ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF EMERGENCY MEDICINE

ASSESSMENT OF KNOWLEDGE AND PRACTICE OF ACUTE TRAUMA CARE BY HEALTH PROFESSIONALS AT GOVERNMENT HEALTH CENTERS IN ADDIS ABABA ETHIOPIA

BY: - REKIK ESHETU

A THESIS SUBMITTED TO THE DEPARTMENT OF EMERGENCY MEDICINE, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN EMERGENCY MEDICINE AND CRITICAL CARE NURSING.

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MASTER THESIS

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DECLARATION

I certify that this thesis is my own original work and has not been presented for award of a degree at any other university.

SIGNATURE: _____DATE: _____

REKIK ESHETU

CERTIFICATE OF APPROVAL

This thesis has been submitted with the approval of my advisors:

1. Dr. BIRUK GIRMA(MD, Assistant Professor)

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Dedication

Dedication to my Mother

My Hero in Heaven

This is a special page made especially for my Mother, ZEWDINESH HAILU (ETTEYE). She is to me my rock. She is by far the strongest woman I have ever known. She has had many trials in her life and tragedies, yet she overcomes all of them. And becomes even stronger than before. She is there for us 100%, no questions asked.

Mom, words can never express the deepest gratitude I have for you. You have been there for me my whole life and I love you so much for it. I mostly admire and love you for the person YOU are.

I love you always,

Your Daughter

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GLOSSARY

AA Addis Ababa

AHA American Heart Association

BLS Basic Life Support

BSc Bachelor of Science

CSA Central Statistical Agency

ED Emergency Departments

GP General Practitioner

HC Health Center

HO Health officer

HP Health Professionals

IEC Institute Ethical committee

MSc Master of Science

PHC Primary Health Care

RTA Road Traffic Accident

SPSS Statistical package for social sciences

TASH Tikur Anbessa Specialized Hospital

WHO World Health Organization

OPERATIONAL DEFINITIONS

Education:-It refers to the level of education of the participants and will be classified in 3 groups which are Diploma, college Degree and Masters.

Trauma:-physical damage to a human being caused by intolerable transfer of energy, it is may be mechanical, thermal, electrical, chemical, or radiation energy or by the sudden absence of heat or oxygen

Knowledge:- is a familiarity, awareness, or understanding of trauma victim handling, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning as measured by knowledge questionnaire.

Practice:- is a skill to manage and provide a trauma handling at health centers, but the required care can be done by having all the mandatory knowledge apart from the skill to provide the necessity trauma care for the injured patient.

The knowledge and practice level of the participant was measured as:

Very good = participant who scored $\geq$ 75%

Good = participant who scored between 50% to 75%

Poor = participant who scored between 25% to <50%)

Very poor = participant who scored < 25%)

ABSTRACT

Background:-Physical Trauma/Injury is defined as a physical damage to a human being caused by intolerable transfer of energy. It can be mechanical, thermal, electrical, chemical, or radiation energy or by the sudden absence of heat or oxygen.

Objective: - The objective of this study is to assess the knowledge and practice of acute trauma care among health professionals working at selected government health centers in Addis Ababa Ethiopia, 2019 from March 11-April 8/2019.

Methods:-Institutional based cross sectional study design was utilized to assess knowledge and practice of emergency unit health professionals found in ten sub cities of Addis Ababa towards acute trauma care. Structured, Pretested and self-administered questionnaire was used for data collection. Data were imported into Epidata 4.4 and analyzed using SPSS version 20.0. The alpha level was set at 0.05 to determine statistical significance.

Result: - There were 118 participants. From these, majority of the participants73 (61.9 %) were Nurses and females' accounts for 72 (61.0 %). Majorities; 77(65.3 %) of health professionals had college degree and among them 73 (61.9%) had more than 4 years' work experience. About 90 (76%) of the respondent had trauma related training once in their clinical career. Nearly half of the respondents (47.5%) had good knowledge scores, with the mean score of 10.81 (SD = ±2.86) and Majority, 82(69.5%) of respondents scored poor in practical assessment with Mean score of 3.65(SD=±1.6).Those who have work-experience for more than four years [p=.011, (CI= (037, 0.653)] were significantly associated with poor knowledge of health professionals related to acute trauma care.

Conclusion: - In conclusion, emergency unit health professionals in these health centers demonstrated overall unsatisfactory levels of knowledge and practice. It is clear that ongoing education on how to manage trauma victim must be periodically under taken to enhance and update health professionals' knowledge about current and emerging acute trauma care practice.

Key words: - knowledge, practice, health care professionals

CHAPTER ONE

1. INTRODUCTION

1.1 BACKGROUND

This chapter introduces the study. It represents the reasons why I felt it is important to assess the Knowledge and Practices of health professionals toward acute trauma care at selected government health centers, emergency unit.

Trauma is one of the major causes of mortality and morbidity worldwide [1]. The term ‘trauma’ comes from a Greek word, it mean ‘wound, injury, damage’ caused by external violence [2]. Trauma can be a physical or psychic. Physical Trauma/Injury defined as a physical damage to a human being caused by intolerable transfer of energy, it is may be mechanical, thermal, electrical, chemical, or radiation energy [3] or by the sudden absence of heat or oxygen [4]. Trauma can be considered as unintentional which include those caused by road traffic incidents, falls, drowning, burns, and poisonings, and also trauma considered to be intentional include those caused by self-harm, interpersonal violence, war and conflict [5–7].

The major concept in the care of trauma patients is the “Golden Hour”, which is defined as the first 60 minutes after sustaining a traumatic injury. Effective care within this hour is likely to have a significant impact on patient survival [8]. Trauma care involves the provision of appropriate care at medical facilities/institutes to any victims with injuries. Trauma care is typically integral to the injury field; because it is critical to lessening the consequences of injury [9]. The presence of an effective trauma systems and trauma care has become a global concern due to its large impact on mortality, long-term disability and financial costs [8].

According to the World Health Organization, more than 5 million people die each year as a result of injuries. These accounts for 9% of the world’s deaths, nearly 1.7 times the number of fatalities that result from HIV/AIDS, tuberculosis and malaria combined [5]. As per this study approximately, a quarter of the 5 million deaths from injuries are the result of suicide and homicide, while road traffic injuries account for nearly another quarter. The other main causes of death from injuries are falls, drowning, burns, poisoning and war. Trauma disproportionately affects the young, being the leading cause of death for under 45s in the US [10, 11].

From the total trauma case which is happened worldwide and indicated above, around 90% of the deaths occurs in low and middle income countries [5]. Therefore, injury is one of the commonest causes of death and disability in the African region, particularly among those aged 5–29 years [12]. Three of the top five causes of death for this age group are injury related. Every day in Africa, more than 2,000 people die from injuries. Injury-related deaths in Africa among people aged 15–44 years rank second after HIV/AIDS[13]. In Kenya, Nairobi injuries related death accounted for 10.6% of the total death recorded in the year 2014. Majority of the deaths happened in persons aged 25 to 44 years (48.1%). Males accounted for 85% of all the injuries [14].

A study conducted in Addis Ababa Black line specialized hospital showed that the magnitude of injury in patients visiting emergency department between February 1 to April 30, 2013 was 32.5% [15]. The other study which is conducted in Addis Ababa in the year 2005/2006 shows that injury related death accounted for 27% of all patient who visited emergency department, 5% of all patient who visited the hospital [12]. A similar study was conducted in other region cities of Ethiopia. From that; in North Gondar, 5.4% of the total patients seen in health institutions were injury cases [16]. And also out of 13,500 patients who visited surgical outpatient department of Jimma University specialized hospital during the study time 2011; 1,102 (8.2%) were injury cases [17].

1.2 Statement of the problem

It is well known that, different health care professionals are highly involved in acute trauma care in the health centers. They are the one who is responsible to initiate and perform trauma care without losing the golden time of the patient [18]. And due to the time-sensitive nature of traumatic injuries many patients are first treated at the nearest health centers and/or hospital to ensure stabilization before transferring to a major trauma center. Therefore, the knowledge and practice of proper acute trauma care among health professionals are crucial for minimizing the occurrence of long-term morbidity or mortality. But the question is; do most of the health care professionals have the standard acute trauma care knowledge and practice?

In Ethiopia, like other developing countries, trauma/injuries are common but little attention is being given to this problem. So that, from studies we can conclude the presence of knowledge and practice gap of trauma victim handling among health care professionals working with traumatic patient. But the other critical questions are how much? On which specific case of trauma care? How about health care professionals working in health centers, which have a large contribution in Ethiopian medical services? And other related critical questions, specifically among health care professionals working in emergency unit of health centers.

Therefore, this study will focus on finding an answer for the above listed question, by assessing the health professionals knowledge and practice of acute trauma care in Addis Ababa selected government health centers, and identify the gap, which will give an insight for health center managers & policy makers to take a correction major and also which can be used as an input to researchers for further study on the improvement of health care professionals knowledge and practice.

Generally, the ultimate solution to reduce rates of death or disability from life-threatening injuries is to prevent them. However, the other achievable solution is to minimize the consequences of serious injury, including long-term morbidity or mortality, by providing an effective acute trauma care on time. Providing quality support and care services to victims of injuries can prevent fatalities, reduce the amount of short-term and long-term disability, and help those affected to cope with the impact of injury on their lives (5). Improving the practical

capacity and knowledge of health care professionals, availability medical equipment, proper planning & utilization of resources and access to trauma care systems, including pre-hospital (first responder, ambulance, etc) and hospital-based care, can help to reduce the effects of injuries.

To my knowledge, there are no published studies about health care professionals' knowledge and practice toward traumatic victim handling at health centers in Ethiopia. Therefore, the aim of this study is to fill this gap by examining the health professionals' knowledge and practice on trauma victim handling at selected government health centers in Addis Ababa, Ethiopia. And also to investigate the major factors affecting health professionals' knowledge and practice that hinder not to implement to the standard of care expected in trauma handling.

1.3 Significance of the study

This study was conducted to investigate the level of knowledge and practice gap among health professionals' on acute trauma care at selected governmental health centers in Addis Ababa, Ethiopia. Identifying the gap of knowledge and practice on acute trauma care and listing the main cause for happing of this gap have an importance for different health office, policy makers and for the ministry of health to take a corrective action to fill the gap by different methods. In addition to this it has an advantage for health professionals' to know their own gap from the required standards level. The study may impose to get trainings on acute trauma care before assigned at emergency unit and even may lead to include acute trauma care as part of formal education in the curriculum.

In addition, the A.A health office and possibly, at the national level will utilize the finding of this study for planning health care delivery to trauma victim.

This study also provides baseline information to other researcher to work further research on related issues.

CHAPTER TWO

2. LITERATURE REVIEW

A report generated by world health organization in the year 2014 about injuries and violence showed as there is one injure related death in the world in every six seconds. The vulnerable groups of injuries in the world or within the countries are not evenly distributed; some people are more vulnerable than others. The major factors for the nature of trauma are age, sex, regions, and income group. For example, in low and middle income countries in western Pacific, the primary trauma-related causes of death are road traffic injuries, suicide and falls, on the other side in low and middle income countries of the American, the major cause of injury related death are homicide and road traffic injuries. The leading cause of injury death in the high-income countries of the world is suicide, with road traffic injuries and falls second and third. As per this, the contribution of different type of injuries for the death worldwide is road traffic (24%), suicide (16%), falls (14%), homicide (10%), drowning (7%), fire related burns (5%), poisonings (4%), war (2%), and other unintentional injuries (18%)[5]. A study which is conducted by Vavilala et al, showed a similar result except some variation on the contribution of fall (8%) and additional death contribution by violence (11%) [11]

Injury-related deaths in Africa among people aged 15–44 years rank second after HIV/AIDS [12]. According to the data which is presented by www.ourworldindata.org , From Africa, in the year 2016 the highest Disability-Adjusted Life Year (DALYs) from injuries recorded countries are Somalia (6325.53), Central Africa Republic (6281.83) and South Africa (6105.79) per 100,000 ranked from 1st to 3rd respectively. Ethiopia has a loss of life equal to 3926.53 DALYs per 100000 on the same years. Which is the second lowest next to Djibouti (3334.45 per 100,000) in horn of Africa [29].

A study which was conducted in Pennsylvania, USA by Bruce et al., in the year 2015 with an objective to examine health care provider knowledge, attitudes, practices, competence, and perceived barriers to implementation of trauma-informed care. This cross-sectional study used an anonymous web-based survey to assess attitudes, knowledge, perceived competence, and practice of trauma-informed care among trauma providers (nurses, physicians, therapists [physical, occupational, respiratory]) from an urban academic medical center with a regional resource trauma center. From the total of 147 participants, the majority were nurses (65%),

followed by therapists (18%) and physicians (17%), with a median 3 years of experience; 75% answered the knowledge items correctly and 89% held favorable opinions about trauma-informed care. Nineteen percent rated themselves as less than “somewhat competent.” All participants rated the following as significant barriers to providing basic trauma-informed care: time constraints, need of training, confusing information about trauma-informed care, and worry about re-traumatizing patients [30].

Another study was conducted on the Knowledge, attitude, and practice of ambulance nurses in pre-hospital care in Malang, Indonesia in the year 2015. On this cross-sectional paper-based survey, 465 participants from 45 health care services were involved. Participants’ attitude score for pre-hospital care was the highest and knowledge of pre-hospital care was the lowest score. This study revealed that knowledge ($p = 0.022$), attitude ($p = 0.012$), and practice scores ($p = 0.026$) were significantly different based on the training experience. The education level of participants contributed significantly to the difference in attitude ($p=0.001$) and practices cores ($p = 0.034$).Participants’ experience had a significant contribution to the difference in attitude score ($p = 0.002$).The knowledge ($p = 0.001$) and practice ($p = 0.002$) for pre-hospital care of hospital-based ambulance nurses were significantly higher than Community Health Centre-based ambulance nurses [20].

The knowledge, attitude and practice of basic life support among junior doctors and nursing students in a tertiary care medical institute in India was studied by Yunus et al. Out of 330 participants. Out of these candidates, 185 (56.24%) were B.Sc. nursing students, 119 (36.17%) were medical students and 25 (75.99%) were interns and junior resident doctors. Only 16.41% of all participants and 52% of doctors have received class and/or hands on training. The untrained participants have scored poorly as compared to trained participants in theoretical knowledge and practice of basic life support (24.36 % and 53.45% versus 9.25 % and 24.07%) respectively. The mean score for both theoretical knowledge and practice of basic life support for trained students was higher than that of the untrained participants and the statistical difference was highly significant - $p<0.0001$. Finally, the study concludes that, knowledge and practice skills of basic life support are poor in medical and nursing students although they have shown an excellent attitude towards it [31].

A study of knowledge, attitude and practice of hospital consultants, resident doctors and private practitioners with regard to pre-hospital and emergency care in Lucknow, India was conducted by Kumar et al. In this cross-sectional study 200 residents, 104 hospital consultant and 108 private practitioners ware participated. The result of the study showed that Median scores of knowledge (26/50), attitude (41/50) and practices (27/50) showed less than adequate knowledge and practices. However, a positive attitude was seen in all the 3 group of respondents'

A study which was conducted in Botswana by Rajeswaran et al., about the assessment of nurses' cardiopulmonary resuscitation knowledge and skills within three district hospitals is one of the representative research work to show the presence of knowledge and skill gap with in nurses. The study population of this research work is 154 nurses; the majorities (70%) were female. Nearly 60% were aged between 20 and 30 years and 18% were aged over 40 years. Over 84% of the nurses were trained to diploma level (nursing or midwifery or both); graduate nurses represented 16%; and only one nurse had obtained a master's qualification. The duration of work experience was divided between 49.3% (working from between 1 and 6 years) and 50.6% (working for more than 7 years). A pre-test, intervention, post-test, and a re-test after 6 months were utilized to determine the knowledge and skills gap. The knowledge level of nurses in all the three hospitals was almost the same in the pre-, post- and re-tests. While the majority scored between 45% and 51% in the pre-test, there was a considerable improvement in the scores in all three centers after the training session (72.9%–76.4%). Performance dropped again in all groups after 6 months in the re-test to between 60% and 62.4%. From this study, it is direct to recognize the importance of attending a regular refresher training courses in irrespective of their experience, areas of work and educational level [20].

A study which was conducted on the evaluation of nurses' theoretical knowledge about basic life support in the year 2009 in a district Greek hospital showed the self-assessment result. As per study, 14.3%, 44.2%, 31.2% and 10.3% rated their knowledge as not good, moderate, good and very good respectively. No one rated her/his knowledge as excellent. The participants' self-assessment of basic life support theoretical knowledge did not correlate significantly with the final performance in the written test. No difference regarding the performance in the written test was observed between nurses who had participated in a refresher basic life support course after

graduation and those who had not. The nurses without any previous personal experience in the basic life support had a higher probability to pass the written test [32]

A cross sectional study on knowledge, practice and associated factors towards basic life support among nurses working in Amhara region referral hospitals was conducted by Mengistu Mekonnen et al. [33] in 2016. A total of 397 nurses working in Gondar University Hospital and Bahirdar Referral Hospitals were participated in this study. This study revealed that, among the study participants, 38.6% and 28.4% had good knowledge and good practice of BLS, respectively. Educational status, assigned place, training, and previous exposure were significantly associated with knowledge of BLS. With regard to practice of BLS: training, previous exposure, confidence and knowledge were factors associated with practice of BLS at ($p \leq 0.05$).

CHAPTER THREE

3. OBJECTIVE

3.1 General objective

To assess the knowledge and practice of health professionals' acute trauma care at emergency units of selected government health centers in Addis Ababa, Ethiopia from March11-April 8, 2019.

3.2. Specific objectives

i. To assess the knowledge of health care professionals' acute trauma care
ii. To assess the practice of health care professionals' acute trauma care
iii. To identify factors affecting health care professionals' knowledge and practice on acute trauma care
iv. To identify the extent of trauma related training among health care professionals working at emergency units of selected Addis Ababa health centers

CHAPTER FOUR

4. METHODS AND MATERIALS

4.1 Study design

4.2 Study setting and Study period

4.2.1 Study setting

The study was conducted at emergency unit of selected 29 governmental Health Centers under Addis Ababa City Administration Health Bureau, located in different sub cities (Addis Ketema, Akaki-Kality, Arada, Bole, Gulele,kirkos,kolfe- Keranio, Lideta, Nifas-Silk-Lafto And Yeka sub citiy), Addis Ababa, Ethiopia 2019.

Addis Ababa is the capital city of Ethiopia which covers an area of 520.14 km2. It has ten sub cities which encompasses 116 districts. According to the National population and Housing Census of Ethiopia projection figures, the total population of Addis Ababa is 3,606,000 in 2019.

In Addis Ababa there 98 Health centers employing 38 General Practitioners (GP), 1,052 Health Officers (HO) and 2734 Nurses of which 1,149 were Diploma and 1,585 were BSc Holder. This has been giving routine health service for the community. The health centers provide services for a population of approximately 40,000 people per a year.

Subdivision

The city is divided into 10 boroughs, called sub cities (kifle ketema), and 99 wards (kebele). The 10 sub-cities are:

Table 4.1: Population date per each sub cities

S.No.	Sub city	Area (Km^2)	Number of health centers	Number of nurses		Number of GP	Number of HO
				Degree	Diploma		
1	Addis Ketema	7.41	9	93	218	6	114
2	Akaki Kality	118.08	10	151	95	0	112
3	Arada	9.91	9	119	141	8	123
4	Bole	122.08	10	195	161	2	142
5	Gullele	30.18	10	63	159	4	115
6	Kirkos	14.62	8	132	159	0	71
7	Kolfe Keranio	61.25	11	0	228	5	74
8	Lideta	9.18	6	83	140	0	69
9	Nifas silk-Lafto	68.30	10	137	68	8	115
10	Yeka	85.46	15	176	216	5	188
Total			**98**	**1,149**	**2,734**	**38**	**1,052**

4.2.2 Study period

The study was carried out from March 11-April 8/2019 G.C

4.3 Source Population and study population

4.3.1 Source Population

All health professionals who are working in Addis Ababa government health centers in Addis Ketema, AkakiKality, Arada, Bole, Gulele, kirkos, kolfe Keranio, Lideta, Nifas Silk-Lafto and Yeka sub cities of Addis Ababa, Ethiopia

4.3.2 Study population

All health professionals who are working emergency Unit of selected government health centers in Addis Ketema, Akaki-Kality, Arada, Bole, Gulele, kirkos, kolfe-Keranio, Lideta, Nifas Silk-Lafto And Yeka sub cities of Addis Ababa.

4.4 Sample Size Determination and sampling procedure

4.4.1 Sample size determination

There are about 98 health centers in Addis Ababa city under 10 sub cities. All health professionals who are working in the Emergency unit of selected 29 health centers (30 % of total Health centers in the city) were included in the study.

4.4.2 Sampling Procedure and Technique

In Addis Ababa there are ten sub cities and these sub cities consist of 98 Health Centers. Of all those sub cities with WHO recommendation 30% (29 Health Centers) were selected. Simple random sampling technique was used to select health centers by considering the list of Health Centers from each Sub-city as a sampling frame. Then the study units were allocated proportionally from each Sub-city.

- Proportional allocation formula used to select final population from each sub cities as follows:

$$n = \frac{n_i + n_f}{N}$$

Where:

N= Total Number of Health Centers in Addis Ababa city

n_i= Total number of Health Centers per sub city

n_f=Number of selected health centers for actual study (30% of total health center) = 29

i.e. $n_1+n_2+n_3+n_4+n_5 = n_6+n_7+n_8+n_9 = n_{10}$ (samples from each sub cities)

$$n_1(Addis\ Ketema) = \frac{10+29}{98} = 3 \qquad n_6(Kirkos) = \frac{8+29}{98} = 2$$

$$n_2(Akaki\ Kality) = \frac{9+29}{98} = 3 \qquad n_7(Kolfe - Keranio) = \frac{11+29}{98} = 3$$

$$n_3(Arada) = \frac{9+29}{98} = 3 \qquad n_8(Lideta) = \frac{6+29}{98} = 2$$

$$n_4(Bole) = \frac{10+29}{98} = 3 \qquad n_9(Nifas\ Silk - Lafto) = \frac{10+29}{98} = 3$$

$$n_5(Gullele) = \frac{10+29}{98} = 3 \qquad n_{10}(Yeka) = \frac{14+29}{98} = 4$$

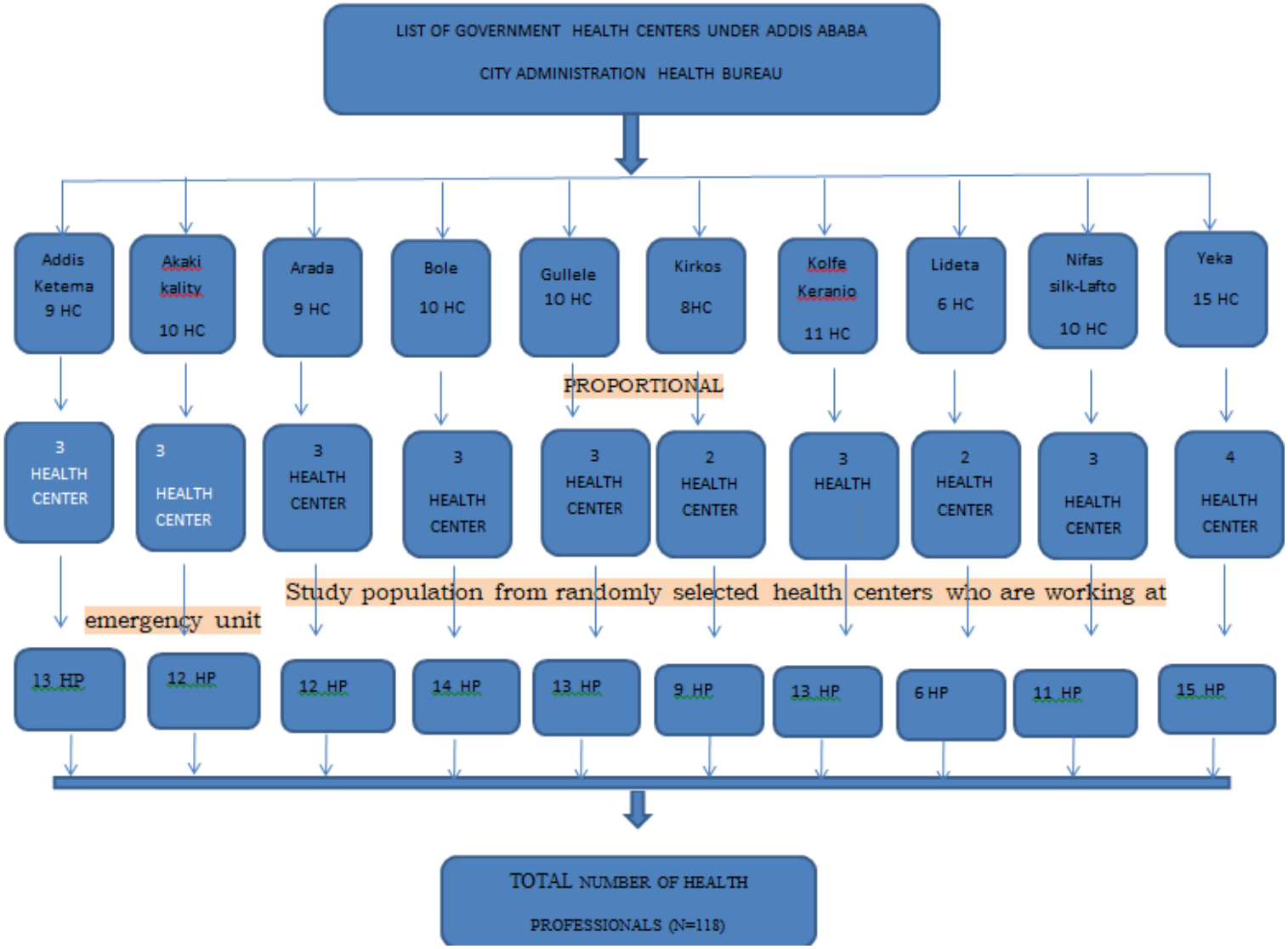

Figure 4.1: Schematic presentation of sampling procedure for assessing acute trauma care of health professionals working in emergency units of selected government health centers in Addis Ababa Ethiopia from March 11-April 8/2019

4.5 Eligibility criteria

4.5.1 Inclusion criteria

All health professionals who are working at emergency unit of selected government health centers from March 11/2019- April 8/2019

4.5.2 Exclusion criteria

- Health professionals who are not available during study period due to (annual leave, maternity leave, and sick leave)
- Health professionals who are working as free service and who are not permanently employed.
- Physicians

4.6 Study variables

4.6.1 Dependent variables:

- Knowledge
- practice

4.6.2 Independent variables:

- Age
- Sex
- Address
- Educational status
- Profession
- Service year
- Training received

4.6.3 Selection and training of research assistants

Two research assistants assisted in the collection of data, BSc Nurses were identified from government health centers which were not working on the selected health centers. The researcher explained the purpose of the study, the objectives and trained them on the use of data collecting tool for two days prior to the commencement of data collection.

4.6.4 Study Instrument

The self-administered questionnaire was written in English, and contained mainly closed ended questions. The questionnaire was divided in to three parts. The first part pertained to the demographic information of the health professionals in emergency unit of selected health center like age, sex, Profession, Level of education and Experience. The second part had questions related to knowledge and the third component is practice about how to handle traumatic victim and barriers not to providing best care. It contained total 29 multiple choice and descriptive questions. All eligible health professionals who gave informed consent were given the questionnaire to complete and necessary assistance were provided by researchers' assistants. The filled questionnaire was collected by research assistants and was handed over to the Researchers for data analysis.

4.6.5. Pre testing of study instrument

The questionnaires were pre-tested and reviewed to ascertain the suitability of the tool before the actual administration. Pre-testing was done by administering the questionnaire to 3 government health centers in Addis Ababa were selected randomly to represent 10% of the actual population recommended for pre testing the questionnaire to ensure validity. The findings were used to improve the questionnaire to ensure validity and reliability. This information did not form part of the study data. The questionnaire took an average of 20 minutes to complete.

4.6.6. Data Collection, Cleaning, Entry and Analysis

Data was collected by the principal investigator and two researcher assistants for 4 weeks from March 11-April 8, 2019. The self-administered questionnaires were given to only consenting eligible health professionals after full explanation of the purposes and benefits of the study. After completion, the questionnaires were collected by the principal researcher or by the researcher assistants. The questionnaire was verified for accuracy and completeness.

Completed questionnaires were imported into a computer using Epidata 4.4 and cleaned.SPSS version 20.0 was used for data analysis. The alpha level was set at 0.05 to determine statistical significance. Multiple logistic regression models were used to identify possible factors associated with health professionals' knowledge and practice related to trauma victim handling and

correlation between respondents' knowledge and practice score. For the evaluation of the study data, descriptive statistical methods (frequency, percentage, mean, and standard deviation) were used. The results were presented using tables and figures.Pearson Rank Correlation Coefficient was used to describe the strength and direction of the relationship among knowledge and practices.

4.6.7. Protection of Human Subjects

The participants were fully informed of the implications of the study and their rights to withdraw from the study explained in an information sheet attached to the questionnaire. The information sheet also gave details of the purposes of the study and expected benefits. The completion and return of the questionnaire by participants was part of the consent for inclusion in the study.

4.6.8. Participants

Diploma, college Degree and Master's degree level nurses as well as Health officers and Physicians of selected health centers who were working in emergency Unit were approached for the study. Each participating health Professional was required to sign a consent form before participating in the study.

4.6.9. Ethical consideration

Ethical clearance was obtained from department of Emergency Medicine, Addis Ababa University. Official letter of permission from the department were submitted to Addis Ababa health bureau and for selected government health centers in order to conduct the study .All the collected data were kept confidential and the names/or other personal information was not be notified in any report.

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CHAPTER FIVE

5. RESULT

5.1 Socio Demographic characteristics of the respondents

There were participants from 29 health centers, selected out of 10 sub cities in Addis Ababa. Two to five health professionals were assigned in emergency units of each health centers. The knowledge and practice questionnaire were administrated to a total of 117 health professionals working at emergency unit of selected health centers. One questionnaire was rejected for incomplete data. Total number of respondents was 115 (98.3%). From these, 61.9 % were Nurses and 35.6% were Health Officers working at emergency units of selected government health centers. There were 39.0 % males and 61.0 % females. Around fifty two percent were in the age group of 28–35 years, and 41.5% were in the age group 20-27 years. Majorities; 77(65.3 %) of health professionals had college degree. Majority 61.9% had more than 4 years' work experience.

Table 5.1:-Demographic characteristics of Study Participants for assessing acute trauma care among health professionals working in emergency units of selected government health centers in Addis Ababa, Ethiopia from March 11 to April 8, 2019

Demographic Characteristics	Category	Number (%)
Gender	Female Male	72(61.0) 46(39.0)
Age in years	20-27 28-35 36 and above	51(43.52) 61(51.7) 6(5.1)
Residence	Inside the sub-city Outside the sub-city	79(66.9) 39(66.9)
Levels of Academic qualification	Diploma Degree Masters	38(32.2) 77(65.3) 3(2.5)
Profession	Nurse Health Officer	73(61.9) 42(35.6)
Total work Experience	6 months-2yrs 2 years-4years 4 year and above	22(18.6) 23(19.5) 73(61.9)

As indicated in figure 5.1 below, about 52 (44.1%) of the total participant have an emergency unit experience with the range of 1 to 3 years of service; with the mean of 2.23 (SD±1.01) years.

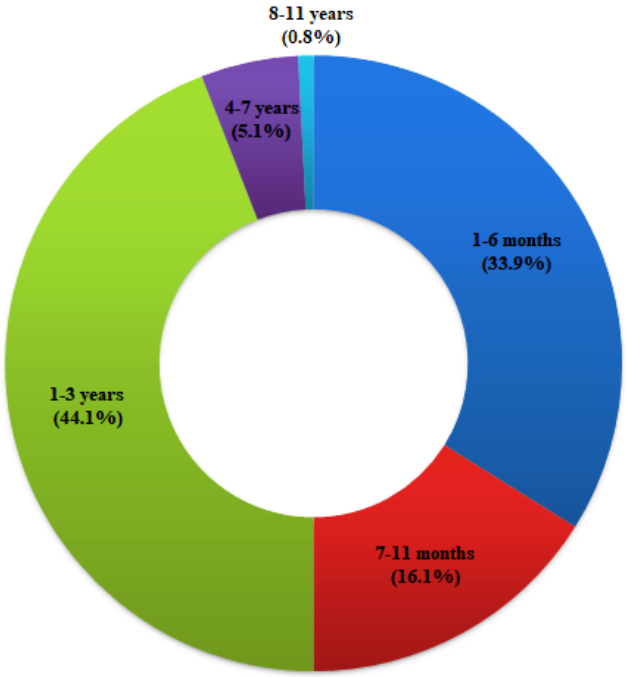

Figure 5.1: Service year in the emergency unit (given in percentage) for assessing acute trauma care among health professionals working in emergency units of selected government health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

About 76.3 % of the respondent had trauma related training once in their clinical career, and the other 23.7% did not get the chance to attend a trauma handling training.

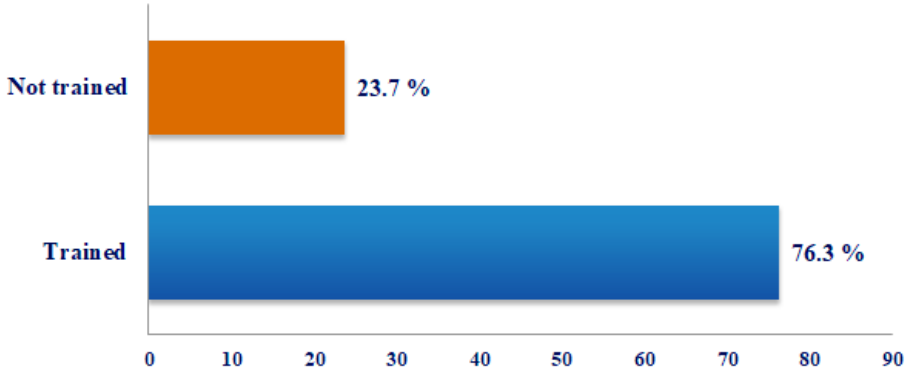

Figure 5.2: The percentage of trained and untrained health professionals for assessing acute trauma care among health professionals working in emergency units of selected government health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

5.2 Knowledge Results

From the total respondent (n=118) who participated in this study, only 23 (19.5%) of them scored greater than or equal to 75% (very good) on the knowledge score of acute trauma care. As it is presented in detail on table 5.2 below; around 39 (33%), of the participant scored less than 50%.

Table 5.2: result of knowledge in four categories for assessing acute trauma care among health professionals working in emergency units of selected government health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

Knowledge Result	Frequency (%)	Knowledge Level
Greater than or equal to 75% (Result ≥75)	23 (19.5%)	Very good
Between 75% to 50% (50% ≤ Result <75%)	56 (47.5%)	Good
Between 50 % to 25% (25% ≤ Result <50%)	37 (31.3%)	Poor
Less than 25% (Result < 25%)	2 (1.7%)	Very poor

The knowledge level of both trained and untrained health professionals measured using the same knowledge related questions as indicated in Figure 5.3. Close to twenty percent of the participants scored greater than or equal to 75%, 21 (23.3 %) of these high scored group are a trained professionals, the other 2 are untrained. A majority, 95 (80.5%), participant scored less than 75% for the knowledge related questions.

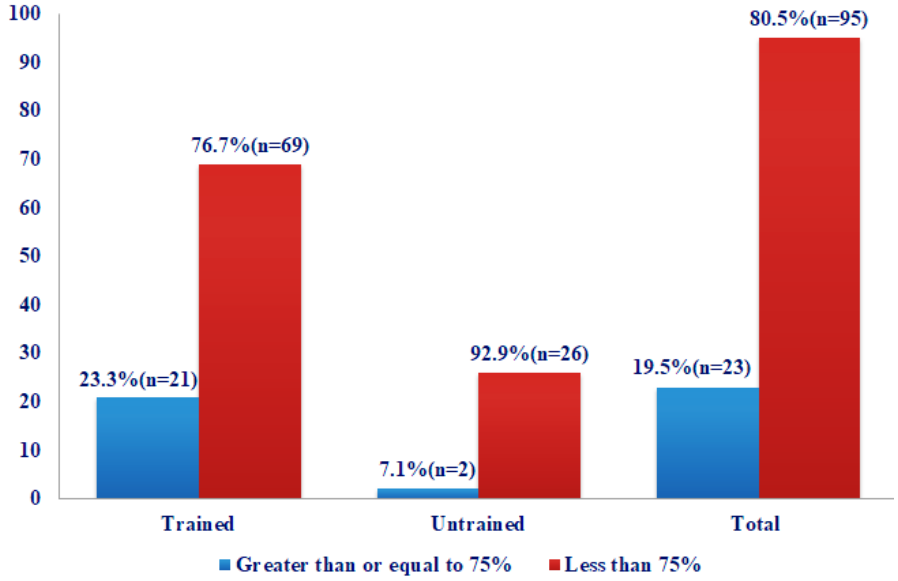

Figure 5.3: Knowledge level of the trained and untrained health professionals for assessing the trauma victim handling of health care professionals working in emergency units of selected health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

In this study, the maximum knowledge score out of 20 is 16 and the minimum score is 4. The mean knowledge score was 10.81 (SD = ±2.86). Although most of the participant scored less than 75%, from the total respondents, 89(67.0%) scored greater than 50%. The respondent show that the first sources of information about acute trauma care are as follows (figure 4): 19 (16.8%) of the participant got information from their co-workers, 55(46.2 %) from training, 37(31.1%) from formal education and the rest 2(1.7%) from other sources.

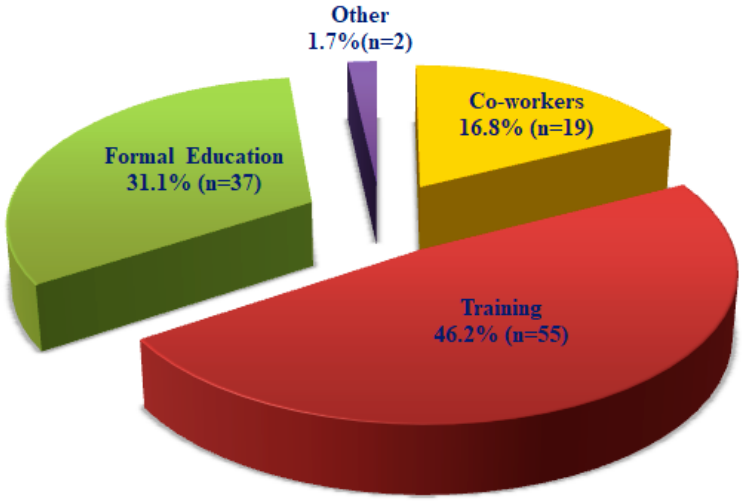

Figure.5. 4: Major Source of acute trauma care information for health professionals to assess trauma victim working in emergency units of selected health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

All 118 (100%) respondents understood that, the cervical spine should not be moved in traumatic situation while manipulating for airway opening and also they focus on loss replacement (administering intravenous fluid) rather than controlling ongoing bleeding (Table 5.3). Just over half, 74 (62.7%) of respondents correctly identified the entire traumatic victims body should be checked (examined) to rule out if there is any finding related to the traumatic event during primary survey (Table 5.3). GCS and/or AVPU were correctly identified by half respondents 59 (50%).

A majority, 114(96.6 %) participants didn't identify correctly as neck collar should be applied for any unconscious traumatic victim and 97(82.2%) participants knows that, all patients suspected for cervical spine injury require neck collar. Less than half of the respondent, 36 (30.5%) correctly answered that if they found traumatic victim in the middle of the road first they check the environment for safety prior starting resuscitation. But the other 82 (69.5%) are not

aware of scene safety rather some of them try to open the airway, others prefer performing chest compression and the rest focus on controlling external hemorrhage.

Table 5.3: Assessment of acute trauma care knowledge among health professionals working in emergency units of selected government health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

Knowledge Questions For (n=118)	Correctly answered (%)	Correctly not answered (%)
What is the most common cause of preventable post-traumatic death?	93 (78.8)	25 (21.2)
The most common cause of airway obstruction in unconscious patients is:	92 (78.0)	26 (22)
The primary reason a splint is applied to an open fractured bone is	9(7.6)	109 (92.4)
When you find traumatic victim in the middle of the road, what will be your first response?	36 (30.5)	82 (69.5)
Which position is safe for a patient after a traumatic event?	53 (44.9)	65 (55.1)
What does Golden Hour Mean?	71 (60.2)	47 (39.8)
If someone has mild bleeding from a wound, what can you do to stop?	101 (85.6)	17 (14.4)
In trauma resuscitation ABCDE is an abbreviation for:	**0**	**118 (100)**
Airway with cervical spine protection	0	118 (100)
Breathing	118 (100)	0
Circulation, Control Bleeding	0	118 (100)
Disability	59 (50)	59 (50)
Exposure	44 (37.3)	74 (62.7)
How do you Prevent hypothermia in traumatic patient?	**8 (6.8)**	**110 (93.2)**
Removal of Wet Clothing	44 (37.3)	74(62.7)
Use of Warm Blanket	86(72.9)	32(27.1)
Avoiding Unnecessary Exposure	44 (37.3)	74 (62.7)
Warming IV Fluids if we administering Much Fluids	25(21.2)	93 (78.8)
For whom do you Apply Neck collar?	**72(61.0)**	**46 (39.0)**
For a patients who have a traumatic head or neck injury	16(13.6)	102(86.4)
For a patient suspected for cervical spine injury	21(17.8)	97(82.2)
For any unconscious traumatic victim	4(3.4)	114(96.6)
All of the above	77(65.3)	41(34.7)

A correlation is made between the two profession sectors of health professionals (Nurse and Health officers) and their knowledge with regards to the ability to identify correct answer regarding acute trauma care revealed significant findings with $p<0.05$. The result indicates that Health officers who are working in an emergency unit scored higher than Nurses in their counterparts. They have a significantly better ability in responding correctly for knowledge questions than nurses (Table 5.4).

In the bivariate analysis; Gender, Total work experience, Emergency experience, Profession, and training related to acute trauma care has association with knowledge of health professional's related to acute trauma care (Table 5.4). However in multi variety analysis those who have work-experience for more than four years (AOR: .155, 95% CI: (.037, 0.653), p=.011) were significantly associated with knowledge of health professionals relation to trauma victim handling (Table 5.4).

Table 5.4: Factors affecting the knowledge of health professionals towards acute trauma care among health professionals of selected government health centers in Addis Ababa Ethiopia, 2019

Variables		G&A. K	VG. K	p-value	COR (95% CI)	AOR (95% CI)
Gender	Female	61	11	0.152	1.957 (0.780, 4.908)	
	Male	34	12		REF	
Profession	Nurse	64	12	0.176	0.528 (0.210, 1.331)*	
	Health Officer	31	11		REF	
Work Experience (years)	6 month- 2 years	19	3	0.157	0.351 (0.082, 1.495)*	
	2-4 years	15	8	0.775	0.185 (0.3780, 3.796)	
	4 years & above	61	12	0.012	0.163 (0.040, 0.667)*	0.155 (0.037, 0.653)**
Emergency room experience	1-6 months	35	5		REF	
	7-11 months	12	7	0.037	4.083 (1.089, 15.312)*	
	1-3 years	41	11	0.282	1.878 (0.595, 5.927)	
	4-7 years	6	0	0.999	0.000 (0.000)	
	8-11 years	1	0	1.000	0.000(0.000)	
Taken training on how to handle a traumatic victim	Untrained	23	2	0.099	3.600 (0.785, 16.504)*	
	Trained	70	21	1.000	REF	

***VG.K**: Very Good Knowledge;*
***G&A.K**. Good and others Knowledge (it includes poor and very poor)*
***REF**-reference*
***COR:** crude odds ratio; **AOR:** adjusted odds ratio; **CI:** confidence interval*
***** Factors associated with knowledge of health professionals on trauma victim handling at P value<0.05*
****** Factors significantly associated with knowledge of health professionals on trauma victim handling at P value<0.05*

5.3 Practice Result

The Practice level of health professionals in selected Addis Ababa government health center measured using practice related questions. From the total participant 16 (13.56%) scored greater than 75% of the questions and 12 (10.17%) of the participant scored less than 25%. The detail is indicated on table 5.5 below.

Table 5.5: The result of practice in four categories for assessing acute trauma care among health care professionals working in emergency units of selected government health centers in Addis Ababa Ethiopia, 2019

Practice Result	Frequency (%)	Practice Level
Greater than or equal to 75% (Result ≥75)	16 (13.56%)	Very Good
Between 75% to 50% (50% ≤ Result <75%)	52 (44.07%)	Good
Between 50 % to 25% (25% ≤ Result <50%)	38 (32.20%)	Poor
Less than 25% (Result < 25%)	12 (10.17%)	Very Poor

The practice assessment score is generalized by dividing the respondents in two groups i.e. trained and untrained. Through, as indicated in figure 5.5 below, from the total participant who were trained, 15 (16.7%) scored greater than or equal to 75% (Very Good). Majority of the trained, 75 (83.3%) of respondents scored less than 75% in practical assessment. Only one participant of the untrained respondent scored Very Good.

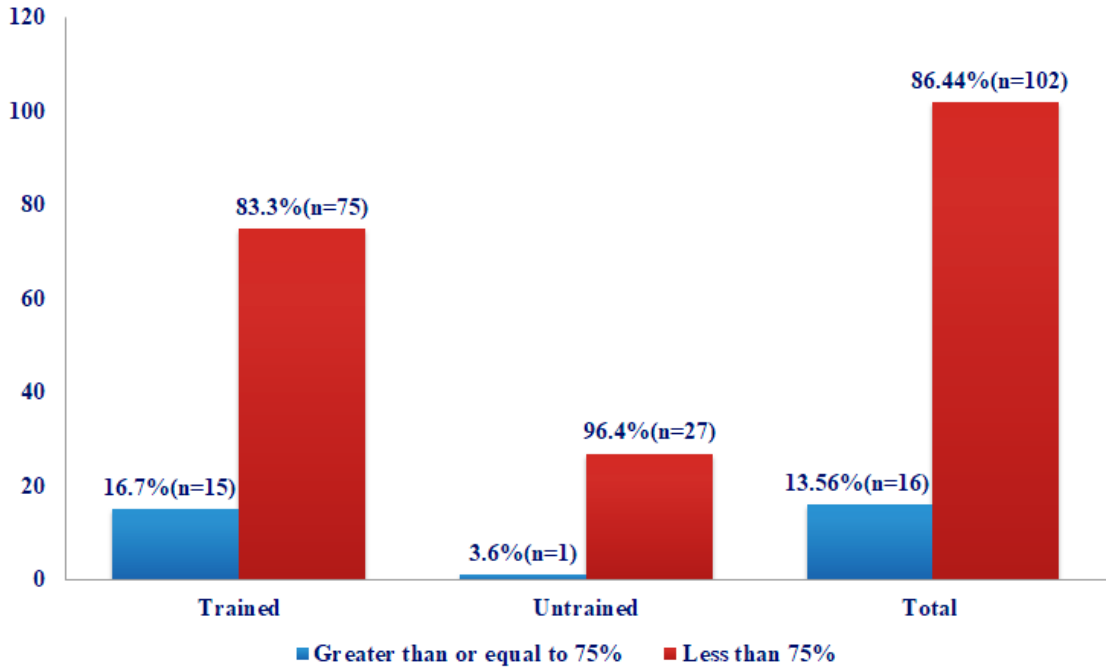

Figure 5.5: Practice level of the trained and untrained health professionals for assessing acute trauma care among health professionals working in emergency units of selected government health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

On average, the health professionals responded correctly to approximately 4 out of the 8 questions (mean = 3.65, SD = ±1.59). Their lowest score was 0 out of the 8 and the highest scorer responded correctly was 7 out of 8.

From the total participant, 55(46.6%) have an experience for applying a neck collar but 63(53.4%) of respondent did not apply neck collar even once throughout their clinical carrier. Similarly, the practice of applying splint to the traumatic victims studied. From all participants, 86 (72.9%) of the participants have an experience of applying Splint and the rest didn't.

As per the collected data, the major reasons for not applying both a neck collar and splint was unavailability of a patient who requires neck collar 32 (50.8%) and splint 11 (34.4%), the lack of knowledge for applying neck collar 13 (20.6%) and splint 10 (31.3%), lack of resource for neck collar 13 (20.6%) and splint 9 (28.1%) and Fear to apply neck collar 3 (4.8%) and splint 2 (6.3%); (Figure 5.6).

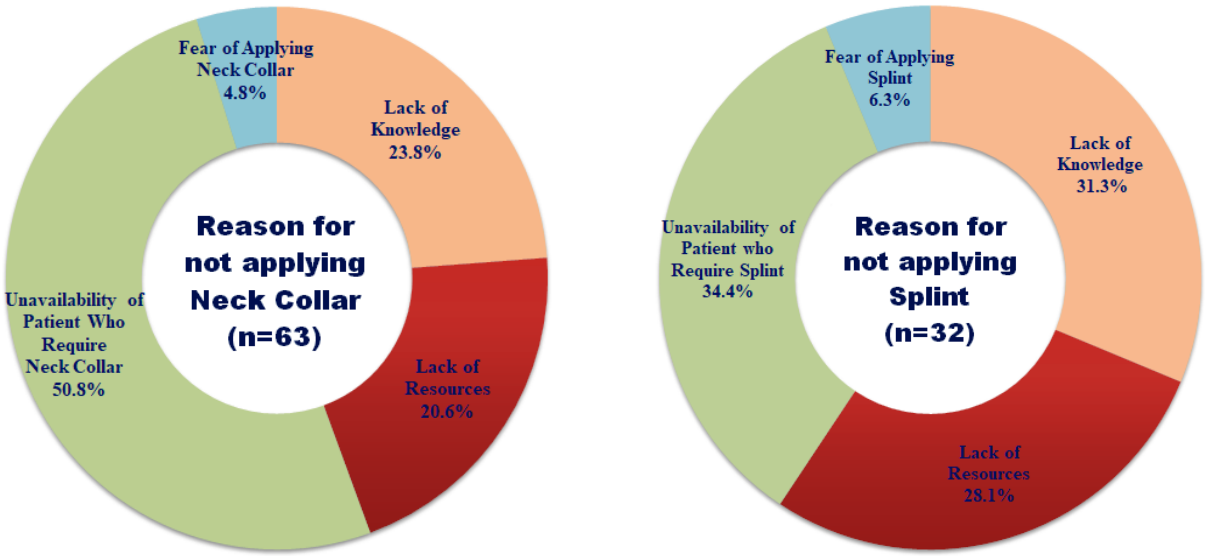

Figure 5.6: Reason given by respondent for not applying Neck Collar and Splint for assessing acute trauma care among health professionals working in emergency units of selected health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

About 7 out of 32 (21.9%) of the health professionals did not identified for which type of traumatic victim does neck collar should be used. In addition to this, from the respondents that raised lack of knowledge as a reason for not applying neck collar 11 (73.3 %) and splint 9(90.0

%); respectively are a trained(figure 5.7). Similarly, most of the respondents that showed the presence of knowledge gap as a reason have a service year of greater than 4 years (figure 5.8).

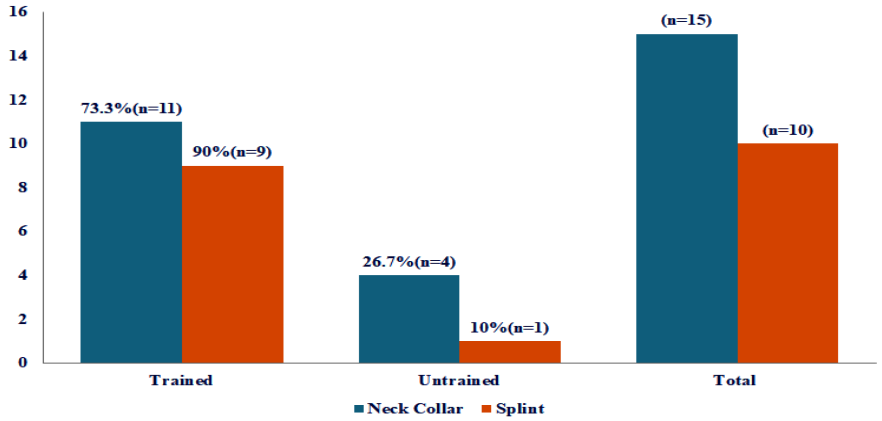

Figure 5.7: Percentage (frequency) of trained and untrained professionals who are responding the reason for not applying neck collar and splint due to the presence of knowledge gap for assessing acute trauma care among health professionals working in emergency units of selected health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019.

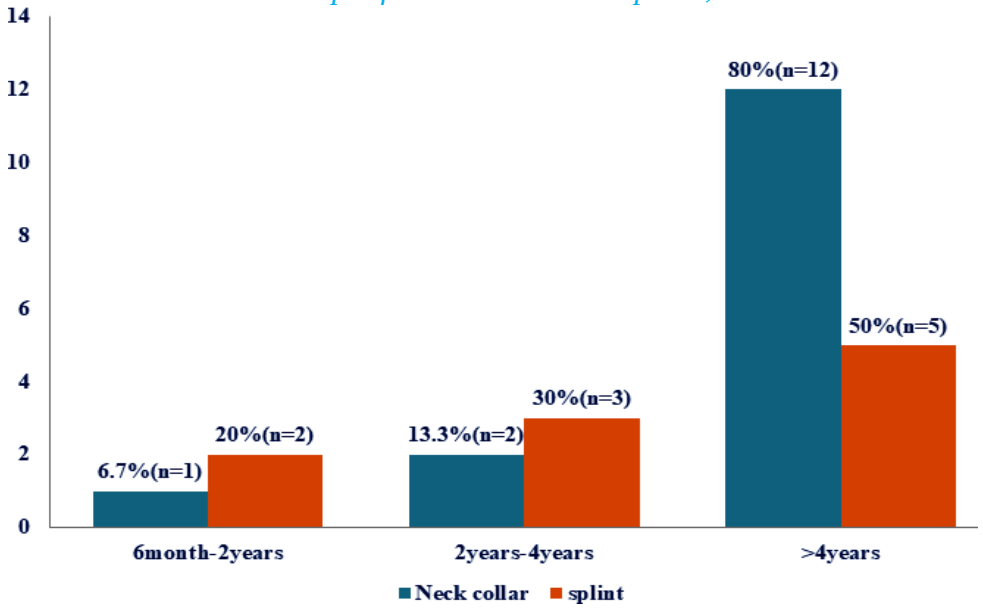

Figure 5.8: Percentage (frequency) of years of service who are responding the reason for applying neck collar and splint due to the presence of knowledge gap for assessing acute trauma care among health professionals working in emergency units of selected health centers in Addis Ababa Ethiopia from March 11 to April 8, 2019

A majority of respondent, 79.7 % (n=94) have a practice of examining the posterior part of traumatic victim simply by positioning the patient to lateral side but the rest 20.3% (n=24) of the respondent used Logroll. Only 28.0% (n=33) of the total respondent (n=118) used appropriate practice to control bleeding; (Table 5.6).

Table 5.6: Assessment of practice, on acute trauma care of health professionals working in selected government health centers in Addis Ababa Ethiopia , 2019

Practice Questions (n=118)	Correctly answered (%)	Correctly not answered (%)
What maneuver have you been used to open the airway in a trauma victim (patient)?	54 (45.8)	64 (54.2)
How do you stop sever on-going bleeding?	33 (28.0)	85 (72.0)
How do you transfer traumatic victim (patient)?	74 (62.2)	44 (37.3)
What method have you been used to evaluate back of traumatic victim?	24 (20.3)	94 (79.7)
	Yes (%)	**No (%)**
Have you practiced applying neck collar before?	55 (46.6)	63(53.4)
Have you Practiced Applying Splint Before?	86 (72.9)	32 (27.1)

There were statistically significant differences that health officers have better practice than nurses. It was also noted that slightly more participants in both profession who were living in the sub-city were the health center is located have good practice score than from those who are living outside of the sub city (Table 5.7).

Table 5.7: Factors affecting the practice of health care professionals towards trauma victim handling among health professionals of selected government health centers in Addis Ababa Ethiopia, 2019

Variables		G&A.P	VG.P	p-value	COR (95% CI)	AOR (95% CI)
Residence	Inside the sub city	51	28	0.102	2.127(0.862, 5.252)*	
	Outside the sub city	31	8	0.001	0.258	
Profession	Nurse	55	18		REF	
	Health Officer	26	16	0.185	1.723 (0.770,3.855)*	
Length of Experience (years)	6 month- 2 years	16	6	0.109	3.378 (0.161, 1.754)	
	2-4 years	16	7	0.752	1.246 (0.195, 1.968)	
	4 years & above	33	11		REF	
Taken training on how to handle a traumatic victim	Not trained	24	3		REF	
	trained	58	33	0.020	4.552 (1.273, 16.274)*	4.552(1.273, 16.274)**

VG.P. *Very Good Practice;*
G&A.P. *Good and others Practice level (it includes poor and very poor)*
REF*-reference*
COR: *crude odds ratio;* ***AOR:*** *adjusted odds ratio;* ***CI:*** *confidence interval*
** Factors associated with Practice of health professionals on trauma victim handling at P value<0.05*
*** Factors significantly associated with Practice of health professionals on trauma victim handling at P value<0.05*

CHAPTER SIX

6. DISCUSSION

The first hour of management (golden hour) of any traumatic victim might be the determining factor for his/her survivals. Due to the time-sensitive nature of traumatic injuries many patients are first treated at the nearest health centers to ensure stabilization before transferring to a major trauma centers. The first contact most patients have in health center is with different health professional's including nurses, health officers and Doctors. In order to achieve the best possible outcomes in decreasing the risk of long-term morbidity or mortality, the knowledge and practice of trauma victim handling by all health professionals becomes important.

After happening of traumatic injuries, health care professionals at emergency unit of health centers are the one who are responsible to handle the case. But the results of this study revealed that, the health care professionals had a lack of knowledge and practice towards trauma victim handling. Even if, majority had a B.Sc. degree, had a total work experience of four years and above, had an emergency experience of between one and three years and also they attend a traumatic handling training; they scored poor and very poor results both in knowledge 39(33%), and also in practice 50(42.37%).

6.1.Magnitude of Knowledge score on assessment of acute trauma care

Results of the current study revealed that only 19.5% (n=23) scored highest score, greater than or equal to 75 % (very good knowledge level). Overall, the mean knowledge score of respondent in related to acute trauma care was 55 %. This shows the presence of a acute trauma care knowledge gap in Addis Ababa health centers. A related study done by Mengistu Mekonnen et al.[33] On the knowledge and practice of nurses basic life support in Amhara region referral hospitals showed the presence of this gap, the mean BLS knowledge score was 41.7%. But A study done by Suryanto et.al [21] in related to nurses pre-hospital care knowledge in Malang Indonesia, the mean nurses knowledge score was 70.1%. They had much better knowledge than nurses that participate on this current study.

This result is an alarming signal for all stakeholders, because only one fifth of the respondents have the required knowledge level (very good knowledge) to handle a traumatic victim. That

means, majority of the health professionals are trying to handling traumatic victims wrongly; almost they handle them similar to non-traumatic patients.

From the total trained participants which covers 76.3% (n=90) of the total respondent (n=118), only 23.3% (n=21) participant scored “Very good” on knowledge question about how to handle a traumatic victim, the rest 76.7% (n=69) scored less than “Very good”. These results reveal that, the availability of the knowledge gap is not only within the untrained professional but also with within the trained ones with high percentage. The possible reason might be due to the unavailability of a continued refresher training in related to acute trauma care, as it is showed by Terzi et al. [18]. In addition to this refresher training, an initial training for the health care professional before assigning them to an emergency unit must be considered, because most of the untrained professionals, 92.9% (n=26) of n=28, scored below very good.

The median years of experience was 3 years and health professionals work experience categorized into three groups of 6 months-2years, >2 years-4years and above 4 years of experience. The majority of those who had taken training before in both groups were able to respond questions correctly and this may be attributed to prior training .Those who are on clinical experience for more than 4 years are 84.5% less likely to have good knowledge than those who were in service for less than 4 year. The possible reason might be, other than lack of refreshment training indicated above, because they were far from academic arena (graduated before long time compared with new graduates) and might be due to modification of formal education curriculum. Most universities revise their curriculum in every five years, hence, if they add some trauma management related courses; variation of knowledge level might happen.

6.2.Magnitude of Practice score on assessment of acute trauma care

The practice level of health care professionals with higher service years was expected to be higher. This study revealed also that, the one who were working for more than four years had a higher mean score of practice than those who have less work experience. Although majority of the health care professionals had work experience of more than four years, only 1/8 of the total participant had the required practice level (very good practice). The mean practice level of the health care professionals of this study was 45.6%. This result is much less than the one generated by Suryanto et.al [21] for pre-hospital care nurses, 75.4%. This result shows clearly the presence of a huge gap on traumatic victim handling practice.

The result of this study shows that having training had a significant influence on practice score of acute trauma care similar to the knowledge case. But even from the trained participant, 57(63.3%) scored below the required practice level (very good practice). Not only this, majority of trained respondent showed the presence of knowledge gap for applying neck collar and splint.

Those who were trained are 4.6 times more likely to have good practice than those who were not. The possible reason might be, refreshment training updated health care professionals previous knowledge and become a reason to introduce newly emerging sciences regarding how they should manage traumatic victim.

On the other side, even if, more than half of the respondent, that have a limitation for applying a neck collar and splint, indicated unavailability of patient that needs a neck collar and splint as their main reasons, the majority of them did not know clearly for which patient these two medical equipment's would be used. This result indicates the severity of practice gap within the health care professionals at Addis Ababa health centers. Likewise the respondent understood wrongly about the devises used for applying of neck collar and splint; they expect only a standard devise from market than using different available items around them in replacement of neck collar and splint. That is why, 13(20.6%) for neck collar and 9 (28.1%) for splint respondent claim the unavailability of resource as a main reason.

The practice gap within the health care professionals in Addis Ababa government health centers would not only for the case neck collar and splint only but also in related to patient maneuvering, controlling on going bleeding and back evaluation. Therefore, it is very difficult to say proper acute trauma care practice is available in the health centers.

CHAPTER SEVEN
7. CONCLUSION AND RECOMMENDATION

7.1 Conclusion

In conclusion, emergency unit health professionals in selected government health centers demonstrated overall unsatisfactory levels of knowledge and practice were identified. It is clear that ongoing education on how to handle traumatic victim must be periodically under taken to enhance and update health professionals' knowledge about current and emerging acute trauma care practice. The result suggests that opportunities to intervene with acute trauma care may be lost due to lack of specific knowledge.

7.2 Recommendation

This research revealed that knowledge and practice of health professionals about acute trauma care was not adequate. Even if health professionals got training related to how they should deliver acute trauma care, it didn't bring significant change. Thus, based on the findings the following is recommended:

To Ministry of Health

- Trauma is burning issue in our country, especially in the City: acute trauma care should be included in formal education
- Making the training periodical or giving some refreshment courses related to acute trauma care
- The study re-emphasizes regular and periodic sensitization and orientation of health professionals on acute trauma care would bring deep seated improvement.
- Assessing why there is a gap of knowledge and practice of health professionals: problem with content of training manual, duration of training, method of training or others.

To Health Center Directors

- Special and comprehensive training should be given as measurements for preventing further complication to the traumatic victim.
- Showing some homemade adjuvants parallel with commercially available one like: splint, neck collar

- Giving training to all emergency unit health professionals before they become member of the unit
- Facilitating experience sharing between staffs with whom who have better awareness on trauma victim handling at same health center
- Making available Standard operating manuals (SOP) and other manuals on acute trauma care in emergency unit for professionals to let them know the standard one.
- Responsible bodies in the health center should create a linkage with Ministry of health and/or with Addis Ababa city administration health bureau to improve health professionals' knowledge and practice towards acute trauma care.

To Health Professionals

- To raise their knowledge regarding acute trauma care, they should try to read Manuals given during training or prepared by the institution
- Using their free time us recap period with staffs who recently come from training to refresh

To Further Researchers

- Further study should be done by using this research as an asset

7.3 Limitations

While the findings of the study offer a unique perspective on the knowledge and practice of emergency unit health professionals' on acute trauma care, the finding should be considered in context of some limitation. Firstly, the study was conducted in 29(30%) of health centers because those 98 health center geographical allocated over ten sub-cities. Although every effort was made to determine the number of health professionals with health centers who are working in emergency units; in the Free State before the study was initiated, this information was not available. For this reason the population size was unknown and as a result a representative sample size of professionals could not be determined. In an effort to overcome this limitation and improve representation, the researchers included all health professionals working in emergency units of selected health center and 98 government health centers found in the city used for sample size determination

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ANNEXES

Annex I: - List of selected government Health centers in each sub-city

1. Addis Ketema Sub-City
   - Koas-Meda Health center
   - Millenium Health center
   - Addis-Ketema Health center
2. Akaki Kality Sub-City
   - Kality Health center
   - Saris Health center
   - Serti Health center
3. Arada Sub-City
   - Janmeda Health center
   - Arada Health center
   - Kebena Health center
4. Bole Sub-City
   - Gorro Health center
   - Dill-frie Health center
   - Woreda 17 Health center
5. Gulele Sub-City
   - Entoto-Fanna Health center
   - Mayichew Health center
   - Addisu-Gebeya Health center
6. Kirkos Sub-City
   - Hiwot-Amba Health center
   - Kazanchis Health center
7. Lideta Sub-City
   - Lideta Health center
8. Kolfe Keranio Sub-City
   - Lomi-Meda Health center
   - woreda 11 Health center
   - Kolfe Health center
9. Nifas Silk Lafto Sub-City
   - woreda 05 Health center
   - Woreda 06 Health center
   - Woreda 12 Health center
10. Yeka Sub-City
    - Entoto Number1 Health center
    - Entoto Number 2 Health center
    - Korea Veteran Health center
    - Woreda 12 Health center

Annex II: Information sheet

Dear Participant:

This Study Is Prepared to Collect Data on assessment of knowledge and practice towards trauma victim handling among health professionals at selected government health centers in Addis Ababa City.

The study is being conducted by Rekik Eshetu Addis Ababa University, Department of Emergency Medicine, in Postgraduate Program. The objective of this study is to assess knowledge and practice of health professionals on trauma victim handling at selected government health centers in Addis Ababa, Ethiopia.. The assessment is made for the partial fulfillment of Master's Degree in Emergency Medicine and critical care nursing. The results of the study will be used as base line information to design appropriate intervention strategies to increase Health professionals knowledge and practice on trauma victim handling. The questionnaire contains closed ended questions and will be provided in self-administered form. You are therefore kindly requested to provide genuine answers to the questions. The information you provide is confidential and is used only for the purpose of this study. If you have any question, don't hesitate to ask the data collector. Your cooperation and participation until the completion of the questionnaire is very necessary for the successful completion of the study.

If you have questions regarding this study or would like to be informed of the results after its completion, please feel free to contact the principal investigator through the following address:

Rekik Eshetu

Phone number:-+251-913-08 42 40

E-mail:- rekikzewde@gmail.com

Annex III: Consent form

In signing this document, I am giving my consent to participate in the study entitled "Assessment of knowledge and practice on trauma victim handling among health professionals at emergency unit of selected government health centers in Addis Ababa, Ethiopia"

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

I understood that participation in this study does not involve risks. I understood that Rekik Eshetu is the contact person if I have questions about the study or about my rights as a study participant.

Am therefore ask your genuine willingness. However, you have the right to refuse if you are not voluntary to participate by making thick mark in -No' in the box below.

Do you agree to Participate Yes ☐ No ☐

If yes proceed to the next page

Thank you in advance for your cooperation

Annex IV: Questioner

QUESTIONER

Sub City			
Name of health center			
Respondent Number			

PART I .SOCIO DEMOGRAPHIC CHARACTERISTICS								
1.	Gender							
	a.	Female	b.	Male				
2.	Age (year) _____							
3.	Marital status							
	a.	Single	b.	Married	c.	Divorced/Separated	d.	Widowed
4.	Residence							
	a.	Inside the sub cities			b.	Outside the sub cities		
5.	Level of education							
	a.	Diploma	b.	Degree	c.	Masters	d.	other (specify) _____
6.	Profession							
	a.	Nurse	b.	Health Officer	c.	Physician		
6.	Total Work Experience							
	a.	6 month- 2 years	b.	2-4 years	c.	4-6years	d.	other (specify) _____
7.	For how long have you been at Emergency unit? _____							
8.	Did you taken training which is related to how to manage acute trauma victim before?							
	a.	Yes			b.	No		