupational health and safety. A significant portion of respondents, 261(73.7%) reported either not using or only sometimes using occupational safety manuals at their work place with the mean score of 1.95, which indicates a poor practice level with regard to the usage of safety manuals. Among 354 respondents 272 (76.9%) were responded as did not use or only sometimes used emergency shower after splash (mean = 1.92) indicating that this critical safety measures were not being consistently practiced. The documentation of all occurring hazards in incident log sheets, which had a low mean score of 1.69, reflects inadequate safety standards. This lack of documentation may make it more difficult to identify and reduce workplace dangers, which could result in safety problems. Cleaning work areas after activities also received a somewhat better grade (mean of 2.01), but it still indicates that there is a need for improvement. Regarding to the monitoring of working area waste management system until its final disposal, 164 (46.3%) and 135(38.1%) of participants responded as not at all and yes sometimes respectively, which makes the monitoring of waste management until final disposal to be rated as low (mean score = 1.76) which will pose a significant risk to the health care workers as well as to the community. Around 72.6% of the study participant did not share their occupational health and safety knowledge with other staff members with the mean score of 2.08. Similarly, 75.4% of the respondents also had poor practice towards advising patients and their families on occupational health and safety (mean = 2). On the other hand, most respondents had good practice on obeying posted safety signage (94.9%) (M = 2.43), separate safe collection and disposal of sharps (M = 2.64) (67.2%, n = 238), using appropriate PPE during their jobs (M = 2.19) (70.1%, n = 248), washing their hands with proper detergent after occupation or contact with clients (M = 2.18) and wearing gloves during contact with blood, body fluids, non-intact skin, and mucous membranes (M = 2.66).

Table 4:- Practice of health care workers towards occupational health and safety

Variables	Not at all	Yes sometimes	Yes always	Mean	SD	Practice level
Are you using occupational health and safety manual or safety manual at workplace?	112(31.6%)	149(42.1%)	93(26.3%)	1.95	0.76	poor
Do you wear glove during contact with blood, body fluid, non-intact skin and mucus membrane specimen?	3(0.8%)	115(32.5%)	236(66.7%)	2.66	0.493	Good
Do you take emergence shower as soon as splash?	111(31.4%)	161(45.5%)	82(23.2%)	1.92	0.735	Poor
Do you wash your hand with proper detergent at the end of occupation or any contact with clients?	28(7.9%)	233(65.8%)	93(26.3%)	2.18	0.556	Good
Are you using appropriate personal protective equipment during your job?	19(5.4%)	248(70.1%)	87(24.6%)	2.19	0.513	Good
Do you record all occurring hazards (incidents) in occurrence log sheet and report to the responsible person?	164(46.3%)	135(38.1%)	55(15.5%)	1.69	0.725	Poor
Do you clean or disinfect your working area after end of each activity?	71(20.1%)	207(58.5%)	76(21.5%)	2.01	0.645	Poor
Do you monitor your working area waste management system until its final disposal?	138(39%)	163(46%)	53(15%)	1.76	0.695	Poor
Do you always perform separate safe collection and disposal of sharps?	11(3.1%)	105(29.7%)	238(67.2%)	2.64	0.541	Good
Do you share your occupational health and safety knowledge with other new staff members?	67(18.9%)	190(53.7%)	97(27.4%)	2.08	0.676	Poor
Are you advising clients on occupational health and safety problems?	87(24.6%)	180(50.8%)	87(24.6%)	2.00	0.702	Poor
Are you willing to accept comment of colleagues on your occupational health and safety gaps or practices?	16(4.5%)	117(33.1%)	221(62.4%)	2.58	0.579	Good
Do you check your health status at least every two years?	127(35.9%)	130(36.7%)	97(27.4%)	1.92	0.792	Poor
Do you obey appropriately for posted safety signage?	18(5.1%)	166(46.9%)	170(48%)	2.43	0.59	Good

CHAPTER SIX

Discussion

Every healthcare institution needs occupational health and safety as a fundamental element to deliver high-quality healthcare services and as a means of safeguarding patients, staff, and the public from dangers to their health. The current study showed that 70.9% of the respondent had high knowledge level. This result was almost comparable to the study done at public health facilities of Bhubaneswar Block, India in which 69.8% had good knowledge(17). The study is largely comparable with the previous study done in Palestine; Gaza strip that summarizes the majority of the nursing student had high level of knowledge towards occupational health and safety (78.2%) (18). This shows higher level of knowledge compared to the study done in healthcare facilities of West Arsi District, Southeast Ethiopia in 2018 which was 53.7%.(19) This difference may be attributed to difference in the educational level of the study participant, the majority of the respondent in this study had degree and above in contrast to the above study finding which they could get from school.

This finding is lower than 81.6% from the health institution of Gondar university referral hospital and 97 % from the study done at Accra Ghana. The reason for the above difference could be due to the difference in methodology, educational level, work experience, training opportunity, and personal characteristics of the study participants (13,20). This study also shows a comparable result with the findings in china which assessed the knowledge, attitude and practice regarding occupational protection against COVID-19 among midwives (21)

The findings of this study indicate that the majority of respondents (56.5%) had a positive attitude towards occupational health and safety (OHS). This positive attitude can likely be

attributed to the respondents' awareness of the risks associated with workplace environments, such as illnesses, injuries, and infections, which are common in healthcare settings. The current study's findings align closely with other studies conducted in similar healthcare settings. For instance, 61% of healthcare workers in public health facilities of Bhubaneswar Block, India reported a positive attitude towards workplace safety. Similarly, a study conducted at Gondar University Hospital in Ethiopia found that 64.2% of participants expressed a positive attitude towards occupational health and safety practices. Furthermore, another study conducted in Bahirdar City Administration Health Institutions revealed that 55.6% of respondents held a positive attitude towards infection prevention measures (13,22,23). These consistent findings across different regions and healthcare institutions suggest that there is a general trend among healthcare workers to value workplace safety.

The similarities between these studies may reflect shared experiences and concerns among healthcare workers, as well as the global emphasis on occupational health and infection prevention. The healthcare profession involves inherent risks, including needle-stick injuries, exposure to blood borne pathogens, and other infectious agents, which may explain the relatively high levels of concern.

With respect to the study participants practice towards occupational health and safety this study reported that the majority of the respondent had poor practice (50.2%) and only 49.2% had good practice. However, according to WHO (24), the rational model of health promotion is that high knowledge, will translate to positive attitude and subsequently good behavior, though in reality, the transition is not straight forward but depended on several factors such as experience and social factors. It is likely this account for the variance in knowledge of occupational hazards with what respondents reported to practice. This tell us the high knowledge level did not translated to practice.

Limitation of the study

The study uses a cross-sectional design, it can capture data at one point in time but cannot establish causal relationships or changes over time in knowledge, attitudes, and practices.

The sample is not representative of the entire population of healthcare workers, only certain departments or types of workers are included, the results might not reflect the views of all healthcare workers.

Limited funding affects the breadth and depth of the research, including the ability to conduct follow-up studies or comprehensive training programs based on findings and The study focused on specific aspects of occupational health and safety, potentially overlooking other relevant factors or broader systemic issues affecting KAP.

CHAPTER SEVEN

Conclusion and Recommendation

7.1 Conclusions

This study assessed knowledge, attitude, and practice (KAP) regarding Occupational Health and Safety (OHS) among healthcare workers in Addis Ababa's Selected tertiary government hospitals revealed critical insights into their understanding and implementation of safety protocols. Because OHS is an initiating concern for developing country and have limited utilized human or capital resources like Ethiopia in medical institutions and other organization. The overall study finding revealed that Health care workers who were participated in this study majority (70.9%) had good knowledge and 56.5% had positive attitude towards occupational health and safety and while 50.2% had Poor practice to wards occupational health and safety. Healthcare workers generally have a high level of awareness or knowledge regarding the types of occupational hazards they face, Knowledge of proper PPE usage, waste disposal and post-exposure protocols.

Regarding attitude most of the respondents recognize the importance of maintaining a safe and healthy work environment with a positive attitude. This generally implies that workers are aware of the risks associated with their jobs, preventing workplace accidents, improving healthcare delivery and understand the significance of adhering to safety protocols and regulations to protect themselves, staffs and patients.

In case of practice, majority the respondents had poor practice towards occupational health and safety that hospitals are inadequate or not up to expected standards, insufficient resources supply, work overload, limited support of management to inforce safety protocols and lack of adequate training on occupational health and safety practice. This could be a serious concern,

especially in healthcare settings where workers are exposed to various risks such as infectious diseases, hazardous chemicals, physical injuries, and mental stress.

7.2 Recommendation

Based on the finding and conclusion of the research the following recommendations are proposed by the researcher to improve the knowledge, attitude and practice of health care workers towards occupational health and safety.

- Implement regular training sessions on OHS standards and protocols for all levels of staff (including new hires). The training should cover key risks (biological, chemical, physical), proper use of Personal Protective Equipment (PPE), and reporting systems for workplace hazards.
- Ensure healthcare workers receive updated information regarding hospital-specific safety protocols, government regulations, and international best practices for infection control.
- Conduct periodic assessments (quizzes, surveys) to evaluate the knowledge levels of HCWs regarding OHS, and provide additional learning where gaps are identified.
- Create a culture of safety in the workplace where OHS is viewed as a shared responsibility. Management should lead by example, strictly following safety procedures, and recognizing workers who comply.
- Ensure adequate supply and accessibility of PPE in all departments. Regular audits should be done to ensure workers are using PPE correctly.
- Supervisors should regularly observe HCWs to ensure that safety protocols are being followed.
- Further detail study should be done in specific Hospitals to have a clear image on occupational health and safety.

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Annex I: Information sheet

Dear Participant:

My name is Zebideru Alayuu a 3rd year resident in Emergency and Critical Care Medicine at St.paul hospital Minillium medical college. I am doing this research as partial fulfillment of my specialty program. The study is designed to gather information about health care workers' knowledge, attitudes, and practices regarding occupational health and safety in a few chosen tertiary hospitals in Addis Ababa, Ethiopia. The study's findings will serve as a baseline for developing effective intervention strategies to raise health care workers' knowledge, attitudes, and practices in order to reduce work-related illnesses, injuries, and fatalities. Self-administered, semi-structured questions are included in the questionnaire. As a result, I respectfully ask your response to the questions honestly. Your provided information is kept private and is utilized exclusively for the objectives of this research. Do not hastate to contact the principal investigator with any questions you may have.

Zebideru Alayu

Phone number: 0942138451

E-mail: zebidealayu@gmail.com

Annex II: Consent form

I have understood that participation in this study is entirely voluntarily. I have been told that my answers to the questions will not be given to anyone else and no reports of this study ever identify me in any way. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me.

I understood that participation in this study does not involve risks, and Zebideru Alayu is the contact person if I have questions about the study, I agree to participate as a volunteer.

Signature: _____ Date: _____

Date of data collection _____ Questionnaire SN _____

Name of data collector _____

Annex III: Questioner

Part I: Socio-Demographic Characteristics of the Respondent

1.	Gender	1. male 2. female
2.	Age in years	_____years
3	Educational level	1. Diploma 2. Degree 3. Masters, specialist, sub specialist
4	Occupation	1. Doctor 2. Nurse 3. Laboratory technician
5	Year of work experience	_____years
6	Do you have orientation on occupational health and safety issue during your first employment time?	1. Yes 2. No
7	Have you ever been trained on occupational health and safety?	1. Yes 2. No
8	Have you taken risk assessment training?	1. Yes 2. No
9	Have you had an incident that resulted in physical injury to you during your practice?	1. Yes 2. No
10	Have you had history of personal violence?	1. Yes 2. No
11	Number of days absent from work due to injuries	

Part II: Knowledge Questions

1.	Information about occupational health and safety	1. Yes 2. No
3.	Knowledge about type of personal protective equipment when and how to use	1. Yes 2. No
4.	Identify type of personal protective equipment (Multiple response is allowed)	1. White Coat 2. Glove 3. Face Mask 4. Goggle 5. Face Shield 6. None
5.	Health hazards at work place (Multiple response is allowed)	1. Needle Stick 2. Splash 3. Musculoskeletal Disorder 4. Electrical Hazard 5. Chemical Hazard 6. Fall 7. Sound hazard 8. Others...specify____ _____
7.	Cause of infection transmission routes (Multiple response is allowed)	1. Inhalation 2. Ingestion 3. Injection 4. Physical Contact 5. No information
8.	Occupational health and safety is to be major and basic subject for any organization	1. Yes 2. No
9.	Facility management & employee should take the primary responsibility of occupational health and safety improvement at work place	1. YES 2. No
10	Awareness about post exposure prophylaxis and when to take it	1. yes 2. no

Part III: Attitude

1.	Do you agree that, in the absence of universal precaution hospital facilities can be the source of infection and epidemic diseases?	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
2.	Occupational Health and Safety is important for any organization	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
3.	Occupational health and safety training is helpful for health care worker behavioral change.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
4.	Occupational health and safety guideline and manuals are helpful for work place.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
5.	Health care workers are among highest risk of exposure health professionals.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
6.	All personal protective equipment's are available at working environment.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
7.	Occupational health injuries or any incident occurrence should be recorded in occurrence (incident) log sheet.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree
8.	Individual workplace risk exposure should be taken (counted) as a crisis of community	1. Strongly agree

		2. Agree 3. Disagree 4. Strongly disagree
9.	Risk assessment is a back bone for occupational health and safety.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree

Part IV: Practice

1.	Are you using occupational health and safety manual or safety manual at work place?	1. Yes always 2. YES sometimes 3. Not at all
2.	Do you wear glove during contact with blood, body fluid, non-intact skin and mucus membrane specimen?	1. Yes always 2. YES sometimes 3. Not at all
3.	Do you take emergence shower as soon as splash?	1. Yes always 2. YES sometimes 3. Not at all
4.	Do you wash your hand with proper detergent at the end of occupation or any contact with clients?	1. Yes always 2. YES sometimes 3. Not at all
5.	Are you using appropriate personal protective equipment during your job?	1. Yes always 2. YES sometimes 3. Not at all
6.	Do you record all occurring hazards (incidents) in occurrence log sheet and report to the responsible person?	1. Yes always 2. YES sometimes 3. Not at all
7.	Do you clean or disinfect your working area after end of each activity?	1. Yes always 2. YES sometimes 3. Not at all
8.	Do you monitor your working area waste management system until its final disposal end stage?	1. Yes always 2. YES sometimes 3. Not at all
9.	Do you always perform separate safe collection and disposal of sharps?	1. Yes always 2. YES sometimes 3. Not at all
10.	Do you share your occupational health and safety knowledge with other new staff members?	1. Yes always 2. YES sometimes 3. Not at all

11.	Are you advising clients on occupational health and safety problems?	1. Yes always 2. YES sometimes 3. Not at all
12.	Are you willing to accept comment of colleagues on your occupational health and safety gaps or practices?	1. Yes always 2. YES sometimes 3. Not at all
13.	Do you check your health status at least every two years?	1. Yes always 2. YES sometimes 3. Not at all
14.	Do you obey appropriately for posted safety signage?	1. Yes always 2. YES sometimes 3. Not at all