COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF EMERGENCY AND CRITICAL CARE NURSING

ASSESSMENT OF KNOWLEDGE AND PRACTICE TOWARDS DISASTER PREPAREDNESS AND ITS ASSOCIATED FACTORS AMONG FRONTLINE HEALTH CARE PROVIDERS WORKING IN THE EMERGENCY DEPARTMENT OF SELECTED GOVERNMENT HOSPITALS OF ADDIS ABABA ETHIOPIA, 2025

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JUNE, 2025

ADDIS ABABA, ETHIOPIA

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A RESEARCH THESIS SUBMITTED TO THE DEPARTMENT OF EMERGENCY AND CRITICAL CARE NURSING, COLLEGE OF HEALTH SCIENCE, ADDIS ABABA UNIVERSITY, IN PARTIAL FULFILLMENT OF MASTER OF SCIENCE DEGREE IN EMERGENCY MEDICINE AND CRITICAL CARE NURSING.

JUNE, 2025

ADDIS ABABA, ETHIOPIA

DECLARATION

I hereby declare that this MSc thesis is my original work and has not been presented for a degree in any other university, and all sources of material used for this thesis have been duly acknowledged.

Name: Hana Getahun

Signature: _____

Date: _____

THESIS APPROVAL SHEET

ASSESSMENT OF KNOWLEDGE AND PRACTICE TOWARDS DISASTER PREPAREDNESS AND ITS ASSOCIATED FACTORS AMONG FRONTLINE HEALTH CARE PROVIDERS WORKING IN THE EMERGENCY DEPARTMENT OF SELECTED GOVERNMENT HOSPITALS OF ADDIS ABABA ETHIOPIA, 2025

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ABBREVIATIONS AND ACRONYMS

AA-	Addis Ababa
AaBET-	Addis Ababa Burn, Emergency and Trauma hospital
ART-	Anti retroviral treatment
ED-	Emergency Department
HCP-	Health Care Provider
HCW-	Health Care Worker
ICS-	Incident command system
KAP-	Knowledge, Attitude and Practice
PI-	Principal Investigator
RTA-	Road Traffic Accident
SPHMMC-	Saint Paul hospital millennium medical college
SRS-	Simple random sampling
STI-	Sexually transmitted infection
TASH-	Tikur Anbessa Specialized Hospital
ZMH-	Zewditu memorial hospital

ABSTRACT

Background: Health professional's disaster preparedness is a key factor to minimize the effects of disaster and to save resources as well as human lives. Therefore the level of knowledge and practice of health professionals should be determined frequently in order to equip professionals with the basics of disaster preparedness.

Objective: The aim of the present study was to assess knowledge and practice towards disaster preparedness and its associated factors among frontline health care providers working in the Emergency Department of selected government hospitals of Addis Ababa, 2025.

Methods: A cross sectional study was conducted to assess the knowledge and practice of frontline health care providers towards disaster preparedness at randomly selected public Hospitals in Addis Ababa, Ethiopia from April 1to 30, 2025.Data were collected by pretested self-administered questionnaire using kobo tool box, and statistical package for social sciences version 27 software was utilized to analyze the collected data. Descriptive statistics, chi-square test, binary logistic regression and multivariate logistic regression were utilized to identify factors associated with knowledge and practice of frontline health care providers towards disaster preparedness. Furthermore, P value <0.05 was taken statistical significant for the statistical outputs.

Result: A total of 170 health professionals were included in this study. Seventy nine (46.5%) of them were males and 65 (38.2%) of them were under the age group of 25-29 with the mean age of 31$\pm$4 SD.Eighty six (50.6%) of them had good knowledge and 51 (30%) of them have good practice. Drills, working hospitals and level of education were the variables that showed significant association with the good knowledge of participants while having disaster preparedness plan, being a member of disaster committee and educational level were the variables that showed significant association with good practice at p value<0.05.

Conclusion: The study showed that over half of participants had good knowledge of disaster preparedness while only one third of them had good practice, showing a significant gap between knowledge and practice levels, also varying levels of knowledge and practice among professions.

Key words: Addis Ababa, Disaster Preparedness, health care providers, knowledge, practice

1. INTRODUCTION

1.1 Background

According to the United Nations International Strategy for Disaster Reduction (UN-IDSR), a disaster is defined as a major disturbance of a community's or society's normal operations that results in extensive losses of people, property, money, or the environment that are greater than what the impacted community or society could reasonably be expected to recover from on its own.(1)

In addition to occurring in space, disasters also occur in time. They may last for a short time or a long time. Disease outbreaks, storms, earthquakes, and conflicts are examples of abrupt occurrences (or shocks), but they can also result from a buildup of stressors, such as protracted drought, resource depletion, unplanned urbanization, climate change, political unrest, and economic downturns(2).

Natural, man-made, and hybrid disasters are the three categories into which disasters fall. All catastrophic incidents are thought to fall under one of the three categories of disasters.(3) Natural disasters are catastrophic events brought on by natural causes, while man-made disasters are catastrophic events brought on by human decisions. Sociotechnical and military disasters, such as plant or manufacturing failures, transportation failures, and production failures, are examples of man-made disasters and the three categories of natural disasters can be distinguished: hydro-meteorological, geophysical, and biological.(4)Although catastrophes range in their traits and effects, they all share the trait of being severe.(3)

Disaster preparedness can be described as the actions taken to prepare for and reduce the effects of disasters. Around the world, disaster preparedness is acknowledged as a collection of crucial actions to lessen the effects of calamities (5). All response system levels should be involved in disaster preparedness. All planning efforts that occur at the state, institutional, and personal levels are included in being prepared to handle a disaster (6).

Numerous pressures and a heightened emphasis on danger, however, may be demotivating elements for all organizations, but especially for healthcare workers who assist individuals in need during emergencies and disasters (6).A number of detrimental effects can arise from inadequate

disaster planning, such as increased psychological distress among medical professionals, improper disaster response, and impaired safety of healthcare professionals, hospital overcrowding, and high death rates(5).

As a result, it is important to draw attention to and resolve the perceived worries of healthcare professionals. Although there are recommendations to help health care providers respond to emergency situations, elements including communication, family support, training, and individual qualities and preparedness may have an impact on healthcare professional confidence regarding disaster(6).Hence, the aim of this study is to assess the knowledge and practice of health care providers towards disaster preparedness and the factors associated with it.

1.2 Statement of the problem

Around the world, the influence of disaster has risen. Approximately 7,348 natural disaster incidents were reported to have taken the lives of 1.2 million people and impacted the life of 4 billion people in 2000-2019.Before the end of 2021, 2 million people died of COVID-19 with ongoing increment in the number of infected occurrence of new variations. Disaster highly affect developing countries and climate change is the major contributing factor for increased danger (7).

According to the Global Facility for Disaster Reduction and Recovery Ethiopia is vulnerable to a number of natural disasters, including drought, floods, landslides, diseases, earthquakes, and fires,. The nation is among the 20 that have been shown to have the lowest economic resilience and the greatest susceptibility to natural disasters(8).

Ethiopia has high risk for floods and drought with northern and eastern regions being highly affected. Approximately 1.5 million people are impacted by drought annually but this number can rise on years of drought. Once a decade there will be a loss of 25 million in agricultural earning(9).

According to UN Office for the Coordination of Humanitarian Affairs (OCHA), recent records flood affected 16,000 people in Gambella, 20,466 in Afar, displaced 6,600 people, 400 livestock, and 3,000 poultry in Amhara region. On the same report approximately 7,000 and 12,000 people were affected by flood in Oromia and Southern Ethiopia respectively. In addition to the floods many regions have indicated landslide events caused by heavy rainfalls in mountainous regions. The recent landslide event in Gofa zone took the lives of 243 people, 6,600 were withdrawn from the two kebeles and a total of 24,000 people were evacuated from the risk prone areas. Despite the absence of outbreak report there is an increased risk of waterborne disease such as cholera and also a rise in malaria cases as a result of stagnant flood water and lack of bed net(10).

World health organization (WHO) reported that due to road traffic accident (RTA) in Ethiopia there is approximately 400-500,000 Ethiopian birr (ETB) being lost and a cause of almost 2000 losses of life in which 48% are pedestrians, 45% passengers and 7% drivers.in addition to this according to the Ethiopian demographic and health survey RTA are the second most causes of accident and injury next to unintentional falls (11).

Not only deaths, disabilities and quality of life are the effects of disaster but they also greatly impact the health system. Harm and devastation of health facilities due to disaster interfere with the appropriate delivery of health service, disruption of health programs, death of health care providers and excessive workload of health services(12).

Medical professionals, particularly those working in tertiary care and general hospitals are the front liners in disaster. Well organized crisis response relies on the readiness of front liners and accessibility of materials needed (13).

The level of knowledge and preparedness of health care providers (HCP'S) towards the importance of disaster preparedness while a sudden crisis occurs is not clearly known. It is very important to know the knowledge and preparedness of HCP'S for the purpose of plan development, drills and educational programs about disaster response in both the developing and developed nations(6).

Using different tools such as education programs, exercises and trainings to equip professionals with the basic knowledge and skills to disaster management has a great role for building assurance and great knowledge. Including disaster management course to undergraduate medical programs can also increase preparedness.(13)

Knowing the increasing frequency and impact of disasters in Ethiopia, understanding the knowledge and level of practice of healthcare professionals especially those working in the emergency department including lab technologists, pharmacists, nurses, and physicians is very crucial for effective disaster response.

Despite the fact that there are some researches done on this area, there are still gaps on them as they don't explore the role of inter professional collaborations for disaster response. Hence, this research will fill a critical gap regarding disaster preparedness among healthcare professionals working in emergency departments of government hospitals of Addis Ababa (AA).

1.3. Significance of the study

The significance of this study lies in its potential to promote disaster preparedness and response strategies among front liners working in the emergency departments of government hospitals in Addis Ababa.

It will also contribute to a better understanding of how these factors influence readiness and response capabilities. It will also try to determine the role of inter professional collaboration in improving disaster management.

Practically the research's findings will provide insights for policymakers and healthcare administrators on the strengths and weaknesses of current disaster preparedness training programs. This research can lead to the development of more effective training and education initiatives by identifying knowledge gaps and areas for improvement among various health care providers. Furthermore, it can promote a structured approach to enhance inter professional collaboration, ensuring that all professionals work cohesively during disasters, thus optimizing resource utilization and improving patient care.

As for future research directions, the study will also highlight areas for future research by identifying key factors that influence disaster preparedness. The exploration of these dynamics, subsequent studies can investigate specific interventions aimed at improving knowledge and practices, as well as assess the long-term impact of enhanced collaboration among healthcare professionals.

This study is significant not only for its immediate benefits in disaster preparedness but also for its broader implications in building a resilient healthcare system in Addis Ababa as well as Ethiopia. The research will be done to understand and improve the role of different health professionals on disaster management. With that, the research holds the potential to save lives and minimize the impact of disasters on vulnerable populations.

2. LITERATURE REVIEW

Disasters, both natural and man-made, pose significant challenges to public health systems worldwide. In such crises, front-line healthcare professionals play major role in mitigating harm and ensuring effective response strategies. The knowledge and practices of healthcare professionals during disasters are critical for minimizing casualties, maintaining healthcare services, and supporting recovery(14).

This literature review aims to explore existing studies on the knowledge and practices of front-line healthcare professionals in disaster situations. It seeks to identify common themes, assess the effectiveness of current training programs, and highlight areas for improvement in disaster preparedness and response.

It focuses on peer-reviewed studies published in the past few years focusing on health professional's knowledge and practice towards disaster preparedness, emphasizing global perspectives on healthcare workers' disaster knowledge and practices. It also tries to navigate the associated factors impacting health care professional's level of knowledge and practice.

Finally, it consists of a conceptual framework that shows the factors associated with the knowledge and practice of HCP using a figure.

2.1. Knowledge towards disaster preparedness

A cross-sectional study conducted in Malaysia among emergency department (ED) medical personnel in 2020 reported that 91.6% of participants had adequate knowledge of disaster preparedness(15).Similar study done in Saudi Arabia among undergraduate nursing students in 2023 found that 69% of participants demonstrated sufficient knowledge in this area(16). Additionally, a study conducted in 2020 at Shiraz University in Iran among hospital staff showed that 74.5% of the participants possessed good knowledge regarding disaster preparedness(17). The finding indicated that health care profesionals have high level of disaster preparedness demonstrating the importance of education and awareness in this critical domain.

A descriptive cross-sectional study conducted in Yemen on 2017 reported that 32.0% of participants had good knowledge, 53.5% had fair knowledge, and 14.5% demonstrated poor knowledge about disaster preparedness(18).Similarly, in 2022 a descriptive and analytical cross-

sectional study at Ligula Regional Referral Hospital in Mtwara, Tanzania, assessed healthcare providers' knowledge, attitudes, and practices (KAP) towards disaster and emergency preparedness. The study revealed that 53.2% of the participants had adequate knowledge towards disaster and emergency preparedness(19). In contrast, a cross-sectional study conducted in on 2018 Egypt among emergency nurses found that 72.7% of the nurses had unsatisfactory knowledge regarding disaster management preparedness(20). These findings highlight varying levels of knowledge across different regions and healthcare roles, emphasizing the need for targeted education and training programs.

In Ethiopia, a cross-sectional study is conducted to assess the knowledge, attitudes, and practices (KAP) of healthcare professionals working in the emergency department (ED) units of South Gondar hospitals in 2020. The study found that 51.7% of participants had poor knowledge of disaster emergency preparedness (21). Similarly, an institutional-based cross-sectional study conducted in the same year at referral hospitals in the Amhara Regional State assessed the preparedness of nurses working in EDs for emergencies and disasters. The findings revealed that 51% of nurses had inadequate knowledge in this area.(22).These results are telling that there is a significant knowledge gaps among healthcare professionals in Ethiopia regarding disaster preparedness.

In Addis Ababa, a study assessed the knowledge, attitudes, and practices (KAP) of frontline healthcare professionals (HCPs) working in private general hospitals in 2022. The study revealed that 64% of participants had a poor level of knowledge regarding disaster preparedness (7).Similarly, a study conducted in 2018 at Tikur Anbessa Specialized Hospital (TASH) examined the KAP of healthcare workers (HCWs) towards hospital disaster preparedness. The findings showed that 50.8% of participants had good knowledge about disaster preparedness and hospital plans, while 49.2% demonstrated poor knowledge(23).

2.2. Practice towards disaster preparedness

A study conducted in 2020 Malaysia among emergency department (ED) medical personnel found that 61.1% of respondents demonstrated good practice towards disaster preparedness(15). In contrast, a cross-sectional study investigating the knowledge, attitudes, and practices (KAP) of

nursing students towards disaster preparedness in Saudi Arabia in 2023 reported that only 16% of participants exhibited adequate practice(16). Similarly, in 2020 a cross-sectional analytical descriptive study conducted at Shiraz University in Iran found that 29.2% of participants showed good practice in disaster preparedness(17). Additionally in Yemen, on 2017 descriptive cross-sectional study was conducted and revealed that 58.9% of respondents had not participated in any exercises related to emergency and disaster preparedness (18).These studies suggest varying levels of practical preparedness among healthcare professionals across different countries, pointing to gaps in disaster response training and exercises.

On a study conducted in Mtwara,Tanzania on 2022 to assaess the KAP of HCPs towards disaster and emergency preparedness only 23.4% of the respondents reported that disaster drills are done at their working units in the hospital(19).

In 2020, an institutional-based cross-sectional study conducted in South Gondar, Ethiopia, assessed the knowledge, attitudes, and practices (KAP) of health professionals in the emergency unit towards disaster and emergency preparedness. The study revealed that 67.5% of participants had inadequate practice regarding disaster preparedness(21).Similarly, another institutional-based cross-sectional study conducted in hospitals across the Amhara Regional State reported that only 11.8% of the study subjects were familiar with disaster preparedness and handling(22).These findings indicate significant gaps in the practical preparedness of healthcare professionals in Ethiopia, suggesting the need for more comprehensive training programs.

In Addis Ababa on 2022 a multi center cross sectional study was connducted to assess HCPs KAP towards disaster risk management in private general hospitals in AA and found that 89.1% of the participants had poor level of practice(7).Simillarly another study was conducted at TASH on 2018 on health care workers and revealed that the level of practice was only 8.3%(23).

2.3. Factors associated with knowledge and attitude towards disaster preparedness

According to the study conducted in Malaysia on 2020 among ED personnel experience and training in disaster response were stated to be significant predictors associated with increased level of knowledge. Duration of working experience is also associated with increased level of practice(15). Similarly, on another study conducted to assess the level of knowledge, attitude and practice of hospital staff to prepare for disasters in Iran on 2020 reported that work experience had

a meaningful relationship with practice(p=0.002) Gender of participants also has a significant relationship with practice(p=0.009), females has higher scores of practice than men and also marital status was significantly related with practice(p=0.006)married people had higher scores than unmarried ones(17).On a study conducted in Yemen in 2017, educational level was reported to be the key factor in the knowledge gap among respondents($p<0.05$) , postgraduate staff were more knowledgeable than graduates. Physicians were better in knowledge than other subgroups of health specialties ($p<0.05$) (18).

Coming to Ethiopia, according to a cross-sectional study conducted to assess the knowledge, attitudes, and practices (KAP) of healthcare professionals working in the emergency department (ED) units of South Gondar hospitals in 2020 age category and profession of the respondents were reported to have a significant effect on the knowledge of the respondents, participants with age group of 31-40 years were two times more knowledgeable than participants with age groups of 30 years, in addition nurses were twice knowledgeable than other health professionals included in the study(AOR=2.64,95% CI(1.06,6.59). Respondents with good knowledge were two times more likely to have adequate practices (AOR=2.149, 95%CI (1.26, 3.67) than those with poor knowledge and participants older than 40 years were 3 times (AOR=3.49, 95%CI (1.25, 9.68) more likely to have adequate practices than who were less than 40 years of age (21).

According to the study conducted in 2022 assessed the knowledge, attitudes, and practices (KAP) of frontline healthcare professionals (HCPs) working in private general hospitals lack of previous training (p=0.011,AOR=.406(.202-.815), 95%CI), inadequate level of practice (p=.000, AOR=.049(.014-.177), 95% CI and health experience below one year (p=.046, AOR=.044(.002-.948), 95% CI) were negatively associated with good level of knowledge(7).

2.4. Conceptual framework

The conceptual framework of this study outlines the relationships between the socio demographic factors and the profession related factors and the dependent variables which are the knowledge and practice about disaster preparedness. The socio demographic factors examined include the age, sex, marital status and educational level of participants which are expected to influence the level of knowledge and practice of participants towards disaster preparedness (15, 17, 18, and 21).

Profession related factors such as profession and work experience are also expected to influence the knowledge and practice towards disaster preparedness. Knowledge of health professionals is expected to influence the level of practice (7, 18, and 21).

This framework is adapted and developed based on relevant literature, tailored to specific context of the study. By examining these relationships, the study aims to identify gaps and provide actionable insights for improving professional's disaster preparedness level of knowledge and practice. The methodology includes assessing these variables through structured questionnaires and applying statistical analysis, such as regression, to draw meaningful conclusions. This approach ensures a comprehensive understanding of the factors influencing knowledge and attitudes towards disaster preparedness, which can inform interventions to enhance professional's level of knowledge and practice towards disaster preparedness.

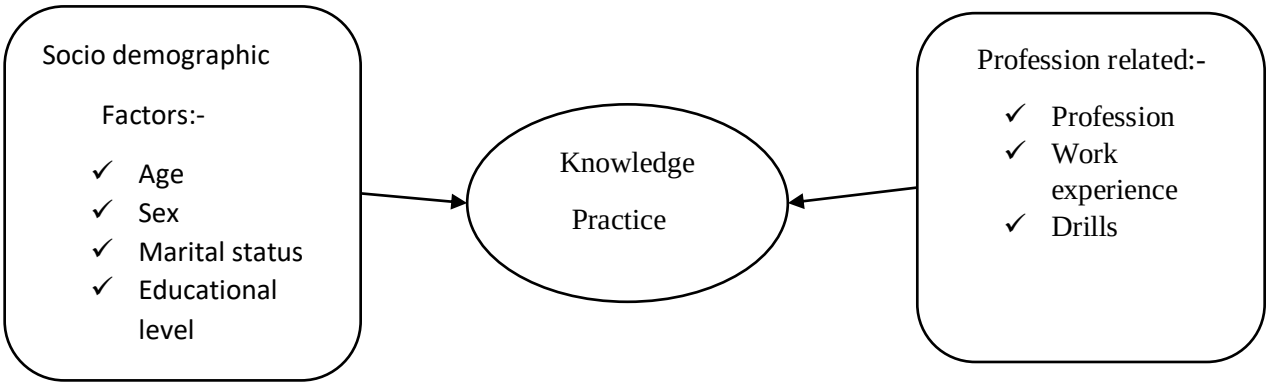

Figure 1: Conceptual frame work showing the relationship between outcome variable and independent variables on assessment of knowledge and practice of frontline health care workers towards disaster preparedness and its associated factors in the ED of selected government hospitals of AA, 2025(15, 17, 18, 21).

3. OBJECTIVES

3.1. General objectives

- To assess knowledge and practice of frontline health care workers towards disaster preparedness and its associated factors in the ED of selected government hospitals of AA,2025.

3.2. Specific objectives

- To assess the knowledge of frontline health care workers towards disaster preparedness in the ED of selected government hospitals of AA,2025.
- To assess the level of practice of frontline health care workers towards disaster preparedness in the ED of selected government hospitals of AA,2025.
- To determine the factors associated with knowledge and practice of frontline health care workers towards disaster preparedness in the ED of selected government hospitals of AA,2025.

4. METHODS AND MATERIALS

4.1. Study area and period

The study was conducted in selected government hospitals of Addis Ababa which is the capital city of Ethiopia from April 1-April 30,2025.

There are a total of twelve (12) government hospitals in Addis Ababa of which five are general hospitals, six are tertiary hospitals, and one trauma center. The study was conducted at selected government hospitals from each group in the city(24).The selected hospitals are Yekatit 12 hospital medical college,Minilik hospital,AaABET hospital,Zewditu memorial hospital and Tikur Anbessa specialized hospital.

Yekatit 12 Hospital, which is known as Yekatit 12 Hospital Medical College, is a major healthcare organization located in Addis Ababa, Ethiopia. which was established in 1923, it has a long history of providing medical services and training healthcare professionals.It provides a wide range of medical services, including emergency Services, Outpatient and Inpatient Care, Specialized Medical Services. Laboratory Services, Burn Management, Family Medicine and Healthcare Quality Programs(25)

Menelik II Referral Hospital is a major public healthcare facility located in Addis Ababa, Ethiopia, which was established in 1909 and named after Emperor Menelik II, it is one of the oldest hospitals in the country and serves as a tertiary care center with a capacity of over 800 beds. The hospital offers specialized services in various fields, including cardiology, neurology, and oncology, and serves approximately 15,000 patients daily with a staff of over 2,300. Menelik II Referral Hospital provides various medical services, including but not restricted to Specialized Medical Care, Dialysis Center, Emergency and Inpatient Care.The hospital is governed by the Addis Ababa City Administration(26).

Zewditu Hospital is a public hospital in central Addis Ababa, Ethiopia. It was constructed, possessed and ran by the Seventh-day Adventist Church, but was publicly owned during the Derg regime in about 1976. Zewditu Hospital is Ethiopia's foremost hospital in the treatment

of Anti retroviral treatment (ART) patients and currently treats over 6,000 each month. Zewditu became the largest HIV clinic in Ethiopia, with 14,000 patients in its care. Since, (ART) programs have been initiated in other hospitals around the country, relieving pressure on the hospital.The hospital also deals with palliative care, HIV counseling and testing.sexually transmitted infection(STI) services and Post-exposure prophylaxis (PEP) services(27).

Addis Ababa Burn, Emergency & Trauma Hospital (AaBET Hospital) is an associate of St. Paul's Hospital Millennium Medical College and is inclusive of four major departments; Emergency Medicine and Critical Care, Plastic Reconstructive and Hand Surgery, Orthopedics & Traumatology, and Neurosurgery. AaBET Hospital is a advanced and successfully managed upper-level teaching hospital with 190 and 190 bed-ward departments as well as a center for traumatology, physiotherapy, and spinal disorders(28)

Tikur Anbessa Hospital, is a leading specialized hospital located in Addis Ababa, Ethiopia. Established in 1964, it serves as a major teaching hospital affiliated with the School of Medicine at Addis Ababa University. The hospital provides a wide range of specialized clinical services and is a key training center for medical students and health professionals from Ethiopia and other African nations. reats over 500,000 outpatients and more than 21,000 inpatients annually, making it the largest referral hospital in Ethiopia(29).

4.2. Study Design

A cross sectional study was conducted to assess the knowledge and practice of frontline health care providers towards disaster preparedness.

4.3. Population

4.3.1. Source Population

All front line health care providers at public hospitals of Addis Ababa, Ethiopia.

4.3.2. Sampling population

All front line health care providers including physicians, nurses, laboratory technologists and pharmacists working in the ED at randomly selected public hospitals of Addis Ababa city.

4.3.3. Study population

Selected front line health care providers at selected public hospitals who were found during the actual data collection period, will give consent to participate and who fulfill the eligibility criteria.

4.4. Eligibility Criteria

4.4.1. Inclusion Criteria

All front line health care providers who are permanent employee of the hospital and who have ED experience more than 1 year.

4.4.2. Exclusion Criteria

Front line health care providers who are on annual, sick & maternal leave and also on professional trainings, assigned at departments other than emergency at the time of data collection.

4.5. Study Variables

4.5.1. Dependent Variables

- Knowledge of front line health care providers towards disaster preparedness.
- Practice of front line health care providers towards disaster preparedness.

4.5.2. Independent Variables

- Socio demographic
    - ✓ Age
    - ✓ Sex
    - ✓ Educational level
    - ✓ Marital status
- Profession related

- ✓ Profession
- ✓ Previous drill
- ✓ Work experience
- ✓ Work place
- ✓ Previous exposure to disaster

- Institutional related
  - ✓ Presence of disaster response plan
  - ✓ Presence of disaster committee

4.6. Sample size determination and sampling technique

4.6.1. Sample size determination

Sample size is calculated using appropriate descriptive study design for quantitative data by taking 95% confidence level using the formula;

$$n = (Z_{\alpha/2})^2 \, p \, (1-p) / d^2 \, (30).$$

Where;

- n=minimum sample size for each group
- $Z_{\alpha/2} = Z_{0.05/2} = Z_{0.025} = 1.96$ -from Z table(at 95% confidence interval & 5% type 1 error)
- d = Margin of error (0.05)

According to the study conducted at Addis Ababa private general hospitals in 2022, the proportion of health care providers having good knowledge and practice towards disaster was 64% and 10.9% respectively (7). By substituting these two proportion values into the formula;

$n = (1.96)^2 \, (0.64) \, (0.36) / \, (0.05)^2 \approx 354$ Using previous proportion of knowledge.

$n = (1.96)^2 \, (0.109) \, (0.891) / \, (0.05)^2 \approx 150$ Using previous proportion of practice.

As the number of source population which is obtained from department heads is finite (318), the sample size (354) is reduced using the appropriate correction formula to adjust the standard error.

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where, n=final sample size

n_o=sample size calculated

N=population size

Therefore, by substituting the values the final sample size will be $167.7 \approx 168$

By adding 10% non-response rate (17) a total of 185 study participants were included in the study.

The calculated sample was allocated proportionally for each hospital based on the number of permanent health professionals at the respective hospitals.

4.6.2. Sampling Technique

The study participants will be recruited by stratified random sampling method at each hospital as indicated by the figure below.

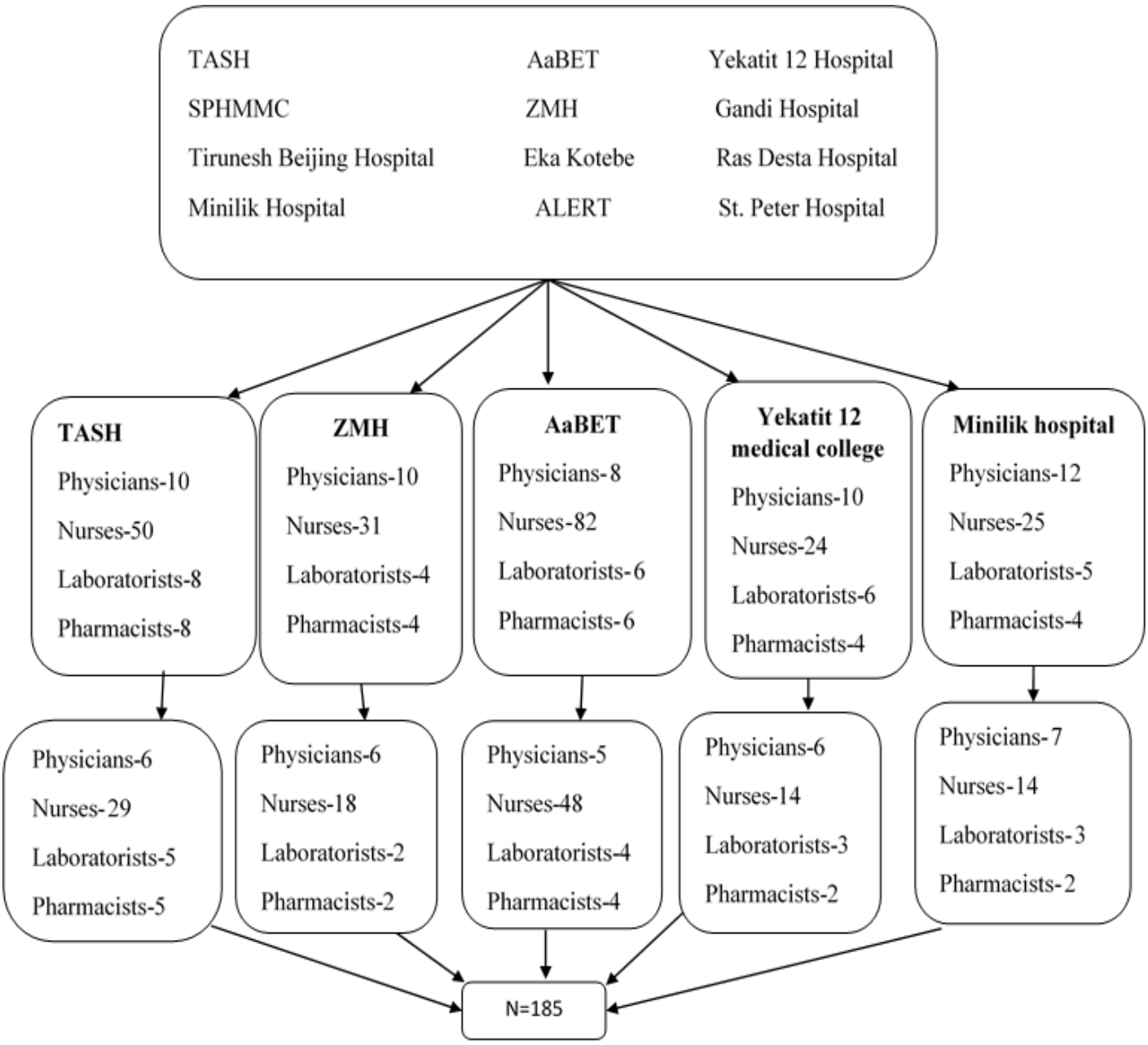

Figure 2: sampling procedure for the assessment of knowledge and practice of frontline health care workers towards disaster preparedness and its associated factors in the ED of selected government hospitals of AA, 2025

4.7. Data Collection Procedure

After obtaining informed consent from each participant, data was collected through self-administered questionnaire with the aid of a kobo toolbox application during the data collection period by going to their work place.

4.8. Data collection tool

The questionnaire for the data collection was prepared by reviewing related articles and including variables from these articles with modification to the current study design and research objective and also a tool was adapted from emergency preparedness information questionnaire and WHO checklist for hospital's disaster preparedness(31, 32).It contained 7 questions to assess sociodemographic characteristics of respondents. The knowledge was assessed through a combination of 18 Likhert scale items and 4 multiple choice questions. In 18 Likhert scale questions Respondents indicated their level of knowledge with each statement using a 5-point scale ranging from extremely familiar (5) to not familiar (1) and the practice result was assessed by 14 yes/ no questions.

4.9. Data analysis and interpretation

Data was entered and analyzed by using SPSS version 27 statistical software package. To assess knowledge liker scale questions were dichotomized in to (0)for participants who answered not familiar and slightly familiar and (1)for participants who answered moderately familiar, very familiar and extremely familiar , and from the multiple choice questions respondents who chose the correct answer were scored as (1), and who selected the wrong answers were scored as (0). The total knowledge score for each participant was the sum of the Likert scale questions and average and multiple choice questions and individuals who scored above the mean score which was 11 were reported to have good level of knowledge and individuals with scores below the mean were reported to have poor knowledge. For practice, Participants who selected "Yes" were scored as 1 and who chose "No" were scored as 0.The total practice score for each participant was the sum of the Yes/No questions. The mean score was found to be 11 and individuals with scores greater than the mean score indicating good level of practice and individuals with scores below the mean score were reported to have poor practice. After testing the data for normality,

the descriptive data like frequency and percentage, was calculated and Chi-square tests as well as binary logistic regression analysis and multivariate logistic regression analysis were used appropriately. Besides this the level of significance P value <0.05 was considered as statically significant. Model fitness was checked using the Hosmer and Lemeshow goodness-of-fit test. A p-value > 0.05 was considered indicative of a good model fit.

4.10. Data Quality Assurance

Data quality was assured before, during and after data collection. Before the actual data collection Pretest was done on 10% of the sample size at St. Paul hospital. Corrections and modifications were done according to the result and participants feedback. All data collectors had taken a one day training before data collection about the objectives of the study, every data item to be collected, the issues of consent and the rights of the respondents. During the data collection period, the purpose of data collection and the importance of the study was told to the participants to generate a quality data. After data collection, the collected data was checked for completeness and consistency by the investigator.

4.11. Operational Definitions

Drills: exercises in which health care workers simulate the circumstances of a disaster.(7)

Disaster preparedness plan - an agreed set of arrangements for preparing for, responding to, and recovering from emergencies, and involves the description of responsibilities, management structures, strategies, and resource and information management with a view of protecting life, property and the environment.(23)

Knowledge on disaster preparedness: refers to health professional's level of awareness on disaster preparedness respondents who have scored greater than or equal to the mean value are reported to have good knowledge and respondents with scores below the mean are considered to have poor level of knowledge.

Practice on disaster preparedness: refers to health professional's level of practice on disaster preparedness. Respondents who have scored greater than or equal to the mean value are reported to have good practice and respondents with scores below the mean are considered to have poor level of practice.

Frontline healthcare providers: all health professionals working in the emergency department who are the first respondents when a sudden crisis occurs.

4.12. Ethical Considerations

Before data collection, written consent was obtained from the Research and Ethics Review Committee (RERC) of Addis Ababa University College of Health Science, Department of Emergency and Critical Care Nursing, Addis Ababa Public Health and Emergency Management Directorate and research departments of each selected Hospital. Furthermore, informed consent was obtained from each study participant before the actual data collection and the purpose of the study was explained to the study participant and they were informed about the information obtained from them will be confidential.

4.13. Dissemination plan of Results

The study findings is disseminated to Addis Ababa University, College of Health Sciences Department of Emergency and Critical Care Nursing (ECCN) and the Emergency department of each selected hospital. Furthermore, the findings of the study will be submitted to national or international peer reviewed journals for possible publication. The findings will be presented at national and international scientific conferences.

5. RESULT

5.1. Socio demographic characteristics of the study participants

From the total 185 participants, a total of 170 study participants answered the questionnaire giving a total response rate of 91.9%.From the total study participants 77(45.2%) were male and 91(54.7%) were female. Regarding profession majority of the respondents were nurses 124(72.9%).About 65(38.23%) of the participants were under the age group of 25-29 with the mean age of 31±4 SD.More than half of the participants 100(58.8%) were married.(Table 1)

Table 1:Sociodemographic characteristics of frontline health care workers in the ED of selected government hospitals of AA, 2025

Variable	Category	N(%)	Mean &SD
Age category	20-24	8(3.53%)	31±4
	25-29	65(38.23%)	
	30-34	54(31.76%)	
	35-39	43(25.29%)	
Sex	Male	77(45.2%)	
	Female	93(54.7%)	
Marital status	Married	100(58.82%)	
	Single	62(36.47%)	
	Divorced	6(3.53%)	
	Widowed	2(1.17%)	
Working hospital	TASH	40(23.53%)	
	AaBET	56(32.94%)	
	ZMH	28(16.47%)	
	Minilik hospital	23(13.52%)	
	Yekatit 12 hospital	23(13.52%)	
Profession	Nurse	124(72.94%)	
	Lab technician	18(10.59%)	
	Pharmacy	14(8.23%)	
	Physician	14(8.23%)	

Level of education	Masters/specialty	29(17.05%)	
	Degree	138(81.17%)	
	Diploma	3(1.76%)	
ED work experience	1-5	124(72.94%)	4.3±2.9
	6-10	40(23.52%)	
	11-15	6(3.52%)	

5.2. General information of participants about their facility related to disaster

Majority of the study participants 115(67.6%) have not conducted any drill in their institution. When asked about previous exposure to disaster, 123 (72.4%) of them reported they have not faced any disaster.One hundred two (60%) of them reported that their facility have disaster preparedness plan and 44(25.9%) of the participants don't know if their facility have disaster committee.(Table 2)

Table 2:General information of participants about theit facility related to disaster at selected government hospitals of Addis Ababa,2025

Questions	Response	N(%)
Have you conducted any drill in your institution?	Yes	55(32.3%)
	No	115(67.64%)
Have you faced any disaster in your institution?	Yes	47(27.6%)
	No	123(72.4%)
Do you have disaster preparedness plan in your facility?	Yes	102(60%)
	No	68(40%)
Is there any disaster committee in your facility?	Yes	101(59.41%)
	No	25(14.7%)
	I don't know	44(25.9%)

Majority of the respondents 18(78.26%) working at Minilik hospital reported that they have conducted disaster drill in their institution.(Figure 3)

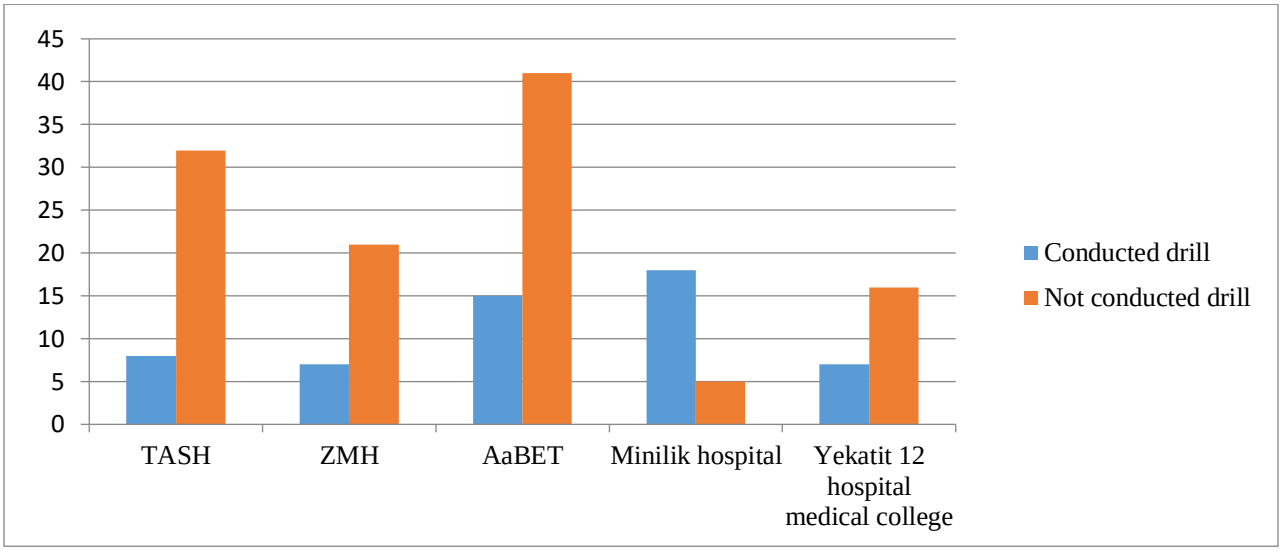

Figure 3:Level of drill participation amog health care providers working in the ED of selected government hospitals of Ababa,2025

5.3. Knowledge of participants regarding disaster preparedness

According to the knowledge mean score, 86(50.6%) of the participants had good overall knowledge while 84(49.4%) of them have poor overall knowledge.

Majority of the participants 117(68.8%) of them correctly answered the definition of disaster and 119(70%) of them correctly answered about definition of disaster preparedness.

Regarding the questions about Incident command system(ICS), 95(55.9%) of them possessed a poor knowledge. Among the study participants 96(56.5%) of them have good knowledge about triaging during disaster and 114(67.1%) have poor communication knowledge during disaster.(Table 3)

Table 3:Knowlege distribution among frontline health care providers working in the ED of selected government hospitals of Addis Ababa,2025

Variables	Category	Good knowledge	Poor knowledge
Age category	20-24	1(0.58%)	5(2.94%)
	25-29	37(21.76%)	30(17.64%)
	30-34	21(12.35%)	33(19.41%)
	35-39	27(15.88%)	16(9.41%)
Sex	Male	39(22.9%)	38(22.35%)
	Female	47(27.6%)	46(27.05%)
Marital status	Married	55(32.35%)	45(26.47%)
	Single	27(15.88%)	35(20.58%)
	Divorced	3(1.76%)	3(1.76%)
	Widowed	1(0.58%)	1(0.58%)
Level of education	Masters/specialty	23(13.5%)	6(3.52%)
	Degree	62(36.47%)	76(44.7%)
	Diploma	1(0.58%)	2(1.17%)
Working hospital	TASH	18(10.58%)	22(12.94%)
	AaBET	24(14.11%)	32(18.8%)
	ZMH	13(7.64%)	15(8.82%)
	Minilik hospital	20(11.76%)	3(1.76%)
	Yekatit 12 hospital	11(6.47%)	12(7.05%)
Profession	Nurse	68(40%)	56(32.9%)
	Lab technician	4(2.35%)	14(8.23%)
	Pharmacy	2(1.17%)	12(7.05%)
	Physician	12(7.05%)	2(1.17%)
ED work experience	1-5	58(34.11%)	66(38.82%)
	6-10	23(13.5%)	17(10%)
	11-15	5(2.94%)	1(0.58%)

From the study participants professional category(85.7%)of the physicians had generally good level of knowedge followed by nurses(55%),laboratory technologists(22.2%)and pharmacists(14.2%).(Figure 4)

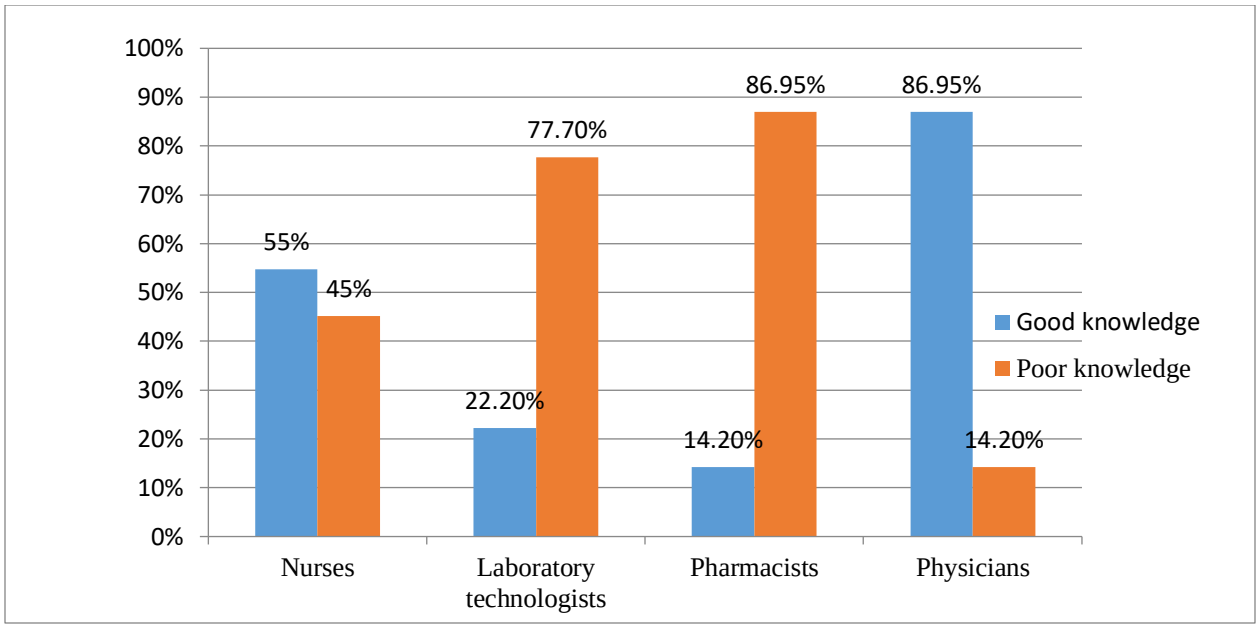

Figure 4:Knowledge distribution among professions of selected government hospitals of Addis Ababa,2025

5.3.Practice of participants regarding disaster preparedness

About 119(70%) of the total study participants had poor overall practice towards disaster preparedness.(Figure 5)

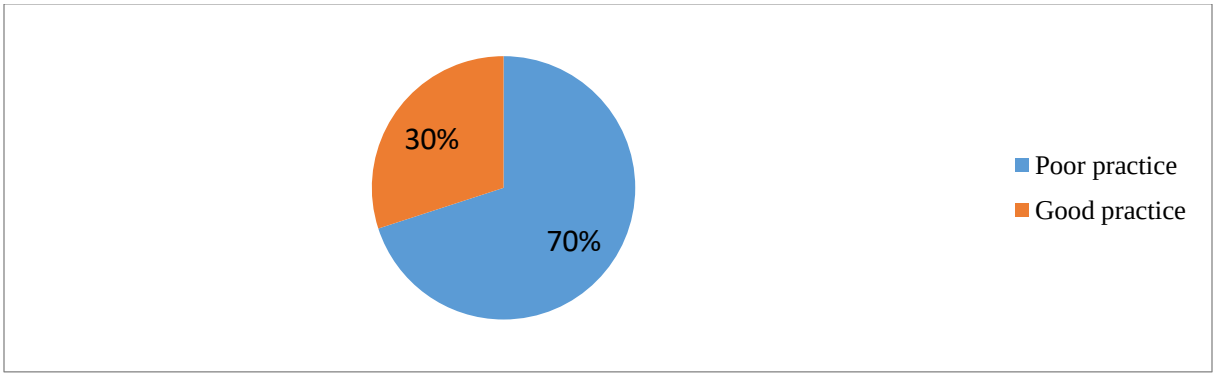

Figure 5:Level of practice among front line health care providers towards disaster preparedness of selected government hospitals of Addis Ababa,2025

About 124(72.9%) of the respondents reported that they can perform safety rapid assessment for victims during disaster and 118(69.4%) of the respondents reported that they are not the member of disaster response committee in their facility.

From the total respondents 91(53.5%), 62 (36.5%) and 75(44.1%) have poor overall practice regarding questions asked about ICS, triage and communication.(Table 4)

Table 4:Level of practice of participants on ICS and triage Addis Ababa,2025

Questions	Response	N(%)
ICS		
Can you perform safety assessment for yourself, coworkers and victims during disaster?	Yes	127(74.7%)
	No	43(25.3%)
Are you a member of committee of disaster response in your facility?	Yes	52(30.6%)
	No	118(69.4%)
Are you familiar and trained about your Hospital incident management system?	Yes	86(50.6)
	No	84(49.4%)
Triage during disaster		

Can you perform a rapid physical assessment of a victim during disaster?	Yes	124(72.9%)
	No	46(27.1%)
Can you perform disaster triage during large scale emergency event?	Yes	121(71.2%)
	No	49(28.8%)
Can you perform basic first aid, O2 administration during disaster?	Yes	141(82.9%)
	No	29(17.1%)

From the professional category physicians (71.4%) have good overall practice followed by nurses (40.6%), laboratory technologists (12.5%) and pharmacists (7.14%).(Figure 6)

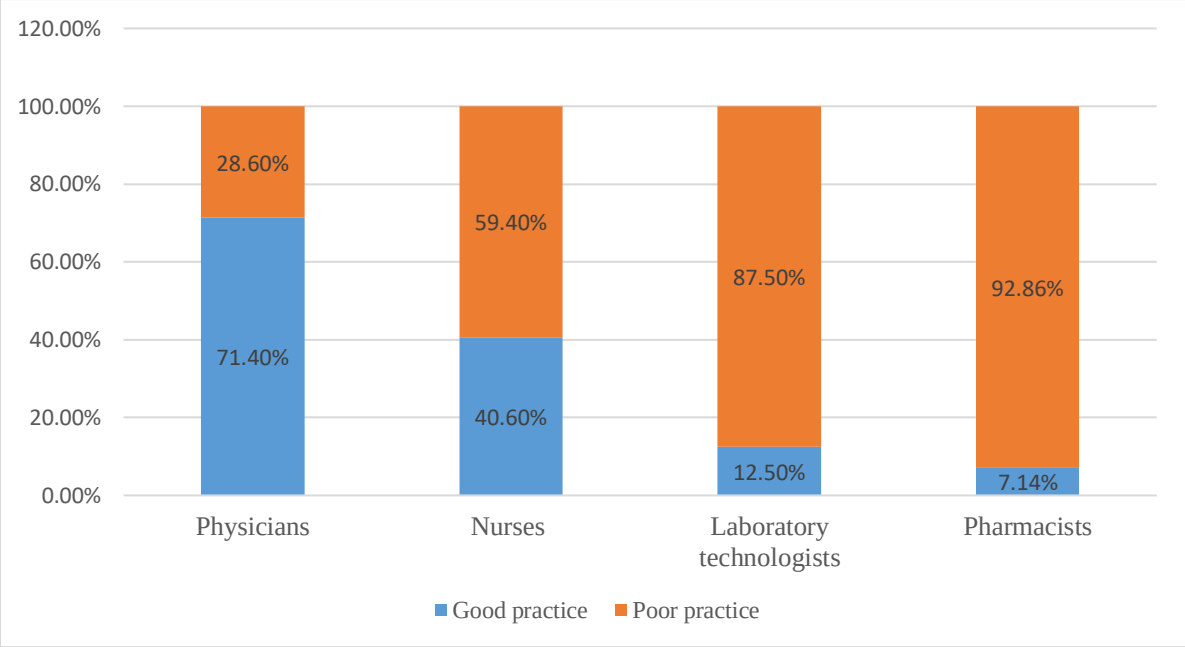

Figure 6 :Level of practice among professions working in the ED of selected government hospitals of Addis Ababa,2025

5.4. Factors associated knowledge and practice of health professionals

5.4.1Factors associated with knowledge of health professionals

Binary logistic regression was performed to determine the factors associated with knowledge of health professionals towards disaster preparedness and variables with p value less than 0.25 were considered for multiple logistic regression. The Hosmer and Lemeshow goodness-of-fit test showed that the logistic regression model for knowledge had a good fit (p = 0.300) Age category,

working hospital, professional category, level of education, ED work experience and drills were the variables that satisfied the precondition for multiple logistic regression with p value<0.25.

In multiple logistic regression working hospital, level of education and previous drills were the variables that showed significant association with the knowledge of health professionals with p value<0.05.

Professionals working at TASH ,ZMH and AaBET hospital were less likely to have good knowledge than Minilik hospital by 12.2%,7.9% and 9.4% respectively.Undergraduate staffs were 15.9% less likely to have good knowledge than postgraduate staffs.Professionals who have conducted drills were 15 times more knowledgeable than who did not(AOR=14.552, 95%CI(3.942,53.713)).(Table 5)

Table 5:Bivariate and multivariate analysis showing factors associated with the level of knowledge towards disaster preparedness among health care providers working in the ED of selected government hospitals of Addis Ababa,2025

Variable	Category	Knowledge level		Bivariate analysis		Multivariate analysis	
		Good	Poor	COR(95% CI)	P value	AOR(95% CI)	P value
Age category					0.101		
	20-24	3(37.5%)	5(62.5%)	0.356(0.075,1.691)	0.194	0.485(0.043,5.430)	0.557
	25-29	35(55.2%)	30(44.7%)	0.691(0.315,1.520)	0.358	1.311(0.410,4.188)	0.648
	30-34	21(38.8%)	33(61.1%)	0.377(0.165,0.861)	0.021	0.800(0.238,2.684)	0.718
	35-39	27(62.7%)	16(37.2%)	1		1	
Working hospital					0.027*		
	TASH	18(45%)	22(55%)	0.123(0.031,0.480)	0.003	0.122(0.015,0.963)	0.046*
	ZMH	13(46.4%)	15(53.5%)	0.13(0.031,0.539)	0.005	0.079(0.008,0.766)	0.029*
	AaBET	24(42.8%)	32(57.1%)	0.113(0.030,0.423)	0.001	0.094(0.011,0.787)	0.029*
	Yekatit 12 hospital	11(47.8%)	12(52.1%)	0.138(0.032,0.594)	0.008	0.138(0.016,1.148)	0.067
	Minilik hospital	20(86.9%)	3(13.04%)	1		1	
					<0.001*		

Professional category	Nurse	68(54.8%)	56(45.2%)	0.202(0.043,0.942)	0.042	1.990(0.182,21.798)	0.573
	Laboratory technologist	4(22.2%)	14(77,7%)	0.048(0.007,0.307)	0.001	0.444(0.028,6.968)	0.563
	Pharmacist	2(14.2%)	12(85.7%)	0.028(0.003,0.231)	<0.001	0.204(0.012,3.322)	0.264
	Physician	12(85.7%)	2(14.2%)	1		1	
Level of education					<0.001*		
	Undergraduate	58(42.6%)	78(57.3%)	0.159(0.062,0.410)	<0.001	0.159(0.046,0.555)	0.004**
	Postgraduate	28(82.35%)	6(17.6%)	1		1	
ED work experience					0.168		
	1-5	58(46.7%)	66(53.2%)	0.176(0.020,1.548)	0.117	0.149(0.007,3.423)	0.234
	6-10	23(57.5%)	17(42.5%)	0.2712(0.029,2.533)	0.252	0.112(0.004,2.795)	0.182
	11-15	5(83.3%)	1(16.6%)	1		1	
Drills					<0.001*		
	Yes	50(90.9%)	5(9.1%)	21.944(8.071,59.665)	<0.001	14.552(3.942,53.713)	0.000**
	No	36(31.3%)	79(68.6%)	1		1	
Presence of disaster preparedness plan					<0.001*		
	Yes	64(62.7%)	38(37.2%)	3.522(1.843,6.729)	<0.001	1.247(0.479,3.246)	0.651
	No	22(32.3%)	46(67.6%)	1		1	

*** pvalue <0.05 at COR,**p value<0.05 at AOR**

5.4.2. Factors associated with practice of health professionals

Of the variables inserted to binary logistic regression age, working hospital, professional category, level of education, drills, being a member of the disaster response committee and presence of disaster preparedness plan in their facility were the variables that had p value<0.25.

Then, a multivariate logistic regression was conducted to identify predictors of good practice towards disaster preparedness. Hosmer and lemshow test had given a p value of 0.1.

Participants with an undergraduate degree were significantly less likely to practice good disaster preparedness practice by 13.9% compared to those with a postgraduate degree (AOR = 0.139, 95% CI (0.028, 0.703), p = 0.017).

Professionals in facilities with a disaster preparedness plan were seven times more likely to demonstrate good disaster preparedness practices (AOR = 7.611, 95% CI(1.714,33.784), p = 0.008).

Participants who were the members of disaster committee were 62 times more likely to practice disaster preparedness than who were not (AOR = 62.178, 95% CI(9.867,391.811), p < 0.001)(Table 6)

Table 6:Bivariate and multivariate analysis showing factors associated with the level of practice towards disaster preparedness among health care providers working in the ED of selected government hospitals of Addis Ababa,2025

Variable	Category	Practice level		Bivariate analysis		Multivariate analysis	
		Good	Poor	COR(95% CI)	P value	AOR(95% CI)	P value
Age category					0.110		
	20-24	1(12.5%)	7(87.5%)	0.180(0.020,1.596)	0.124	10.732(0.523,220.387)	0.124
	25-29	16(24.6%)	49(75.3%)	0.412(0.181,0.941)	0.035	3.029(0.595,15,413)	0.182
	30-34	15(27.7%)	39(72.2%)	0.486(0.208,1.133)	0.095	2.120(0.381,11.808)	0.391
	35-39	19(44.1%)	24(55.8%)	1		1	
Working hospital					0.242		
	TASH	8(20%)	32(80%)	0.273(0.88,0.842)	0.024	0.870(0.106,7.165)	0.897
	ZMH	8(28.5%)	20(71.4%)	0.436(0.137,1.390)	0.161	0.109(0.009,1.308)	0.080
	AaBET	18(32.1%)	38(67.8%)	0.517(0.192,1.393)	0.192	0.986(0.132,7.386)	0.989
	Yekatit 12 hospital	6(26%)	17(74&)	0.385(0.112,1.329)	0.131	0.388(0.042,3.573)	0.403
	Minilik hospital	11(47.8%)	12(52.1%)	1		1	
Professional category					0.003*		
	Nurse	38(30.6%)	86(69.3%)	0.177(0.052,0.599)	0.005	0.248(0.029,2.136)	0.204

	Laboratory technologist	2(11.1%)	16(88.8%)	0.050(0.008,0.325)	0.002	0.245(0.020,2.965)	0.269
	Pharmacist	1(7%)	13(93%)	0.031(0.003,0.320)	0.004	0.145(0.003,6.359)	0.317
	Physician	10	4	1		1	
Level of education					<0.001*		
	Undergraduate	27(19.8%)	109(80.1%)	0.103(0.044,0.241)	<0.001	0.139(0.028,0.703)	0.017**
	Postgraduate	24(70.5%)	10(29.5%)	1		1	
Drills					<0.001*		
	Yes	33(60%)	22(40%)	8.083(3.866,16.901)	<0.001	3.281(0.744,14.462)	0.116
	No	18(15.6%)	97(84.4%)	1		1	
Presence of disaster preparedness plan					<0.001*		
	Yes	45(44.1%)	57(55.9%)	8.158(3.236,20.566)	<0.001	7.611(1.714,33.784)	0.008**
	No	6(8.8%)	62(91.2%)	1		1	
Member of disaster committee					<0.001*		
	Yes	40(76.9%)	12(23.07%)	32.424(13.247,79.364)	<0.001	62.178(9.867,391.811)	0.000**
	No	11(9.3%)	107(90.7%)	1	<0.001*	1	
Knowledge towards disaster preparedness	Good	43(50%)	43(50%)	9.5(4.092,22.055)	<0.001*	0.483(0.081,2.898)	0.426
	Poor	8(9.5%)	76(90.5%)	1		1	

*** pvalue <0.05 at COR,**p value<0.05 at AOR**

6. DISCUSSION

This study aimed to assess the level of knowledge and practice of health professionals working in the ED of selected government hospitals of AA towards disaster preparedness.In the present study, majority of the study participants 115(67.6%) have not conducted any drill in their institution, and forty four(25.9%) of them don't even know if their institution have a disaster committee.This result shows a significant gap in institutions regarding disaster preparedness.

In this study, 50.6% of the participants had good overall knowledge.This result is consistent with the study done in south Gondar hospitals,Tanzania and TASH which found 48.3%,53.2%and 50.8% respectivel(23, 33).But it is higher than the studies done in private hospitals of AA which revealed 64% of the participants have poor knowledge(7).This is may be due to government hospitals are more likely to involve their staffs on trainings than private hospitals and government hospitals are more prone to disaster. And lower than the studies done in Iran,Malaysia and Saudi Arabia which reported good knowledge levels of 74.5%,91.6% and 69%(17,15,16).This knowledge discrepancy may be due to the level of emphasis given for disaster preparedness vary among different countries.

Regarding the practice level of the participants this study showed that 30% of the participants had good level of practice.This result is in line with the studies done in Iran and South Gondar which reported practice level of participants was 29.2% and 32.5% respectively(17,21).Higher than the studies done in Saudi Arabia which reported 16% of the participants had good practice and private hospitals of AA which reported 89.1% have poor practice(16,7).this could be due to the participants in Saudi Arabia were students while this study participants are graduated professionals who have a minimum of 1 year work experience.Regarding the practice level professionals working in private hospitals most disaster cases are managed in government hospitals in our country.

Professionals who have conducted drills were 15 times more knowledgeable than who did not conduct(AOR=14.552, 95%CI(3.942,53.713).Drills are key factors that determine the level of disaster preparedness as they equip professionals with the basics of disaster response theoretically as well as practically so they highly influence the knowledge level of individuals towards disaster preparedness.

In our study, professionals working at TASH ,ZMH and AaBET hospital were less likely to have good knowledge than Minilik hospital by 12.2%,7.9% and 9.4% respectively.This result might be due to professionals working at Minilik hospital were recently involved in a drill and drill is significantly associated with good knowledge outcome in our study.

Undergraduate staffs were 15.9% less likely to have good knowledge than postgraduate staffs.this result is similar with the study conducted in Yemeni which reported that regardless of the work experience post gradyate staffs were more knoweledgeable than undergraduate staffs(18).

Participants with an undergraduate degree were significantly less likely to practice good disaster preparedness practice by 13.9% compared to those with a postgraduate degree (AOR = 0.139, 95% CI (0.028, 0.703), p = 0.017). Education significantly enhances disaster preparedness by improving individuals' risk perception, access to information, and decision-making skills thus participants with a higher educational level will practice more than those with lower educational levels.

Our study demonstrated that professionals working in facilities with a disaster preparedness plan were seven times more likely to demonstrate good disaster preparedness practices (AOR = 7.611, 95% CI(1.714,33.784), p = 0.008).Presence of disaster preparedness plans indicates that the facility has an organized system of disaster response which affects the practice levels of its professionals.

Participants who were the members of disaster committee were 62 times more likely to have disaster preparedness skills compared with non disaster committee members (AOR = 62.178, 95% CI(9.867,391.811), p < 0.001).This result tells us being a member of disaster committee highly affects the level of practice of individuals as they have a chance to attend trainings, drills and they have a chance to access the disaster preparedness plan and become familiar with it they will have good practice levels than who are not members.

7.STRENGTH AND LIMITATIONS OF THE STUDY

This study is conducted on five hospitals across the city, thus it assessed the levels of knowledge and practice across different hospitals.It also includes professional other than nurses and physicians therefore showing a significant knowledge and practice gap among professions.it also tried to show the hospital's gap on involving staffson disaster preparedness activities.

Since this study is cross sectional it only assessded the respondents level of knowledge and practice at one time.It is respondent based may be prone to recall and information bias.The study does not include staffs working in other departments of the hospitals.

8.CONCLUSION

This study showed that about half of the respondents showed good level of knowledge while only one third of them have good practice.Drills and educational level were the factors that showed significant association with the level of knowledge while educational level, disaster preparedness plan and being a member of disaster committee significantly influenced good knowledge outcome.

9.RECOMMENDATION

For FMOH:

- ✓ To facilitate experience sharing with other countries which have better policies regarding disaster preparedness.
- ✓ To facilitate training for health care providers working in hospitals and preparing training manuals,guidelines and policies related tohospitaldisaster management
- ✓ Advocate to incorporate disaster management courses in the healthcare professionals curriculum.

For Addis Ababa health bureau and federal level hospitals:

- ✓ Prepare frequent trainings to health professionals
- ✓ Develop a disaster preparedness plan that is easily accessible for all health professionals
- ✓ Conduct disaster drill sessions
- ✓ Encourage staff to be a member of the disaster drill committee

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ANNEXES

Annex I: Participant information sheet

Project Title: Assessment of knowledge and practice towards disaster preparedness and associated factors among front line health care providers working in ED of government hospitals of AA Ethiopia

Principal investigator: Hana Getahun (BSc, MSc candidate)

Name of the Organization: selected government hospitals of AA

Introduction: My name is Hana Getahun and I am MSc student in Addis Ababa University College of Health Science Department of Emergency and Critical Care Nursing. Now, I am going to conduct a research project on the assessment of knowledge and practice towards disaster preparedness and associated factors among front line health care providers working in ED of government hospitals of AA. Thus, all health care providers working in the ED of selected government hospitals are invited to participate in this study. Please take as much time as you need to read or listen in the information sheet.

Purpose of the Research Project: The aim of the study is to find out the level of knowledge and practice of front line health care providers towards disaster preparedness. Furthermore, to investigate the associated factors related to the knowledge and practice of front line health care providers towards disaster.

Procedures and the expected participation: If you are voluntary to participate on this study, you need to give your consent. After consent, you will answer the questions listed on the questionnaire fully and clearly. All the data kept confidentially and performed by using codes. Since participation is volunteer bases, you have the right to participate or not to participate but your participation on the study will benefit you as well.

Contact information: Phone no. +251933527782 or email address: hanugetahun11@gmail.com

Are you willing to participate in this study? Yes _____ **No** _____

Annex II. Structured Questionnaire

I. Sociodemographic data

1. Age: ___

2. Sex:

a) Male___

b) Female___

3. Marital Status:

a) Married___

b) Single___ c) Divorced

d) Widowed___

4. Working place (hospital):

a) TASH___ d) Yekatit 12 hospital medical college_

b) Zewditu memorial hospital___ e) Menilik hospital

c) AaBET Hospital___

5. Profession category:

a) Nurse ___

b) Laboratory technologist___

c) Pharmacist ___

d) Physician___

6. Level of education:

a) Specialty certificate___

b) Masters

c) Degree

d) Diploma

7. ED work experience (in year) ……

II. General information about facility related to disaster

No	Questions	Response	
1.	Do you have conducted any drill in your institution in the last one year?	Yes	No

2.	If yes, how many drills regarding disaster preparedness have you undergone or been part of?	a)one drill	b)2-4 drills
3.	In the past 6 months, have you faced any disaster in your facility?	a)yes	b)no
4.	If yes, what was the disaster (please specify)		
5.	Do you have disaster preparedness plan?	Yes	No
6.	If yes, is it	All hazard plan	
		Hazard specific plan	
		Both present	
7.	Is there any disaster committee in your institution?	Yes	No

III. knowledge towards disaster

1. What is a disaster? (Only one answer)

A. An evaluation of the probability of occurrence and the magnitude of the consequence of any given hazard, i.e. how likely is a hazard and what consequence will it have?

B. A serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental loss which exceed the ability of the affected community or society to cope using its own resources.

C. A possible treat of source of exposure to injury, harm or loss.

2. What is disaster preparedness? (Only one answer)

A. Actions taken in anticipation of an emergency to facilitate a rapid, effective and appropriate response to the situation.

B. System of procedure, checks, audits and corrective action to ensure that all testing, sampling, analysis, monitoring and other technical and reporting activities are of the highest achievable quality.

C. The process through which activities are under taken at the most appropriate level and with the most valuable execution.

3. What is the primary goal of mass casualty incident management?

A.Treat all patients' immediately B. Prioritize patient care based on severity

C. Evacuate all patients to a hospital D. Prevent further casualties

4. What is the primary goal of disaster preparedness?

a) To minimize the impact of disasters. b) To respond quickly to disasters.

c) To recover from disasters efficiently. d) All of the above

No	Questions	(1)not Familiar	(2)slightly familiar	(3)moderately familiar	(4)very familiar	(5)extremely familiar
Incident command system						
1	Are you familiar with for the function group of the ICS during large scale emergency events					
2	Are you familiar with the physical location to which you would report if a large scale emergency event would occur					
3	Are you familiar with for your facility's emergency preparedness level					
4	Are you familiar with the content of the emergency preparedness plan					
5	Are you familiar with the tasks that should not be delegated to volunteers during disasters					
Triage						
6	Are you familiar with the disaster triage category					
7	Are you familiar with the disaster triage tag					
8	Are you familiar with the procedures of triaging patients during disasters					

Communication						
9	Are you familiar with the chain of custody during large scale emergency events					
10	Are you familiar with the Procedures for communicating a critical patient in to people transporting patients					
Psychological issues and special populations						
11	Are you familiar with the Signs of PTSD who faced disaster					
12	Are you familiar with the Detecting and evaluating PTSD or other mental health problems in child or teenager					
13	Are you familiar with the Procedures for providing care to children and younger people during disaster when consent cannot be obtained from their parents or legal guardians					
Isolation, decontamination and quarantine						
14	Are you familiar with the selection of appropriate PPE when caring for a					

	patient exposed to certain chemical or biological agents					
15	Are you familiar with your facility's isolation and quarantine procedures					
16	Are you familiar with the decontamination of procedures stated in your facility's emergency operations or incident plans					
Reporting during disaster						
17	Are you familiar with the diseases that are immediately reportable to the local and state department of health					
18	Are you familiar with the appropriate agency to which reportable disease are to be directed					

III. Practice towards disaster

No	Questions	Response	
Incident command system			
1	Can you perform safety assessment for yourself, coworkers and victims during disaster?	a)yes	b)no
2	Are you a member of committee of disaster response in your facility?	a)yes	b)no
3	Are you familiar and trained about your Hospital incident management system?	a)yes	b)no
Triage			
4	Can you perform a rapid physical assessment of a victim during disaster?	a)yes	b)no
5	Can you perform disaster triage during large scale emergency event?	a)yes	b)no
6	Can you perform basic first aid, O_2 administration during disaster?	a)yes	b)no
Communication			
7	Can you perform appropriate de-briefing activities following disasters?	a)yes	b)no
8	Can you use communication devices during disasters?	a)yes	b)no
9	Are you familiar with procedures for communicating with the public and media?	a)yes	b)no
10	Are you familiar with the system for referral, transfer and reception of patients during disaster?	a)yes	b)no
Psychological issues and special populations			
11	Are you familiar and trained to give psychological support for patients during disasters?	a)yes	b)no
Isolation, decontamination and quarantine			

12	Can you apply personal protection equipment and isolation for infectious diseases and epidemics?	a)yes	b)no
13	Are you familiar and trained about the evacuation plan during disaster?	a)yes	b)no
Reporting during disaster			
14	Do you report unusual symptoms that should be reported to local and state departments of health?	a)yes	b)no