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COLLEGE OF MEDICAL AND HEALTH SCIENCES

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DEPARTMENT OF EMERGENCY, CRITICALAND CHRONIC CARE NURSING POST GRADUATE PROGRAM

Knowledge, practice and associated factors regarding Basic Life Support in trauma care among health care providers who are working in selected governmental health centres in Addis Ababa Ethiopia.

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A Research thesis submitted to graduate students of Addis Ababa university college of health science department of emergency critical and chronic care nursing for partial fulfilment of the requirement for the certificate of specialty in emergency critical and chronic care nursing.

JUNE, 2026

ADDIS ABABA ETHIOPIA

KNOWLEDGE, PRACTICE AND ASSOCIATED FACTORS REGARDING BASIC LIFE SUPPORT IN TRAUMA CARE AMONG HEALTH CARE PROVIDERS WHO ARE WORKING IN SELECTED HEALTH CENTERS IN ADDIS ABABA ETHIOPIA

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Thesis title: knowledge, practice and associated factors regarding basic life support in trauma care among health care providers who are working in selected health centres in Addis Ababa Ethiopia.

I, hereby declare that this submission is entirely my own work, written in my own words. All sources used during the research process have been fully acknowledged, properly cited, and listed with in the bibliography.

Name: Firewoine Yeniemengist

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Date of submission: _____

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CONTENTS

Declaration i
ACKNOWLEDGEMENT ii
List of tables v
List of figures vi
ABBREVIATIONS AND ACRONYMS vii
ABSTRACT viii
1. INTRODUCTION 1
1.1 Background 1
1.2 Statement of problem 3
1.3 Significance of the study 5
2. LITERATURE REVIEW 6
2.1. Overview of Trauma and basic life support in Trauma Care 6
2.2 Knowledge of Healthcare Providers on Basic Life Support in Trauma Care 6
2.3. Practice of Basic Life Support in Trauma Care among Healthcare Providers 7
2.4. Factors Associated with Knowledge and Practice of Basic Life Support in Trauma Care 8
2.5. Trauma Care in Ethiopia and Similar Settings 8
2.6. Conceptual framework 9
3. OBJECTIVE 10
3.1 General objective 10
3.2 Specific objectives 10
4. METHODOLOGY 11
4.1 Study area 11
4.2 Study design 11
4.3 study period 11
4.4. Population 11
4.4.1. Source of population 11
4.4.2. Study population 11
4.5 Inclusion and exclusion criteria 11
4.5.1. Inclusion criteria 11
4.5.2. Exclusion criteria 12

4.6. Sample Size Determination and sampling procedure 12
4.6.1 Sample size determination 12
4.7. Variables of study 14
4.8. Data collection methods 14
4.8.1. Data collection procedure and tools 14
4.8.2. Data quality control 15
4.9. Data processing and analysis 15
4.11. Ethical consideration 16
4.12 Dissemination Result 17
5. RESULT 18
5.1 Socio demographic characteristics among health care providers (respondents) 18
5.3. Practice of health care providers (respondents) toward basic life support in trauma care 23
5.4. FACTORS ASSOCIATED WITH KNOWLEDGE AND PRACTICE REGARDING BASIC LIFE SUPPORT IN TRAUMA CARE 25
5.4.1. Factors Associated with basic life support care knowledge 25
5.4.2. Factors Associated with the Practice of basic life support in Trauma Care in health centres. 28
5.5. Institutional Factors influencing knowledge and practice of HCPs on basic life support in trauma care. 30
6.1. Knowledge of Healthcare Providers on basic life support in Trauma Care 34
6.2. Practice of basic life support Trauma Care among Healthcare Providers 35
Limitations of the study 36
7.1. Conclusion 37
7.2. Recommendation 38
8.REFERENCE 39
9. ANNEXES 42

List of tables

Table 1: sociodemographic characteristics of health care providers ----------18
Table 2: Assessment of knowledge, about basic life support in trauma care among health professionals at selected health centres in Addis Ababa, Ethiopia,2026 ----------21
Table 3: - Practice of health professionals on basic life support trauma Care d in health centers of Addis Ababa, Ethiopia 2026. ----------24
Table 4: - Logistic regression analysis showing factors associated with knowledge at Addis Ababa, Ethiopia 2026. ----------26
Table 5: - Logistic regression analysis showing factors associated with practice of HCPs on trauma care at Addis Ababa, Ethiopia 2026. ----------29
Table 6: showing institutional factors among health centers at Addis Ababa, Ethiopia 2026. ……31

List of figures

Figure 1: proposed conceptual framework of Knowledge, practice of HCPs in AA HCs ---------- 9

Figure 2: Schematic presentation of sampling procedure ----------13

Figure 3: Pie chart showing distribution of HCPS working in selected HCs at Addis Ababa city, 2026.----------20

ABBREVIATIONS AND ACRONYMS

AOR	Adjusted Odd Ratio
BLS	Basic Life Support
CI	Confidence Interval
CPD	Continuous Professional Development
CPR	Cardiopulmonary Resuscitation
ECA	Economic Commission for Africans
ECCCN	Emergency Critical and Chronic Care Nursing
ETB	Ethiopian Birr
FMH	Federal Ministry of Health
GPS	General Practitioners
HC	Health Centers
HO	Health Officer
LMCS	Low- and Middle-income Countries
MPH	Master of Public Health
MSC	Master of Science
MSON	Masters in Oncology Nursing
PHC	Primary Health Centre
PHCP	Primary Health Care Providers
RTAS	Road Traffic Accident
SD	Standard Deviation
SSA	Sub Saharan Africa
TIC	Trauma Informed Care
WHO	World Health Organization

ABSTRACT

Background: Trauma remains a critical global public health challenge and a leading driver of morbidity and mortality. In low- and middle-income countries (LMICs), health systems face resource constraints and high patient volumes, exacerbating trauma outcomes. In Ethiopia, governmental health centers function as the primary point of contact for emergency medical services. However, empirical evidence regarding the competencies of primary healthcare providers in basic life support in trauma care remains limited. Timely and appropriate stabilization is vital to mitigating preventable deaths and long-term disabilities.

Objective: To assess the knowledge, practice, and associated factors regarding basic life support in trauma care among health care providers working in governmental health centers in Addis Ababa, Ethiopia.

Methods: Institutional based cross- sectional study design was conducted using simple random sampling from Marh 2026 to April 2026 among 279 health care providers working at selected governmental health centres in Addis Ababa. The data was collected through structured self-administered questionnaire. The binary logistic regression model was used to assess the association between the dependent and independent variables. multivariable logistic regression analysis was done to identify the association factors and statistical significance was declared at p-value < 0.05 with 95% Confidence Interval.

Result: The study achieved a 100% response rate. Only 31.2% of participants had good knowledge, yet a majority of them (92.1%) demonstrated good practice. experience under 3 years (AOR = 4.191, 95% CI: 1.008–16.141), being a nurse (AOR = 9.772, 95% CI: 3.573–26.727), being a health officer (AOR = 8.150, 95% CI: 2.865–23.182), female sex (AOR for males = 0.562, 95% CI: 0.318–0.995), and having formal training (AOR = 1.903, 95% CI: 1.049–3.453) were significantly associated with better knowledge. For practical application, poor knowledge status (AOR = 0.475, 95% CI: 0.245–0.920), work experience of 3–6 years (AOR = 0.287, 95% CI: 0.082–1.006), being a nurse (AOR = 0.283, 95% CI: 0.109–0.736), female sex (AOR = 0.452, 95% CI: 0.229–0.891), and availability of essential equipment (AOR for neutral AOR=.491(95%CI=.266-.909), were substantially associated with the practices of healthcare providers.

Conclusion: Healthcare providers exhibited a poor level of knowledge but a good level of practice regarding basic life support in trauma care. To bridge this knowledge gap and maintain practical clinical competencies, vigorous and periodic in-service simulation training and structured evaluations are highly recommended.

Key words: health care providers, health centre, knowledge, practice, basic life support, trauma care, Ababa, Ethiopia.

1. INTRODUCTION

1.1 Background

The term '*trauma*' comes from a Greek word, it means 'wound, injury, damage, caused by external violence, according to World Health Organization (WHO), injury is physical damage that results when human body subjected to intolerable level of energy. Trauma can be physical and psychic. Physical trauma/injury is defined as a physical damage to a human being caused by intolerable transfer of energy, it may be mechanical, thermal, electrical, chemical, or radiation energy. Trauma can be also considered as unintentional which include those caused by road traffic accident,falls,droning,burns,and poisonings, and intentional include those caused by self-harm, interpersonal violence,war,and conflict(1)

Both intentional and unintentional injury are a major global health crisis. Annually, over 4.4 million people die from injuries, which account 9% of worldwide deaths. Exposure to trauma is pervasive in societies worldwide. Population based data from various countries indicate that a majority of adults are risk for traumatic event at some point in their lives, despite cross national variation in the prevalence of specific type of trauma(2). Road traffic accidents(RTA) remains a major global burden of disease (3). (WHO), RTAs are currently the 8th leading cause of death globally and the 10th leading cause in SSA, resulting in 1.402 million deaths per year world in 2016 from these 284,000 were in SSA(4).

As the study conducted in 2019, it doesn't strike the population equally. Some groups are more vulnerable than others. trauma affects all age groups while youths and young adults are particularly vulnerable. Moreover, the injury burden is disproportionately high in low and middle countries (LMCS).over 90% of traumas occur globally take place in LMICS, where there are inadequate safety precautions and medical service available(5).

All causes of injury have health consequences beyond physical injury. Many of those who survive acts of violence, road traffic crashes, suicide attempts or other causes of injury are left with temporary or permanent disabilities – injuries are responsible for an estimated 6% of all years lived with disability(6).

Beyond its impact on individuals, trauma presents significant social and economic challenges. Therefore, societies must prioritize prevention, treatment, and long-term care, focusing on health.

In this context, trauma poses a significant challenge for emergency medicine, critical care, and catastrophe medicine, necessitating specialized surgical and medical responses(1)

In Ethiopia, trauma is one of the leading causes of emergency department visits and preventable deaths, especially among the young and economically productive population. Rapid urbanization, increased motorization, and population growth in cities such as Addis Ababa have further increased the incidence of traumatic injuries(7). Governmental health centers serve as the first point of contact for many trauma victims, making basic life support in trauma care at this level is critical for patient survival and long-term outcomes. Health care providers (HCPs) working in these facilities are expected to deliver timely and effective basic life support in trauma care, including airway management, haemorrhage control, spinal immobilization, and rapid referral. However, limitations in training, resources, and system organization may affect the quality of care provided.

Basic life support in trauma care is crucial phases in the management of severe traumatic injuries, with potential impact on the survival of patients. Following ABCDE method, and prompt referral. Many trauma patients first arrive at primary-level governmental health centers, where early life-saving assessments and stabilization—known as basic life support in trauma care—are critical(8–10).

However, the ability to manage the emergency injuries at PHC level is under scrutiny, leading to claims that emergency care in this settings has been neglected and is unable to provide communities access to good quality care(11).

Despite the essential role of health centers in the trauma chain of survival, evidence suggests that health care providers working in primary-level and secondary-level in low- resource settings often face challenges such as limited training opportunities, lack of essential equipment, high workload, and absence of standardized protocols. These challenges may negatively affect both the knowledge and practice of healthcare providers in managing trauma cases(12).

1.2 Statement of problem

Trauma is the leading cause of death in the working population. The world health organization (WHO) reports that 4.4 million deaths annually due to unintentional or violence-related injuries. One third of these deaths result from road traffic injuries (RTIs). For individuals aged 5-29 years, three of the top five causes of death are injury related. Major trauma is the 8th leading cause of deaths across all age groups and the leading cause of death among children and young adults. The highest rate of trauma related deaths are observed in low income countries(13).

Globally, men face twice the risk of dying from injuries as women, with approximately 75%of injury related deaths resulting from trauma and RTIs. More than one third of all deaths among individuals aged 15-19 in Europe were trauma related (13). The study from Seattle show that 75% arrives initial facility with in thirty-minutes of trauma (14).

In Western Kenya, study show When asked their level 3 facilities (health centers) have a specific approach to a trauma patient that differs from how they approach a medical patient. In response to how well respondents felt their facility can handle major trauma, all 30 said they refer. Twenty-six (87%) of the 30 said they refer immediately, and 4 (13%) said they try to provide first aid and then refer. Most providers (21/30, 70%) said their facility is poorly equipped to handle broken bones. Most of health centers had suture and wound care supplies (26/30, 87%) and gloves (27/60, 90%;). Few of these facilities had oxygen (7/30, 23%) and splinting/casting supplies (3/30, 10%), and none had blood for transfusion (0/30, 0%)(15)

Trauma-related injuries continue to be a major cause of morbidity and mortality in Ethiopia, particularly in urban settings such as Addis Ababa where road traffic accidents and interpersonal violence are common.

The survival and subsequent prognosis of trauma victims heavily depend on the administration of timely and efficient Basic Life Support (BLS). Because formal emergency medical services (EMS) are severely limited in Ethiopia, governmental health centers serve as the primary frontline for acute trauma care. Health care providers in these facilities are expected to possess knowledge and strong practical skills in BLS to stabilize patients before referral to tertiary hospitals.(16)

Despite this critical need, preliminary evidence and localized studies across low-and middle-income countries suggest a severe deficiency in both BLS knowledge and practical execution among frontline healthcare workers. Many providers rely on outdated guidelines, lack hands-on experience, or face systemic bottlenecks that degrade their resuscitation skills. In Ethiopia, this gap is worsened by; High staff turnover in public health facilities, Lack of regular simulation training and refresher courses, Scarcity of essential resuscitation equipment within health centers, Poorly defined protocols regarding trauma stabilization(17).

Some studies in Ethiopia have assessed trauma care among emergency care provider in hospitals, still there is no adequate knowledge and skill level to give effective basic life support in trauma care in governmental health centers. previous studies have focused primarily on prehospital care or hospital-based trauma management, with limited focus on basic life support in trauma care at governmental health centers.

Despite the critical role of healthcare providers in delivering basic life support in trauma care, there is limited empirical evidence regarding their level of knowledge and practice in governmental health centers in Addis Ababa. Furthermore, the factors associated with knowledge and practice of basic life support trauma care such as training, professional qualification, work experience, and availability of resources are not well documented. The absence of such data hinders the development of targeted interventions, policies, and training programs aimed at improving trauma care services(19,20).

Therefore, there is a need to assess the knowledge, practice, and associated factors related to basic life support in trauma care among healthcare providers working in governmental health centers. This study directly addresses this gap by assessing the knowledge, practice, and associated factors regarding BLS in trauma care among healthcare providers in selected health center in Addis Ababa.

1.3 Significance of the study

This study provides baseline information on knowledge and practice of basic life support in trauma care in health centers, identify gaps within health centers regarding trauma care, provide health professionals, health policy makers and administrators with updated information to develop guidelines and intervention strategies for effective basic life support in trauma care.

Furthermore, the result will be important for the federal ministry of health in Ethiopia, Addis Ababa health office and other health centers.

As far as the investigators will aware, there was no multicentre research done in Addis Ababa health centers of this kind, so that for researchers in the future, it can serve as the baseline data. To enhance the health center care knowledge and practices, health professionals, legislators, and other concerned bodies can benefit greatly from the study's findings. By knowing the degree of practice, and knowledge of healthcare workers, policymakers and healthcare providers can suggest training and pass on experience from one health facility to another.

2. LITERATURE REVIEW

2.1. Overview of Trauma and basic life support in Trauma Care

Trauma/Injury is defined as physical damage to a human being caused by intolerable transfer of energy, it may be mechanical, thermal, electrical, chemical, or radiation energy. It can be also considered unintentional which include those caused by road traffic incidents; falls, drowning, burns, and poisonings, and intentional include those caused by self-harm, interpersonal violence, war and conflict.

Trauma is one of the most important public problems that cause significant economic and social crisis with more than 10% of all disease cases are associated with it. It accompanies approximately 90% in LMICs. motor vehicle accident is the commonest cause for trauma associated morbidity and mortality(21).

Basic life support in trauma care refers to the immediate assessment, stabilization, and management provided to injured patients during the first contact with the healthcare system. This includes rapid primary assessment, airway and cervical spine protection, breathing and circulation support, haemorrhage control, disability assessment, and timely referral. Evidence shows that effective basic life support in trauma care significantly reduces preventable deaths and long-term complications.

2.2 Knowledge of Healthcare Providers on Basic Life Support in Trauma Care

Adequate knowledge of trauma care principles is essential for healthcare providers involved in emergency services. Studies conducted in various low-resource settings indicate that many healthcare providers have insufficient knowledge of basic trauma life support principles. Gaps are commonly reported in areas such as airway management, shock recognition, cervical spine immobilization, and prioritization of trauma patients.

Research has shown that healthcare providers who have received formal trauma training, such as Basic Life Support (BLS), Advanced Trauma Life Support (ATLS), or equivalent courses, demonstrate significantly higher knowledge scores compared to those without training. Level of education, professional category, and years of clinical experience have also been found to

influence knowledge levels(22). However, in many primary healthcare settings, opportunities for structured trauma training remain limited.

2.3. Practice of Basic Life Support in Trauma Care among Healthcare Providers

Good knowledge does not always translate into appropriate practice. Several studies report discrepancies between healthcare providers' knowledge and their actual clinical practice of trauma care.

According to research done in Northern region of Palestine shows the perceived level of competence to perform emergency skills, almost half of primary health care physicians (48%) will perform simple suturing and nebulization and oxygen therapy (44.7%). Physicians will attempt bag and mask resuscitation (40.2%), cardiac compression (35.8%) and read ECGs (34.1%). One fifth (20.1%) said that "they don't know where to start" regarding performing defibrillation, whereas (46.9%) said they will intervene if there was no one else available to defibrillate(11).

Even if the World Health Organization (WHO) proposes strengthening emergency care at a PHC level as a way of lessening the burden of disease on the overall health system, it is not known how health care practitioners at this level is experiencing the management of emergencies(11).

The study done in south Africa Shows the Capability in nursing is generally understood as a combination of knowledge, skills and personal qualities for maximum effectiveness is not only routine and predictable situations but also in unpredictable situations such as an emergency. Aligned with the team performance sub-theme, some participants' experience of nursing capability and competence in an emergency was not encouraging. Performing triage when a patient arrives and providing basic emergency care was particularly challenging. The challenge is the equipment and the abilities of the nurses, because usually there are three to four nurses working, but only one of them can do …to take a line, to do sutures. The triage process for most of the facilities starts at the administration desk where the clerk or help desk assistant would be expected to triage patients for emergencies. The experiences of PHC practitioners of emergency care at this level are contextually nuanced by the types and efficiency of care relies on a number of factors including the need for a functional team approach and regular training(11)

Inadequate practice may result from factors such as lack of essential equipment, high patient workload, insufficient staffing, and absence of standardized guidelines.

Observational studies from emergency and primary care settings have documented poor adherence to trauma care protocols, including failure to perform systematic primary surveys, inadequate monitoring of vital signs, delayed haemorrhage control, and improper patient referral. Healthcare providers working in facilities with better infrastructure, trauma equipment, and institutional support tend to demonstrate better trauma care practices(23,24).

2.4. Factors Associated with Knowledge and Practice of Basic Life Support in Trauma Care

Multiple factors have been identified as influencing healthcare providers' knowledge and practice of initial trauma care. Training-related factors, including prior exposure to trauma management courses and frequency of refresher training, consistently show a positive association with both knowledge and practice. Professional qualification and clinical experience also play important roles, with physicians and more experienced providers often reporting higher competency levels(25).Institutional factors such as availability of trauma guidelines, emergency drugs, medical equipment, and supportive supervision have been shown to significantly affect practice. In resource-limited settings, lack of basic supplies such as cervical collars, oxygen, suction machines, and intravenous fluids negatively impacts the ability of healthcare providers to apply their knowledge effectively.

2.5. Trauma Care in Ethiopia and Similar Settings

Studies conducted in Ethiopia and other sub-Saharan African countries highlight substantial challenges in trauma care delivery, particularly at the primary healthcare level. Limited training opportunities, inadequate infrastructure, and poor referral systems are frequently reported. Existing studies have largely focused on hospital-based emergency departments, with relatively few addressing trauma care at governmental health centers(26).

Available evidence suggests that many healthcare providers in Ethiopia have limited exposure to formal trauma training, and their preparedness to manage trauma cases varies widely. However, data specifically assessing knowledge, practice, and associated factors among healthcare providers in governmental health centers in Addis Ababa are scarce, indicating a significant research gap(18).

2.6. Conceptual framework

This conceptual framework was developed after systematically and careful review of different literatures which are related to assessing knowledge, practice and associated factors on health care providers to give basic life support trauma care. So, the entire thesis process was conceptualized, and tools was developed with the assistance previous studies of factors influencing knowledge and practice of prehospital care for earlier related studies(27,28).

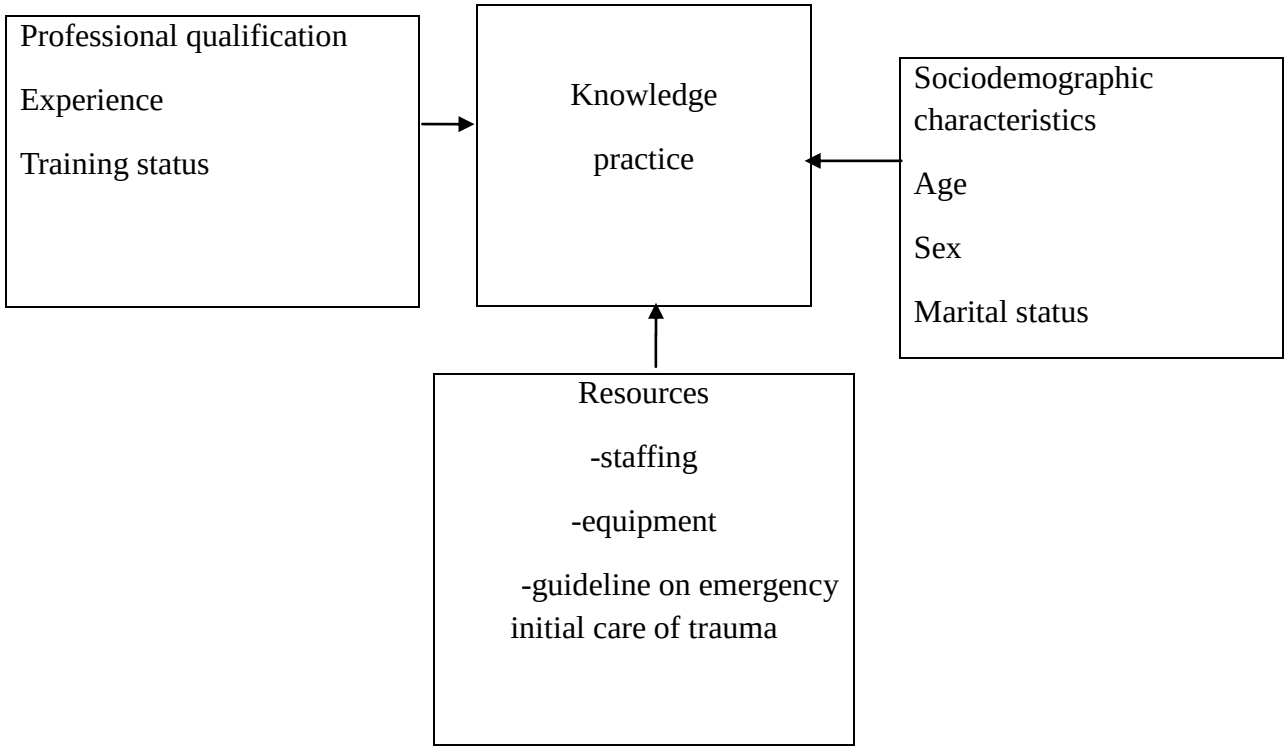


Figure 1: proposed conceptual framework of Knowledge, practice of HCPs in AA HCs

3. OBJECTIVE

3.1 General objective

- To assess knowledge, practice and associated factors of basic life support in trauma care among health care providers working in selected governmental health centers in Addis Ababa, Ethiopia in 2026.

3.2 Specific objectives

- ✓ To determine the level of knowledge of basic life support in trauma care among health care providers in health centers of Addis Ababa.
- ✓ To assess the level of practice of basic life support in trauma care among health care providers in health centers of Addis Ababa.
- ✓ To identify factors associated with knowledge and practice of basic life support in trauma care among health care providers in health centers of Addis Ababa

4. METHODOLOGY

4.1 Study area

The study was conducted in governmental health centers located in Addis Ababa, the capital city of Ethiopia. It has an estimation of more than 5.4 million people and sub divided into 11 sub city administrations(in Amharic:kifle-ketema)/administrative units: Addis Ketema, Akaky Kaliti, Arada, Bole, Gullele, Kirkos, Kolfe Keranio,Lideta, Nifas Silk-Lafto,Yeka and Lemi-Kura (recently added).There are about 98 health centers under stated sub cities, 3895 health care providers with different composition . The study was conducted in the selected sub cities (Gulel,Arada and Addis ketema) which were drawn out of 11 sub cities using lottery method.

4.2 Study design

Institutional based cross- sectional study design was employed during the study period.

4.3 study period

The study was conducted from March to April 2026 at selected HCs in each sub city.

4.4. Population

4.4.1. Source of population

All health care providers working in the selected governmental health centers (in Arada, Gulele, and Addis Ketema sub-cities).

4.4.2. Study population

All health care providers in the selected health centers who meet the inclusion criteria and are available during the study period.

4.5 Inclusion and exclusion criteria

4.5.1. Inclusion criteria

Health care providers who have direct patient care responsibilities and who have worked for at least six months in the health center.

4.5.2. Exclusion criteria

Health professionals who are on sick leave, annual leave during the data collection period, and those who don't involve direct trauma patient contact (pharmacy, laboratory, midwifery) were excluded. (Goal of this study was to evaluate the insights and practices only frontline healthcare workers directly managing general trauma patients).

4.6. Sample Size Determination and sampling procedure

4.6.1 Sample size determination

The total sample size was calculated using a single population proportion formula.

$$n=Z2p\ (1-p)/d2$$

where n=sample size, Z=standard normal distribution value at 95%CI, which is 1.96, p=prevalence (58.5%) taken from earlier study in Addis Ababa(4)(from related researches due to lack of literatures as mentioned in study of limitation) and d=margin of error 5%. So, n=z2p (1-p)/d2= (1.96)2×0.585(1-0.585)/ (0.05)2=373.

since there is a population N of 798, a finite population correction formula was used:nf=n0/(1+n0/N) =373/ (1+373/798) to get a sample size n of 254.By taking 10% non-respondent rate, the total sample size calculated to be 279.

4.6.2. Sampling Procedure and Technique

Simple random sampling procedure was employed to select the study participants from governmental health centers in Addis Ababa.

simple random sampling technique was used to Choose at least four health centers per sub-city from all facilities in selected areas.

finally individual study units were involved in participation and final sample were confirmed strictly in line with the inclusion criteria

The procedure is indicated below with schematics presentation.

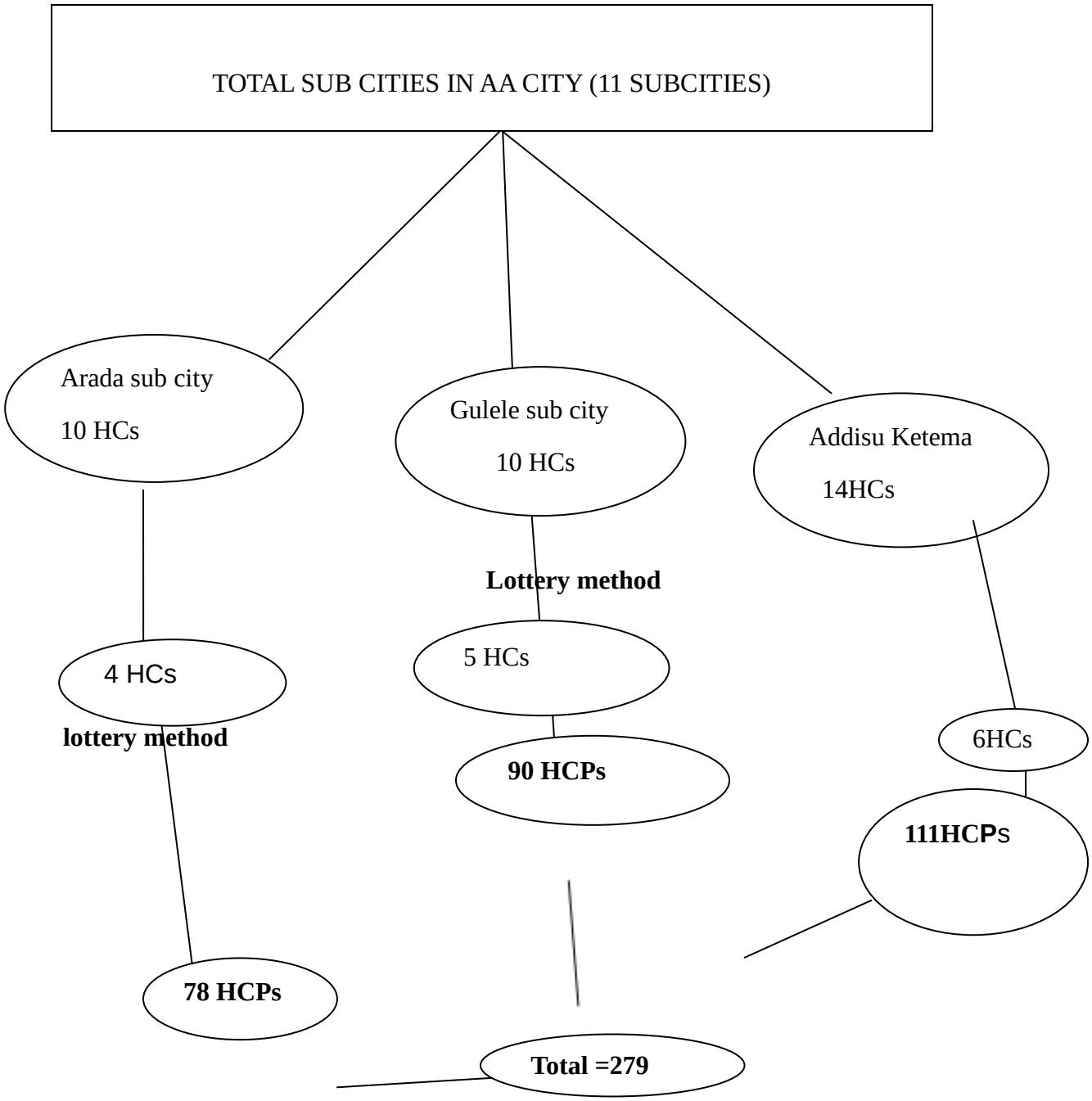


Figure 2: Schematic presentation of sampling procedure

4.7. Variables of study

4.7.1. Dependent variable

-Knowledge

-Practice.

4.8.2. Independent variables

-Age

-Gender

-training received

- profession

- educational status

-experience

4.8. Data collection methods

4.8.1. Data collection procedure and tools

The data were collected by using self-structured questionnaires. A pre-tested self-structured questionnaire adopted from previous studies(22). (from related research due to lack of literatures as mentioned in study of limitation). The Questionnaire was made in a google form and sent to participants through telegram. Participants filled out the questionnaire with the option of receiving assistance from the data collector when needed such as if there is no internet access by providing internet package, may be confused how they fill and send.

The questionnaire addressed socio-demographic, knowledge, practice and associated factors on initial trauma care. The knowledge-based questionnaire was included 15 multiple choices items. each correct response received the score of 1 and each incorrect response received the score of 0, scores ranged from 0 to 15. scores of knowledges were classified as poor (0-11), good (12-15) questions about practice and facility-based included a Likert scale with 10 and 6 questions respectively, each correct response received 5, scores ranged 1 to 50 for practice questions and 1 to 30 for facility-based questions. Similarly, scores of practices were classified as poor (1-37) and good (38-50) based on cutoff point 75%.

4.8.2. Data quality control

The questionnaire was prepared using the English language. Before performing collection, the questionnaire was tested by taking 14 (5%) eligible study participants from Lideta HC. Necessary revisions were made based on the pilot study findings. The ambiguous words and unclear ideas were corrected accordingly based on the findings of pilot study. Cronbach's alpha was checked to achieve internal consistency of questions or items, It determines how closely related a group of items are as a group, indicating how well they measure the same underlying concept. Cronbach's alpha coefficient of >0.70 (acceptable) was deemed satisfactory for each of the variables assessed in the study. Data was collected by three nurses trained for two days. During data collection, both supervisors and the principal investigator checked the data for its completeness and missing information at each point.

4.9. Data processing and analysis

Socio- demographic, practice, knowledge and factor data were collected using a pre-tested self-administered structured questionnaire and entered to Epi Data version 4.6 and exported to SPSS Software version 26 for analysis. Descriptive statistics like mean, median, frequency, and percentage (%) were calculated and presented using text, frequency tables, pie charts, and graphs. Multicollinearity test was done before model fitness was assessed and VIF was <5, which means that variables are not correlated each other. Hosmer and Lemeshow goodness-of-fit test was checked, a p-value of >0.05 indicated that the model was fit. The binary logistic regression model was used to assess the association between the dependent and independent variables. After the assumptions and bivariate logistic regression analysis, factors with p-value ≤0.25 underwent multivariate logistic regression analysis to control the confounding variable. Finally, multivariable logistic regression analysis was done to identify the association factors and statistical significance was declared at p-value < 0.05 with 95% Confidence Interval.

4. 10. Operational Definitions

Initial trauma care: The immediate assessment and management provided to trauma patients at first contact, including airway, breathing, circulation, disability, and exposure (ABCDE) method(8).

Good knowledge: Knowledge was categorized as good if participants scored ≥75% of knowledge questions (29).

Good practice: practice was categorized as good practice if participants scored ≥75% of practice questions(29).

4.11. Ethical consideration

Ethical approval of the research proposal was obtained from the emergency and critical care nursing ethics review committee granted according to Addis Ababa University's directive. A formal letter was written by the school of graduate study and permission was asked from Addis Ababa Health Bureau's ethical approval. An official letter was submitted to governmental health centres. After getting permission from the health centers to participate in the study, written consent was obtained from the participants in the study. The study participants who meet the eligibility requirements was told about the study's objectives and methods. They also advised that participants in the study were optional. Finally, for the purpose of confidentiality, the names and any personal identifier such as name and phone number of the participants was not recorded rather code numbers were used.

4.12 Dissemination Result

The results of the study will be presented and submitted to Addis Ababa University School of Nursing and Midwifery Department of Emergency, Critical, and Chronic Care nursing as well as the Faculty of Medicine and Health Science. After that, the manuscript will be submitted to national or international scientific journals for publication. The Addis Ababa Health Bureau, Public Health and Emergency Management Directorate, Department of Emergency, Critical, and Chronic Care Nursing, College of Health Science and Addis Ababa University will receive the results.

5. RESULT

5.1 Socio demographic characteristics among health care providers (respondents)

This survey comprised 279 health professionals working at health centres. Among the participants, the slight majority 145(52%) were female respondents and 134(48%) were males.

The age of the respondents ranges from 24 years (minimum) to 48 years(maximum), with mean age ± standard deviation was 30.89 ± 3. 82. Majority of the respondents 138 (49.5%) were with age groups 26-30 years, followed by age groups 31-36 with 109(39.1%) while older participants were scarce with aged 36 years and above and age group with 20-25 years comprising only 24(8.6%) and 6(2.2%) of total sample respectively. In terms of geographic distribution, the majority of participants 111(39.78%) was from Addis-Ketema sub city.

Regarding their occupation, majority of them are nurses with 158(56.6%). the next majority are health officers who comprise 89(31.9%). In terms of educational status, majority of them held degrees accounting 228 (81.7%). Considering their experience, the most frequent were on age groups less than 3 years with 145(52%). regarding training status, of 93 trainee the majority had attended Basic Life Support (BLS) 39(41.9%) and Basic Emergency Care (BEC) 32(34.4%). Whereas with small amount, ACLS 10(10.8%) and ATLS 12(12.9%).

As shown below in table1.

Table 1: sociodemographic characteristics of health care providers

Name	Variables	Frequency (%)
Gender	Male	134(48%)
	Female	145(42%)
Age	20-25 years	6(2.2%)
	26-30 years	140(50.2%)
	31-36 years	109(39.1%)
	Above 36 years	24(8.6%)

Profession	Nurse	158(56.6%)
	Health officer	89(31.9%)
	Medical doctor	32(11.5%)
Educational level	Diploma	19(6.8%)
	Degree	228(81.7)
	MSC	32(11.5%)
Work experience	Less than 3 years	145(52%)
	3-6 years	74(26.5%)
	7-10 years	48(17.2%)
	Above 10 years	12(4.3%)
Training received	Yes	93(33.3%)
	No	186(66.7%)
Participants sub city	Arada	78(27.96%)
	Gulele	90(32.26%)
	Addis Ketema	111(39.78%)

Training status in type

Training type	Frequency	Percentage
BLS	39	41.9%
BEC	32	34.4%
ATLS	12	12.9%
ACLS	10	10.8%

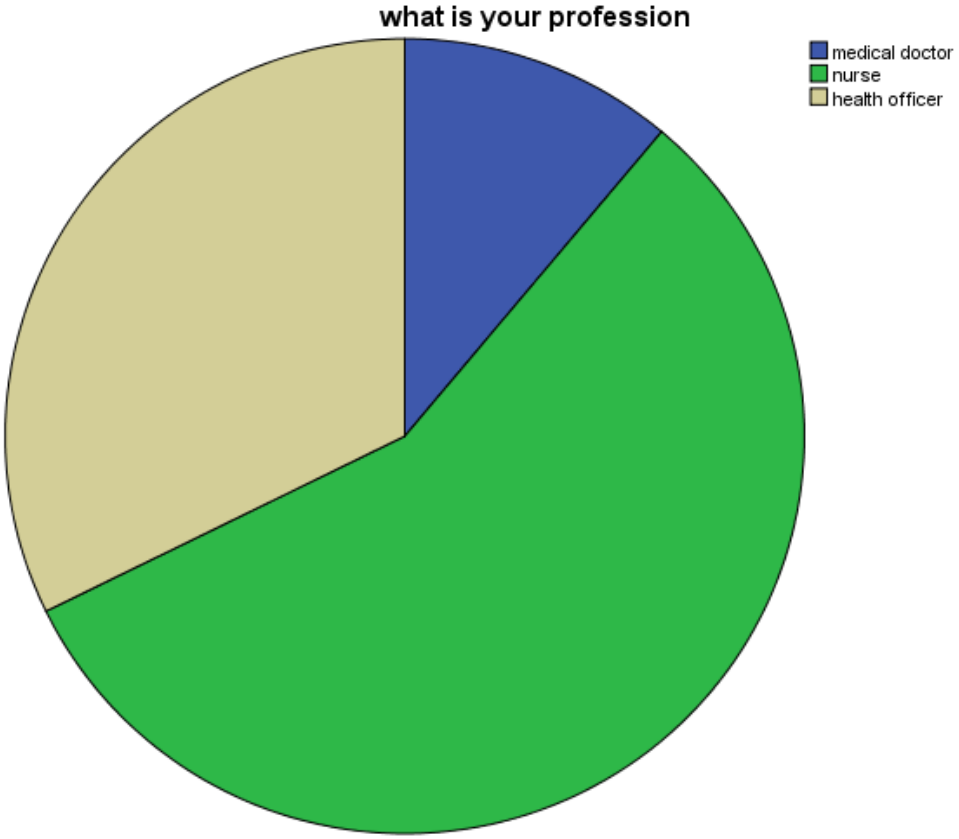


Figure 3: Pie chart showing distribution of HCPS working in selected HCs at Addis Ababa city, 2026

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5.2. Knowledge of health care providers (respondents) to wards basic life support in trauma care

To evaluate the overall knowledge of the respondents regarding basic life support trauma care individual scores were classified as good knowledge and poor knowledge. Accordingly, the majority of the participants 192(68.8%) whereas 87(31.2%) of the respondents had good knowledge about basic life support in trauma care.

Regarding primary survey majority of them 260(93.2%) answered correctly. Comparable proportion 191(68.5%) of the participants correctly identified the protocols for performing CPR and 192(68.8%) recognize the sign of tension pneumothorax and its management.

In terms of spinal immobility for cervical spine suspected patient 161(57.7%) correctly identified when to suspect spinal injury and 213(76.3%) understood the way how to apply a cervical collar.

Regarding pelvic stability, majority of participants 166(59.5%) understood how to evaluate pelvic stability. Almost all of the respondents 255(91.4) know uses of GCS and how to score. whereas the remaining 17(6.1%) of the sample did not provide an answer. Conversely, a critical knowledge gap was observed in advanced airway management, with only 94(33.7%) aware about definitive air way management protocols.

Regarding the preferred initial fluid for haemorrhagic shock management, 229 out of 279 participants completed the item, yielding an 82.1% valid response rate.

Table 2: Assessment of knowledge, about basic life support in trauma care among health professionals at selected health centres in Addis Ababa, Ethiopia,2026

Knowledge questions For (n= 279)	Correct (%)	Incorrect (%)
Primary survey in trauma care focus on:	260(93.2%)	19(6.8%)
What should you do if a person is breath but	122(43.7%)	157(56.3%)

unresponsive?		
Which of these is Preferred method to open airway in suspected c-spine injury?	118(42.3%)	161(57.7%)
In a trauma patient with suspected c-spine injury what is the priority action?	194(69.5%)	85(30.5%)
Sign of tension pneumothorax	192(68.8%)	87(31.2%)
Which one is correct to perform CPR (cardiopulmonary resuscitation)?	191(68.5%)	88(31.5%)
Oxygen should be given to:	145(52%)	134(48%)
The normal adult chest compression rate during CPR is:	131(47%)	148(53%)
The immediate management for an open chest wound is?	152(54.5%)	127(45.5%)
Which one is the preferred method for uncontrolled external haemorrhage?	202(72.4%)	77(27.6%)
What is the first sign of circulatory shock?	148(53%)	131(47%)
What is the most appropriate initial fluid for resuscitation in haemorrhagic shock?	229(82.1%%)	50(17.9%)
Glasgow coma scale is used to assess:	255(91.4%)	24(8.6%)
The preferred method for securing a definitive air way in a trauma patient with decreased level of consciousness (GCS<8) is:	94(33.7%)	185(66.3%)

Hypothermia prevention in trauma patient is important because it:	170(60.9%)	109(39.1%)

Knowledge result in three categories

Knowledge Result	Frequency (%)	Knowledge level
≥75%	87(31.2%)	Good
<75%	192(68.8%)	Poor

5.3. Practice of health care providers (respondents) toward basic life support in trauma care

The study addresses the practice of health care providers Among 279 participants in selected sub cities of Addis Ababa regarding their practice towards initial trauma care in health centres. Of 279 study participants significant majority 257(92.1%) demonstrate effectively and classified the overall level of practice on initial trauma care as having good practice. Conversely, only 22(7.9) of the sample exhibited poor practice during initial trauma management.

Of the respondent's majority of them 234(83.9%) reported that they always systematically apply The ABCDE approach in every trauma care.

According to this study descriptive analysis is done and evaluates the demonstration of emergency protocols regarding shock assessment and intravenous fluid (IV) initiation among participants and majority of respondents 236(84.6%) reported that they always perform these actions when indicated. Only minimal fraction 0.7% reports never and rarely doing. so, the cumulative percentage indicates that 93.2% of participants maintain high frequency compliance (always or often) with shock management.

On the study there was questions regarding usage of airway adjuncts, analysis examines self-report frequency out of 279 valid responses only one-quarter 71(25.4%) report that they always use oropharyngeal (OPA) and nasopharyngeal airway (NPA) when clinically indicated.

Regarding frequency of initial assessment majority of the respondents 227(81.4%) reported that they always perform frequent re assessment during critical initial assessment, followed by 28(10%) reported as they perform often. The left is presented **in the table below.**

Table 3: - Practice of health professionals on basic life support trauma Care in health centers of Addis Ababa, Ethiopia 2026.

Name	Variable	Frequency (%)	Name	Variable	Frequency (%)
Do you apply ABCDE approach	Always	234(83.9 %)	Do you document initial trauma findings and interventions	Always	249(89.2 %)
	Often	18(6.8%)		Often	159(5.4%)
	Sometimes	22(7.9%)		Sometimes	8(2.9%)
	Rarely	2(0.7%)		Rarely	5(1.8%)
	Never	3(1.1%)		Never	2(0.7%)
Do you manually stabilize c-spine	Always	155(55.6 %)	Do you coordinate with ambulance/transfer team for referral if needed	Always	133(47.7 %)
	Often	48(17.2)		Often	105(37.6 %)
	Sometimes	39(14%)		Sometimes	38(13.6%)
	Rarely	19(6.8%)		Rarely	2(0.7%
	Never	18(6.5%)		Never	1(0.4%)
Do you control external bleeding with direct pressure as first step	Always	241(86.4 %)	Do you perform CPR on individuals experiencing cardiac arrest.	Always	88(31.5%)
	Often	20(7.2%)		Often	75(26.9%)
	Sometimes	12(4.3%)		Sometimes	95(34.1%)
	Rarely	3(1.1%)		Rarely	14(5%)
	Never	3(1.1%)		Never	7(2.5%)
Do you administer oxygen with sign of	Always	236(84.6 %)	Do you reassess the patient	Always	227(81.4 %)

hypoxia	Often	17(6.1%)	frequently during initial care?	Often	28(10%)
	Sometimes	15(5.4%)		Sometimes	17(6.1%)
	Rarely	8(2.9%)		Rarely	5(1.8%)
	Never	3(1.1%)			2(0.7%)
				Never	

Practice result	Frequency (%)	Practice level
≥75%	257(92.1%)	Good practice
<75%	22(7.9%)	Poor practice

Do you perform rapid assessment for shock &initiate IV fluids when indicated	Always	236(84.6 %)	Do you use airway adjuncts when needed in unconscious patients?	Always	71(25.4%)
	Often	24(8.6%)		Often	100(35.8)
	Sometimes	15(5.4%)		Sometimes	85(30.5%)
	Rarely	2(0.7%)		Rarely	14(5%)
	Never	2(0.7%)		Never	9(3.2%)

5.4. FACTORS ASSOCIATED WITH KNOWLEDGE AND PRACTICE REGARDING BASIC LIFE SUPPORT IN TRAUMA CARE

5.4.1. Factors Associated with basic life support care knowledge

Bivariate logistic regression was performed to determine how socio demographic and institutional factors affect health care providers knowledge and were found substantially associated with their knowledge. With p-value of less than 0.25 that was subject for multivariable

analysis. However, clearing the possible confounding factors, a multivariable logistic regression model showed statistically significant association between work experience with age group less than3 years(AOR=4.191(95%CI=1.008-16.141), p=0.037),which was significant and 4 times increase the likelihood to experience the good knowledge than the reference group(with age groups above 10 years' experience).

Concerning Sex, with (AOR=.562(95%CI=.318-.995), p=0.048) was significant and males had lower odds of the likelihood to sound good knowledge than females.

Regarding type of profession nurses with (AOR=9.772(95%CI=3.573-26.727), P=0.000) were highly significant with 10 times increase or higher likelihood of good knowledge compared to the reference group followed by health officers with (AOR=8.150 (95%CI=2.865-23.182), P=0.000) which is also significant and increase the odds of the outcome 8 times compared to reference group. In terms of being trained (AOR=1.903 (95%CI=1.049-3.453), P=0.034)) which is statistically significant that having formal training is associated with increase odds of good knowledge by 1.903 compared to the those not having formal training.

as shown table 4.

Table 4: - Logistic regression analysis showing factors associated with knowledge at Addis Ababa, Ethiopia 2026

Name	Variables	Knowledge		COR (95%CI)	P-value	AOR (95%CI)	P-value
		Good knowledge	Poor knowledge				
Work experience	**<3 years**	7	6	**3.805(1.140-12.696)**	**.030***	**4.191(1.008-16.141)**	**.037**
	3-6 years	41	51	1.942(.564-6.691)	.293		
	7-10 year	34	87	**2.553(.702-9.285)**	**.155**		
	>10years	12	41	1			

Sex	Male	59	75	**.404(.243-.674)**	**.01**	**.562(.318-.995)**	**.048**
	Female	35	110	**1**		**1**	
Profession	**Nurse**	39	119	**12.714(4.860-33.258)**	**.000***	**9.772(3.573-26.727)**	
	Health officer	29	60	**8.621(3.187-23.34)**	**.000***	**8.150(2.865-23.182)**	
	Medical doctor	25	6	1		1	
Educational level	Diploma	8	11	1.213 (.664-2.216)	.529	1.325 (.364-4.831)	.670
	Degree	85	145	.658(.291-1.489)	.315	1.650(.685-3.976)	.264
	MSC	9	23	1		1	
Training received	**Yes**	44	49	**.409(.243-.689)**	**.001***	**1.903(1.049-3.453)**	**.034**
	No	50	136	1		1	
There are clear, written protocols / guidelines	Disagree	7	14	1		1	
	Neutral	23	50	3.804(1.012-14.298)	0.048	2.524(.571-11.165%)	.222
	Agree	51	98	3.363(0.940-12.025)	0.062	2.048(.487-8.624)	.328
	Strongly agree	13	33	4.442(1.111)	0.035	2.386(.509-11.194)	.270

5.4.2. Factors Associated with the Practice of basic life support in Trauma Care in health centres.

After bivariate logistic regression, variables with p-value greater than 0.25 were passed to multivariate regression to minimize confounding factors and got statistically significant variables such as Knowledge, Work Experience, Profession, Sex, and availability of essential equipment. Knowledge is a statistically significant predictor of the outcome. Participants categorized in group of poor knowledge had lower odds (AOR=.475(95%CI=.245- .920), P=0.027) of experiencing the outcome or poor practice compared to the good knowledge, in short this statistical statement means that participants with poor knowledge were actually less likely to have a bad outcome or demonstrate poor practices compared to people with good knowledge..

In terms of work experience, it was statistically significant overall effect on the outcome. Specifically, participants in the category of (3-6 years) of Work experience had (AOR=.287(95%CI=.082-1.006), P=0.032) lower odds effect on poor practice when compared to reference group. Regarding their Profession, it has significantly influenced on the outcome. Participants in profession category of nurse with (AOR= .283(95%CI=.109-.736), p=0.010) had lower likelihood of having poo practice for initial trauma care than those with reference groups (medical doctors).

Concerning sex, in this study females were significant predictor with (AOR=.452(95%CI=.229-.891), p=0.022). Female participants had lower likelihood of having poor practice than males. Concerning on essential equipment, participants who reported as neutral had (AOR=.491(95%CI=.266-.909), P=**0.024**), which was .495 times less likely to experience poor practice than those who reported as disagree.

Table 5: - Logistic regression analysis showing factors associated with practice of HCPs on initial trauma care at Addis Ababa, Ethiopia 2026.

Name	Variables	Practice		COR (95%CI)	P-value	AOR (95%CI)	P-value
		good	Poor				
Sex	Male	129	5	1		**1**	
	female	128	17	.399(.225-.709)	.002*	**.452(.229-.891)**	**.022***
Profession	Medical doctor	12	19	1		**1**	
	Nurse	26	132	.312(.135-.720)	.005*	**.283(.109-.736)**	**.010***
	Health officer	28	62	2.15(1.152-4.027)	.016*	3.363(.910-12.430)	.069
Work experience	<3years	5	8	1		**1**	
	3-6 years	14	78	.287(.082-1.006)	.105	**.212(.052_.874)**	**0.032***
	7-10 years	32	89	.575(.175-1.887)	.051	.984(.457-2.120)	.968
	>10 years	15	38	.632(.178-2.243)	.477		
Training received	Yes	32	61	1		1	
	No	34	152	.426(.242-752)	.003	.573(.297-1.106)	0.097
Essential equipment	Disagree	2	4	1		1	
	Neutral	1	12	.167(.012-2.368)	.186	**.491(.266-.909)**	**0.024***
	Agree	23	91	.505(.087-2.368)	.447	1.828(.971-3.440)	.062
	Strongly agree	40	106	.755(.133-4.282)	.751		
receive regular	Strongly disagree	1	2	1			

supportive supervision or feedback	Disagree						
	Neutral	19	62	1(.080-12.557)	1.000	1.565(.631-3.878)	.334
	Agree	21	73	.613(237-1.586)	.313		
	Strongly agree	16	58	.575(.226-1.467)	.1247	1.824(.482-6.900)	.376
		9	18	.552(.209-1.460)	.231		
Knowledge	Good knowledge	32	62	1		**1**	
	Poor knowledge	34	151	.436(.248-.768)	.004	**.475(.245-.920)**	**.027***

5.5. Institutional Factors influencing knowledge and practice of HCPs on basic life support in trauma care.

Descriptive statistics were done for the total score of institutional factors affecting knowledge and practice among HCPs who are working in initial trauma care.

Regarding resuscitation area most of them reported that they have well organized resuscitation area 176(63.1%) and 62(22.5%) reported agree and strongly agree respectively. In terms of availability of Essential equipment for initial trauma care (e.g., airway kit, oxygen, splints, IV sets) and Essential drugs for trauma (IV fluids, analgesics, antibiotics) more than half of them reported as they are always available in their facility with 146(52.3%) and 148(53%) respectively are strongly agree. 149(53.4%) of the participants reported as they agreed on clear, written protocols or guidelines for managing trauma patients in their facility.

Regarding adequate staffing, majority 101(36.2%) said neutral followed by 85(30.5%) of them reported as disagree on it and 81(29%) ,94(33.7%) reported as disagree and neutral on regular supportive supervision or feedback on their trauma management skills.

Table 6: showing institutional factors among health centers at Addis Ababa, Ethiopia 2026

Name	Variables	Frequency (%)
My health centre has a dedicated and well-organized trauma reception/resuscitation area.	Strongly disagree.	1(0.4%)
	Disagree	10(3.6%)
	Neutral	30(10.8%)
	Agree	176(63.1%)
	Strongly agree	62(22.5%)
Essential equipment for initial trauma care (e.g., airway kit, oxygen, splints, IV sets) is always available.	Strongly disagree.	
	Disagree	6(2.2%)
	Neutral	13(4.7%)
	Agree	114(40.9%)
	Strongly agree	146(52.3%)
Essential drugs for trauma (IV fluids, analgesics, antibiotics) are consistently in stock.	Strongly disagree.	
	Disagree	7(2.5%)
	Neutral	12(4.3%)
	Agree	112(40.1%)
	Strongly agree	148(53%)
There are clear, written protocols or guidelines for managing trauma patients in my facility	Strongly disagree.	-
	Disagree	11(3.9%)
	Neutral	73(26.2%)
	Agree	149(53.4%)
	Strongly agree	46(16.5%)
There is adequate staffing to manage a trauma emergency without disrupting routine services	Strongly disagree.	3(1.1%)
	Disagree	85(30.5%)
	Neutral	101(36.2%)

	Agree	59(21.1%)
	Strongly agree	31(11.1%)
I receive regular supportive supervision or feedback on my trauma management skills.	Strongly disagree.	3(1.1%)
	Disagree	81(29%)
	Neutral	94(33.7%)
	Agree	74(26.5%)
	Strongly agree	27(9.7%)

6. DISCUSSION

This research conducted in Addis Ababa to evaluate knowledge and practice of health care providers at health centre level to wards basic life support trauma care. The study involved 279 professional health care providers at health centre level from the three selected sub cities, with the slight majority 145(52%) were female respondents, while the remaining were males accounting 134(48%) of total sample. Almost 1:1 ratio indicates that both sexes were sufficiently involved.

The study involved majority of young, educated force with age group of 26-30 years and the mean age ± standard deviation was 30.89 ± 3. 82.in our study we found that majority of the respondents 158(56.6%) were nurses and 228(81.7%) hold degree. Interms of work experience, majority of them 145(52%) was found in the groups of less than 3 years. Regarding training, with only 33.3% receiving formal emergency care training such as (BLS) 39(41.9%), BEC 32(34.4%) and limited access to advanced life support ACLS 10(10.8%) and ATLS 12(12.9%). The study also found that the majority of participants 192(68.8%) had poor knowledge whereas only 87(31.2%) had good knowledge about basic life support in trauma care. Regarding practice majority 257(92.1%) of respondents experience good practice majority.

slight majority 145(52%) were female respondents, while the remaining were males accounting 134(48%) of total sample. Almost 1:1 ratio indicates that both sexes were sufficiently involved. This figure is better than the study conducted in a hospital of Sri Lanka, where 75% of the respondents involved were females. The study involved majority of young, educated force with age group of 26-30 years and the mean age ± standard deviation was 30.89 ± 3. 82.Which is similar to studies conducted at the "National Hospital of Sri Lanka, where 80% of the respondents were between the ages of 25 and 34"(30).In Addis Ababa, where the mean age of the respondents was 29.2 ±4.86 years(31) and also similar to the study in Gondar About 191 (51.5%) of participants were in the age group of 20 to 30 years and the mean age of participants was 30.54 (SD ±4.83)(27).

In our study we found that 158(56.6%) nurses and 228(81.7%) holding degrees. This is different from the study in Nepal that the largest professional group were doctors 46.4% and majority were married with 55.7% this also differs from this study where it shows a balanced staff between married and single individual. This discrepancy might be due to huge socio-

demographic difference between Ethiopia and Nepal. Interms of Work experience, majority of them145(52 %) was found in the groups of 1ess than 3 years. Which is similar to study in Nepal Most participants had 1–5 years of experience (40.4%).

A critical shortage exists in training received, with only 33.3% receiving formal emergency care training and limited access to advanced life support. Which is more lower than the study conducted in Addis abba in pre hospital setting 70% took first aid training(32). This discrepancy might be due to the study setting (in pre hospitals not in health centres), this indicates that there is lower focus on health centres and this affects their knowledge on initial trauma care.

6.1. Knowledge of Healthcare Providers on basic life support in Trauma Care

The study found that only 87(31.2%) of participants had good level of knowledge in basic life support in trauma care, but this was lower than the study revealed in Nepal 62% of health care providers had good knowledge this might be due to variation in sample size and difference in socio demographic status. it also marginally less than article done in Gondar Ethiopia only 42.9% had good knowledge (27). This discrepancy might be due to the training gap related to initial trauma care, education level participants, and working exposure in the emergency area, But this study is better than the study done in India that only17.4% had a good level of knowledge regarding trauma(33).

The bivariate and multivariate analysis of this study revealed that all of the institutional factors did not have any independent statistically significant association with Knowledge. But, the respondents' profession, their year of experience and training about initial Traum care, were found significantly related to their understanding of initial trauma care. In contrast to a medical doctor providing initial trauma care, those Nurses ten times (AOR=9.772(3.573-26.727) and health officers (AOR=8.150(2.865-23.182) eight times more likely to have good knowledge.

Concerning work experience, there was significant association between work experience with age group less than3(AOR=4.191(95%CI=1.008-16.141), p=0.037) was significant and 4 times more likely to had good knowledge than above 10 years. this indicates that when their experience increases their knowledge is vice-versa this might be when their age increases their interest to know new things decrease as they said during data collection some of the participants(especially old age) said that ‘‘we are apart from science, we only do the practice, even we forgot that we know before’’. regarding training status, (AOR=1.903(95%CI=1.049-3.453), P=0.034) which is

statistically significant that having formal training is associated with increase odds of the good knowledge by 1.903 compared to those who had no received training. This supports the theory conducted in an Indian study that discovered training had a major influence on prehospital care providers' attitude, practice, and knowledge scores (33).

6.2. Practice of basic life support Trauma Care among Healthcare Providers

Regarding practice this study is better than the study conducted in Nepal. Of 279 study participants significant majority 257(92.1%) demonstrate effectively and classified the overall level of practice on initial trauma care as having good practice. Concerning sex, in this study females were a significant predictor (AOR=.452(.229-.891), p=0.022), which means that Female participants had lower likelihood of having poor practice than males. from the study conducted in Nepal, only 25% demonstrated good practice(34),in Kenya also Sixty-seven (39.4%) of the participants were classified as having good practice towards care of patients admitted with trauma in surgical wards, of whom the majority were females(35).

The practice of the study was statistically significant with knowledge, work experience, essential equipment availability and profession.

Concerning knowledge from this study we found that there was significant, weak negative relationship between initial trauma care knowledge and practice.

In regression result (AOR=.475(95%CI=.245-.920), P=.027) this means that participants with poor knowledge were actually less likely to have a bad outcome or demonstrate poor practices compared to people with good knowledge which is less likely to had poor practice than good practice. Unlikely the study done in Nepal. The moderate positive correlations between knowledge, attitudes, and practices (r_s = 0.420–0.562, $p < 0.001$) suggest that improving knowledge and fostering positive attitudes could enhance practice behaviours(34).But our finding emphasizing that theoretical knowledge does not always translate into effective implementation. It might be professionals with low knowledge may act quickly or overconfidence without realizing their mistakes, over time hands-on repetition creates deep habits that do not require conscious theoretical thought, clear visual aids and packed trauma kits and guidelines: professionals can follow these tools perfectly to experience good practice without need of knowledge and understanding the deep medical science behind them. Many health care providers work by watching senior staffs.

With respect of work experience the study revealed it was statistically significant overall effect on the outcome. Specifically, participants in the category of (3-6 years) Work experience had (AOR=.287(95%CI=.082-1.006), P=0.032) 71.3% lower odds effect having poor practice compared to the reference group. Which contradicts with the study conducted in Addis Ababa pre-hospital healthcare providers who had 4–5 years of work experience were 5.86 times more good practice than < 3 years of experience (AOR=5.86; 95% CI:1.424–24.109)(36). Concerning on essential equipment the participants who report as disagree were (AOR=**.**052(95%CI=.003-.966), P=0.047),.052 times less likely to experience poor practice than reference group.

Regarding profession from this finding indicated Participants in profession category of nurse with (AOR= .283(95%CI=.109-.736), p=0.010) lower likelihood of having poo practice on initial trauma care than those with reference groups (medical doctors). The reason might be that Senior staff may know exactly what to do when a trauma patient arrives, but they might have forgotten the science behind them.

Limitations of the study

- ✓ This study uses only self-administered questionnaire which assess more of knowledge and practice of the participant and not supported by observation of their practice.
- ✓ This study was conducted exclusively in governmental health care settings.
- ✓ Limited geographic coverage
- ✓ Shortage of literatures specifically in Health Centres to compare results (not research done on this topic and setting) in LMICs.
- ✓ Findings cannot represent rural health centers.

7. CONCLUSION AND RECOMMENDATION

7.1. Conclusion

Generally, this study has tried to assess the knowledge, practice and associated factor of basic life support in trauma care among health care providers in Addis Ababa.

Concerning knowledge, the participants lack adequate knowledge regarding basic life support. Of the participants majority of them know about primary survey and correctly identified the protocols for performing CPR. In terms of spinal immobility for cervical spine suspected patient 161(57.7%) correctly identified when to suspect spinal injury and 213(76.3%) understood the way how to apply a cervical collar.

Regarding practice majority of them report being experienced in properly performing clinical skills on basic life support in trauma care. Majority of respondents reported as they always systematically apply ABCDE approach and according to demonstration of emergency protocols regarding shock assessment and intravenous fluid (IV) initiation among participants, a majority 236(84.6%) of them reported that they always perform these actions when indicated.

Interms of associated factors Regarding resuscitation area most of them reported that they have well organized resuscitation area.

Generally, based on our findings, majority of health care providers lack adequate knowledge regarding initial trauma care, yet a majority of them report being experienced in properly performing clinical skills. Statical analysis reveals that providers ‘knowledge is substantially associated with their specific profession, years of experience and being trauma training received. Formal training significantly enhances provider knowledge levels, nurses and health officers show better knowledge outcome.

Similarly, clinical practice is significantly influenced by profession, work experience, the availability of essential equipment and knowledge. Equipment availability directly improves trauma management practices. Interestingly, the data showed unexpected inverse relationship between knowledge and practice: participants with poor knowledge scores were actually less likely to demonstrate poor practices or experience negative outcomes compared to those with good knowledge.

7.2. Recommendation

- ✓ The PHCP should increase their knowledge and have to update themselves with adapted ATLS guideline to be holistic in understanding initial trauma care, especially those who have many years of work experience.
- ✓ To offer ongoing trainings with a simulation-based approach and access for education to advance their education level.
- ✓ Continuous assessment CPD focusing more knowledge to wards initial trauma care of PHCP.
- ✓ For researchers to further investigate on the reason of low knowledge despite good practice.
- ✓ Conduct regular in-service trauma care training.
- ✓ Distribute essential emergency equipment across all public facilities as it is significant for clinical practice.

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9. ANNEXES

Annex-I

Information sheet for participants and consent form

The project's title: assess knowledge, practice and associated factors regarding initial trauma care among health care providers working in selected governmental health centers in Addis Ababa, Ethiopia

Principal investigator: sr. Firewoine Yeniemengist Andualem

Advisors: Mr. Birhanu Melaku (MSC in ECCN), Asmamaw Abebe (MSC in ECCN, Ass'tproff), SosinaWorkineh (BSc, MsON, MPH)

Department: Addis Ababa University, School of Nursing and Midwifery, Department of Emergency critical and chronic Care nursing, College of Medical and Health Science.

Introduction: My name is sr. Firewoine Yeniemengist, and I work as an emergency and critical care student in the department of emergency and critical care at Addis Ababa University College of Medical and Health Sciences. I am studying medical staff members at health centers in Addis

Ababa, Ethiopia, with regard to their knowledge and practices in initial trauma care.

Purpose- This study will evaluate primary healthcare practitioners' knowledge and

Practice about providing initial trauma care in Addis Ababa, Ethiopia's health

Centers. This study will offer baseline data for the scientific community and other concerned bodies to understand the level of Knowledge and practice of health care providers to implement a possible intervention for appropriate initial trauma care for trauma patients.

Study procedure-To achieve the planned objective, the structured questionnaire will utilize to

gather necessary information regarding initial trauma care for trauma patients.

Participant's right: I kindly request your voluntary participation in this study. Should you

want to take part, you will be required to answer a brief survey.

Confidentiality: Every piece of information you provide, and any information gathered from the Participants will be kept private. The data you give will be used for this study only and cannot be utilize for any other purpose.

Benefit: Your involvement in this research will benefit you to know knowledge and Practice regarding initial trauma care for trauma patients.

Risk: Participating in this study carries no risk other than a maximum 30-minute time Commitment.

Inducement, Incentive, and Compensation: You will not receive any unique rewards, benefits, Or remuneration for taking part in this study.

Freedom to withdraw: The participants in the study are informed that they are free to quit the Research at any time.

Person to contact: To obtain further details and inquire about this initiative, please get in touch With the individuals listed below:

Addis Ababa University, College of Medical and Health Science, Office Tel: _____

Principal Investigator Name and Address:

Sr. Firewoine Yeniemengist

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Advisors' Name and Address. Birhanu Melaku(MSC in ECCN), Asmamaw Abebe (MSC in ECCN, Ass'tproff), Sosina Workneh (BSc, MsON,MPH)

Annex II

Participant Consent Form

Study Participant code: _____ Date_____, have gotten I was Aware that any information gathered about me would be kept private and that I may decline or Leave the study at any moment without it having an impact on my employment.

The information above has either been read to me in a language I can understand or I have Personally read it. I got a chance to ask questions about it and any other questions that I had, and I got satisfactory answers to all of them. My voluntary consent to be a study subject has been Given. Name and signature of study participant: _____.

Name and signature of principal investigator: _____.

Annex III

QUESTIONNAIRES

Part I Sociodemographic characteristics of health care professionals practicing in health centers of Addis Ababa. Instruction: Please circle the number of your choice

S.NO	Questions	Response
1.	Sex	1.Male 2.Female
2.	Age in years	_____.
3.	Marital status:	1. Single 2. Married 3. Divorced 4. Widowed
4.	Profession:	1. Nurse. 2. Health officer 3. Medical Doctors 4. Emergency medical technicians
5.	Educational level	1. Diploma 2. Degree 3. MSc
6.	How many years of work experience do you have?	_____ .
6.	How long do you have been Working in Initial trauma care?	_____

7.	Have you ever taken formal training on Initial Trauma Care?	1.Yes 2. No
8.	If yes, type of training Duration in days	_____. _____.
9.	Sub-city of health facilities	Arada 2. Gulele 3. Addis ketema
10.	Name of health facilities	_____.

Part II Knowledge of health care providers about initial trauma care at HCs in Addis Ababa. Instruction: Please circle the number of your choice.

S.NO	Questions	Response
1.	What is the correct sequence for initial assessment of a trauma patient?	1) Breathing, Airway, Circulation, Disability, Exposure 2) Airway, Breathing, Circulation, Disability, Exposure (ABCDE) 3) Circulation, Airway, Breathing, Disability, Exposure 4) Exposure first to identify all injuries
2.	The primary survey in trauma care focuses on:	1) Detailed head-to-toe examination 2)Life-threatening conditions (ABCDE) 3) Secondary injuries only 4) Patient history
3.	What should you do if a person is breathing but unresponsive?	1) place them in recovery position 2) start chest compression 3) give rescue breath 4) perform abdominal thrust
4.	Do you know which type of trauma patients you should suspect C-spine injury?	1. Yes 2. No
5.	Do you know how to apply cervical collar?	1.Yes 2.No

6.	Which of these is the preferred method to open the airway in a suspected spinal injury?	1) Head tilt-chin lift 2) Jaw thrust 3) Neck extension 4) Side-lying position
7.	In a trauma patient with suspected cervical spine injury, what is the priority action?	1) Immediate intubation 2) Manual in-line stabilization of the cervical spine 3) Apply oxygen mask 4) Check for bleeding
8.	Signs of tension pneumothorax (a breathing threat in primary survey) include all EXCEPT:	1)Tracheal deviation away from the affected side 2) Hyper-resonance on percussion 3) Decreased breath sounds on affected side 4) Immediate bilateral chest tube insertion as first step
9.	Which one is correct to perform CPR (cardiopulmonary resuscitation) ?	1) 2 rescue breath followed by 30 compressions. 2) 30 compressions followed by 2 rescue breath. 3) 2 rescue breath followed by 15 compressions 4)15 compressions followed by 2 rescue breath
10.	Oxygen should be given to trauma patients who:	1) are bleeding 2) have difficulty breathing 3) are unconscious 4) all
11.	The normal adult chest compression	1)60–80/min 2)80–100/min

	rate during CPR is	3)100–120/min 4)120–150/min
12.	The immediate management for an open chest wound is:	1) insert chest tube on the affected side 2) cover it with an occlusive dressing taped on the three sides 3) perform needle thoracocentesis 4)apply direct pressure
13.	which one is the preferred method for uncontrolled external haemorrhage in initial care:	1) Direct pressure 2) Elevation alone 3) Tourniquet immediately 4) Packing only
14.	What is the first sign of circulatory shock?	1) Tachycardia 2) cyanosis 3) Hypotension 4) Bradypnic
15.	What is the most appropriate initial fluid for resuscitation in hemorrhagic shock?	1) 5% Dextrose 2) Normal saline or Ringer's lactate 3) Blood only 4) Colloids exclusively
16.	Do you know how to assess pelvic stability?	1. Yes 2. No
17.	Glasgow Coma Scale (GCS) is used to assess:	1)blood loss 2)level of consciousness 3)oxygen saturation 4)Pain level
18.	The preferred method for securing a	1)nasopharyngeal airway

	definitive airway in a trauma patient with decreased level of consciousness (GCS<8) is:	2) oropharyngeal airway 3) Bag-valve-mask ventilation 4) Endotracheal intubation
19.	Hypothermia prevention in trauma patients is important because it:	1) improve appetite 2) reduces bleeding complication 3) increase pulse rate 4) has no effect

Part III: Practice on Initial trauma care of health care providers at HCs of Addis Ababa.
Instructions: Indicate how often you perform the following in your routine practice for trauma patients. Please click the box you choose.

S.NO	Questions	Response				
		Always	Often	Sometimes	Rarely	Never
1	Do you apply the ABCDE approach systematically in every trauma case.					
2	Do you manually stabilize the cervical spine during initial assessment if injury is suspected.					
3	Do you control external bleeding with direct pressure as the first step.					
4	Do you administer oxygen to trauma patients with signs of hypoxia					

5	Do you perform rapid assessment for shock and initiate IV fluids when indicated.					
6	Do you use airway adjuncts (e.g., OPA/NPA) when needed in unconscious patients.					
7	Do you reassess the patient frequently during initial care.					
8	Do you document initial trauma findings and interventions					
9.	Do you Coordinate with ambulance/transfer team for referral if needed.					
10	Do you perform cardio-pulmonary resuscitation (CPR) on individuals experiencing Cardiac arrest					

PART IV: Factors influencing initial trauma, care knowledge and PRACTICE

Instructions: Please indicate your level of agreement with the following statements regarding your work environment and personal factors. Please click the box you choose.

S.NO	Question	Response				
		Strongly Agree	Agree	Neutral	Disagree,	Strongly Disagree
1.	My health center has a dedicated and well-organized trauma reception/resuscitation area.					
2	Essential equipment for initial trauma care (e.g., airway kit, oxygen, splints, IV sets) is always available.					
3.	Essential drugs for trauma (IV fluids, analgesics, antibiotics) are consistently in stock.					
4.	There are clear, written protocols or guidelines for managing trauma patients in my facility					
5.	There is adequate staffing to manage a trauma emergency without disrupting routine services					
6.	I receive regular supportive supervision or feedback on my trauma management skills.					

Thank you for your cooperation!