ASSESSMENT OF TRAFFIC POLICES' KNOWLEDGE AND SKILLS OF TRAUMA CARE RENDERED TO INJURED CAR ACCIDENT VICTIMS IN DAR-ES-SALAAM

TANZANIA

Matiya Bertha Aloyce, BScN

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By

Matiya Bertha Aloyce

A Dissertation Submitted in Partial Fulfillment of the Requirement for the Degree of Master of Science Nursing (Critical Care and Trauma) of Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled ***Assessment of Traffic Polices' Knowledge and Skills of Trauma Care Rendered to Injured Car Accident Victims in Dar es Salaam, Tanzania,*** in partial fulfillment of the requirements for the degree of Master of Science in Nursing (Critical care and Trauma) of Muhimbili University of Health and Allied Sciences.

Leshabari

Dr S. Leshabari

(Supervisor)

Date 22nd November 2010

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I, **Bertha Aloyce Matiya,** declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature..... Date.....21st NOVEMBER, 2010

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DEDICATION

This work is dedicated to my beloved late husband John S.Mahimbo, my late parents, Mr. & Mrs. Aloyce Matiya, Dr Eric Van den Bergh and my children Banneth, Hellen and Linah for their moral support.

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ABSTRACT

Background: Injury is one of the leading causes of mortality and morbidity leading to premature death and disability worldwide. In Sub-Saharan African countries, the estimates for road traffic deaths for the year 2000 ranged between 68,500 and 82,200, whereby Tanzania was one of the countries mentioned to have experienced high numbers of road deaths. Pre-hospital emergency care is the initial corner stone in the management of the victims of road accidents because assessment and management commence at the scene of injury before being transported to the facility; and good communication with the receiving hospital has shown improvement in the survival of trauma victims. In Tanzania most of the trauma victims of motor traffic accident are being handled by Traffic Police, however, very little is known about the competencies of traffic police on pre-hospital trauma care as first responders.

Objective: The study was guided by three objectives, 1.To determine the knowledge of traffic police on pre-hospital trauma care in Dar es Salaam region; 2. To describe the skills of traffic police on pre-hospital trauma care in Dar es Salaam region; 3.To explore participants opinion on what could improve their skills on pre-hospital trauma care to injured victims in relation to our setting (Tanzania).

Methodology: A cross-sectional study design was used to assess traffic police knowledge and skill on pre-hospital trauma care to injured patients before transporting them to the health facilities for further management. Knowledge was assessed using open and closed ended questionnaire while practice was assessed using simulation scenarios with guide questions adopted from a study done by Morgan and colleagues in 2004. A descriptive statistical data analysis such as percentage and frequency were used for easy interpretation of findings which were analyzed using window SPSS version 13.0.

Results: The mean score knowledge of the study participants on the indicative signs of trauma victims care (Airway, Breathing, blood Circulation) was 1.59. Eighty participants (41%) had good knowledge while 116 (59%) had fair knowledge on identification of severely injured patient. Sixty nine percent (=136) of the participants had good knowledge on quick and immediate assessment of injured victims. Seventy three percent (=143) of the participants

could not identify shocked victims. Only 47% of the participants mentioned safety of the scene as a first step in case of accident. Seventy two percent (=142) of the participants were able to identify care of airway as a first intervention in care of unconscious patient. Sixty percent (=110) of the participants were not able to identify victim with cardiac arrest. Thirty nine percent (=76) of the participants were not able to care for victims with neck and back injuries. Forty seven percent (=88) of the participants reported to use unequipped police patrol car as means of transporting the victims to health facilities while 55% reported to use any available public transport. Only 39% (=76) of the participants reported to have working tools for assisting in caring of trauma victims.

Conclusion and Recommendation:

Traffic police who participated in this study demonstrated considerable knowledge and skill gaps on assessment and care of trauma victims during pre-hospital care, especially on identification and care of shocked victims, severe bleeding and victims with neck and/or back injuries. This has serious implication in increasing preventable mortalities and disabilities caused by accidents and trauma. This study argued that, the condition under which traffic police are expected to save lives of injured victims needs careful consideration, and suggested an urgent need for pre- and in-service training and support structure necessary to promote required knowledge and skills of traffic police. However, this should go hand in hand with provision of working tools for assessment and care of trauma victims at the scene, including easy to read/follow guidelines that will assist the traffic police to perform his/her immediate life saving activities thoroughly and effectively.

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ABBREVIATION

LMICs	Low and Middle Income Countries
WHO	World Health Organization
EMS	Emergency Medical Service
WHA	World Health Assembly
BLS	Basic Life Support
EMD	Emergency Department
MOI	Muhimbili Orthopaedic Institute
IV	Intravenous
MUHAS	Muhimbili University of Health and Allied Sciences
PHEC	Pre Hospital Emergency Care
TP	Traffic Police
MoHSW	Ministry of Health and Social Welfare
MoHA	Ministry of Home Affairs
PHTC	Pre-hospital Trauma Care
CP	Constable Police
SGT	Sergeant Police
CPL	Coplo Police
S/SGT	Station Sergeant Police
IGP	Inspector General of Police
RTO	Regional Traffic Police
URT	United Republic of Tanzania
Sqkm	Square kilometer

CHAPTER ONE

10. INTRODUCTION

1.1 Background:

Injury has become a leading cause of death and disability globally. The highly affected age groups are older children between 5-14 years and adolescents and younger adults between 15-44 years. Many people who are injured are left with temporary or lifelong disabilities. The burden is prominent in low and middle income countries (LMICs), whereby 90% of all deaths are from developing countries. However, figures vary according to region. Worldwide, 1.2 million people die annually and about 50 million are seriously injured due to road accidents [1-4].

The trauma assessment is the initial systematic approach and management of seriously injured patients; it is a challenging practice requiring speed and accuracy. However achieving proper Pre-hospital Emergency Care (PHEC) to reduce the mortality, morbidity and disability associated with trauma injuries is not an easy task. Some of factors that seem to affect the quality of a country's PHEC is resources (such as; lack of trained paramedic staff) and availability of infra structure [5,6].

A study conducted by Mock and colleagues, compared the PHEC in three countries with different economical levels found that case-fatality rate scores were 35% in high-income (United States of America), 55% in middle-income (Mexico) and 63% in low-income countries. These findings suggested that case-fatality rate scores increased inversely with the economic status of the country [6,7].

In Sub-Saharan African countries for the year 2000, the estimated road traffic deaths ranged between 68,500 and 82,200, whereby South Africa and Nigeria, accounted for most of the reported deaths. Ethiopia, Kenya, Uganda, Tanzania and Ghana were the other countries that experienced high numbers of road deaths [1].

According to Tanzania National Council of Road Traffic Accidents, in the study done in Tanzania (Kibaha), Kibaha was the leading District in road traffic accidents. In 1995/2000, there were 64 accidents and 2001/2005 there was 71 road traffic accidents, 96% of which occurred along the Dar es Salaam to Morogoro road [8].

In July 2007, the emergency department of Muhimbili Orthopaedic Institute (MOI) attended 9634 trauma patients. The main cause of the trauma cases was motor accidents which made 70% out of the 9634 cases. There was an increase in the number of accidents as compared to 8905 trauma cases that were attended in July 2005/06, whereby 65% of the injuries were due to motor accidents [9].

According to a research done on the causes of accidents in Dar es Salaam on Morogoro highway, between 2002 and 2006 there were over 2,600 accidents each year, causing over 150 deaths annually due to road traffic accidents (35%) and 20% of all deaths were due to road accidents countrywide [10].

These misperception on improvements in trauma care to be expensive and impractical in LMICs, than other Disease Control Projects is opposed by the studies done. Several studies have shown that, trauma prevention and care was among the most cost-effective in the health-care settings. Trauma care can be done using strengthening of pre hospital trauma care through training of community-based, paramedics and village lay-first responders and use of community ambulances. These interventions are considered extremely cost-effective [11].

The goal of trauma patient care is to prevent early trauma mortality due to failure of oxygenation of the vital organs and/or central nervous system injury or both using a standardized protocol as highlighted by WHO and WHA Resolution 60:22. Good teaching and application of these protocols is held to be an important factor in improving the survival of trauma victims worldwide. Assessment and management begin out of hospital at the scene of injury and good communication with the receiving hospital is important. The theories on pre

hospital care of trauma victims, "stay and play" theory which believe that, "time in the field can be well spent stabilizing the patients' physiological status is not applicable to our setting and "scoop and run" theory, which believe that "only life threatening issues should be addressed in the field," is the commonly in use in our setting due to unavailability of fixed Emergency Medical Service (EMS) (Report from RTOs Dar es salaam) [12-19].

In Tanzania most of traumas patients are being handled by police, especially Traffic Police, but there is no documentation of the knowledge and skills in relation to pre-hospital trauma care. The assessment of knowledge and skills of this study was guided by modified questions using WHO protocols of 2004/05 on pre-hospital trauma care. Due to lack of fixed EMS and availability of life saving resources (human and non-human resources), to our setting (Tanzania-Dar es salaam) the questions were modified accordingly to suit the study [20-24].

1.2 Problem statement:

Injury is one of the most leading causes of mortality and morbidity leading to avoidable deaths and disability worldwide, whereby 90% of all deaths are from developing countries. However, figures vary according to region. Worldwide, 1.2 million people die annually and about 50 million are seriously injured on road accidents. All these need initial assessment, fast and accurate life saving of the injured person on the scene before being taken to hospital or trauma centre. In most countries the police, experienced medical people, paramedics or members of the community have done it [1,2,25].

The standard pre-hospital care to trauma victims is to reduce number of mortality and life saving achievement. According to WHO guidelines of 2004/2005, the pre-hospital trauma care is to stabilize the patient, identify life threatening conditions in order of risks and initiate supportive treatment, organize definitive treatments or organize transfer for definitive treatment, co-ordination and communication with the receiving hospital for them to be alerted and mobilized. In addition, airway to be maintained, cervical spine and spinal cord protection, control of external bleeding and shock prevention is vital. Victim kept immobilized with

minimum time at the scene. Special account of children, pregnant women and the elderly care should be taken to save their life [26-29].

In many countries including Tanzania, few victims receive treatment at the scene and fewer are transported to the hospital in an ambulance and/or some of the commercial vehicles. A large proportion of trauma patients in developing countries including Tanzania, do not have access to formal EMS. Relatives, untrained bystanders, taxi drivers, truck drivers, or traffic police usually provide transport, as first responders. As a result, many victims needlessly die at the scene or during the first few minutes to hours following severe injury and bleeding [20-25].

Many fatal injuries may be prevented or their severity reduced by adequate pre hospital trauma care. Without pre hospital trauma care, many people who might otherwise survive their injuries may die at the scene or on the way to the hospital. Most deaths in the first hours after injury are the result of airway compromise, respiratory failure or uncontrolled hemorrhage. All these conditions can be readily treated and deaths can be postponed using basic first aid measures (ABC) [20-25].

Like in many other countries, traffic police handles most of trauma victims in the urban areas in Tanzania. A study done by Astrom in Tanzania on first-lay responders which did not include traffic police on Pre-hospital Trauma Care identified lack of knowledge and skills on basic life support to caregivers leading to irreversible condition or death. However, there is no documentation of the study that has assessed the knowledge and skills of traffic police on pre-hospital trauma care though they are central caregivers for most accidents [30].

The trauma patient has a big chance of survival if definitive care is initiated immediately and within a few minutes to an hour at the scene and continued throughout the health care. Road traffic injuries are the leading cause of morbidity and mortality among other injuries in Tanzania [31,32].

According to a study done in Kibaha District, there were 855 injuries and 29% deaths. A study done along Morogoro road in Dar es Salaam showed that over 2600 people had road traffic accidents and deaths over 150 (6%) [10,33].

At the Emergency Medical Department (EMD) medical records of Muhimbili Orthopaedic Institute (MOI), there is an indication that, motor accident trauma is a major cause of admissions to the Institute. In the year, 2005/06 MOI reported 8905 trauma injuries, of which 65% were due to motor accidents. In the following year 2007/08, 9634 trauma injured patients attended EMD at MOI, among these 70% were due to trauma caused by motor accidents [9].

In Tanzania, majority of the trauma victims of car accidents are being handled by traffic police as first responders. Traffic police have power to manipulate people around and organize transport for victims. According to verbal explanation from traffic police officers, there was no evidence on road traffic accident versus traffic police ratio [34].

These findings clearly indicate that there are substantial numbers of traumas in Dar es Salaam that require proper PHTC in order to minimize its associated complications and mortality that happen due to delay at the scene. Many associated complications and deaths among traumatized patients can be prevented if suitable PHTC is provided within the first few minutes to an hour of injury (golden hour of injury) [20-25].

The researcher was therefore obliged to inquire more on; what do traffic police know about handling of trauma victims at the scene? How do they apply their knowledge and skills to save life and minimize disabilities to trauma as first responders and who have power to organize people at the scene. Lastly, the researcher wanted to explore participants' opinions on the improvement of pre-hospital trauma care.

1.3 Significant of the study

The study explored knowledge and skills of traffic police on pre-hospital care to trauma patients. The data obtained in this study, is expected to be used by Police Commissioners to plan for the improvement of knowledge and quality care of trauma and accident victims prior to be transferred to health care facilities or trauma centre.

In addition, the Health Authorities in Dar es Salaam, and possibly the national level will utilize the findings of this study for planning health care delivery to trauma victims. The recommendations given will be beneficial to the public at large on minimizing the number of disabilities and mortalities caused by accidents and trauma. Also gathered information will be utilized as baseline data in future related researches in this area.

1.4 Objectives:

1.4.1 Broad objective

The general objective in this study was to assess the knowledge and skills of traffic police who deal with trauma victims at the scene during motor accidents in Dar es Salaam.

1.4.2 Specific objectives

1. To determine the knowledge of traffic police on care of trauma victims during pre-hospital trauma care in Dar es Salaam.
2. To describe the skills of traffic police on the assessment of trauma victims during pre-hospital trauma care in Dar es Salaam.
3. To explore participants opinion on what could improve their skills on pre-hospital trauma care to injured victims.

1.5 Operational definition of terms:

Pre hospital care -is the care given to trauma victims at the scene, before and during transporting victims to health facility, and just before victims are received at the health facility with the purpose of stabilizing patients before definitive care is given.

Trauma - Is an injury to the body that occurs when a physical force contacts the body which can be blunt or penetrating. Blunt traumas are motor vehicle collisions, falls, and assaults with a blunt object and penetrating trauma include metal penetration wounds. Exposure to these forces can cause soft tissue injuries, fractures, bleeding, and tearing of vital organs and blood vessels, all of which can result in severe disability and death.

Injury –Is unintentional damage resulting from acute exposure to mechanical energy leading to trauma.

Knowledge –Is to understand the steps of pre-hospital trauma care and identification of client with problem in airway, breathing and circulation (ABCs).

Skills – Application of knowledge or systematic exercise for instruction or discipline. Is an application of trauma knowledge during pre-hospital trauma care to injured victims with severe bleeding, bone fracture, who need care of spinal cord and/or neck injury, or shocked victims.

Golden hour- Care given to injured victim within 5 minutes of injury to an hour or first two hours according to severity of injury following physical trauma being sustained by a casualty.

Traffic police- A person performing a variety of duties in the enforcement of laws and the prevention of crimes or control traffic flow and enforce state and local traffic regulations.

Scenario- Setting or situation used to assess the impact or skills of traffic police on the care of trauma victims.

Simulation scenarios – Is an imitation of setting or situation which is used when there is no interactive human involvement or trauma victim. Therefore, the setting or situation unfolds the using rule based decisions that control the interactions between simulated actors. Simulation

scenarios allow participants to apply their theoretical knowledge to skills by answering questions according to scenarios [35-37].

in the range of health-care facilities, covers the breadth of trauma care, including initial resuscitation, definitive care of injuries to all body regions and long-term rehabilitation [26,27,30].

The published pre-hospital trauma care systems by WHO proposes core strategies, equipments, supplies and organizational structures needed to create effective and adaptable pre-hospital care systems for injured victims worldwide which is basing on several essential principles as follows: An effective pre-hospital trauma care system should be simple, sustainable, practical, efficient and flexible, whenever possible, pre hospital trauma care should be integrated according to country's existing health care facilities, public health care, transportation infrastructure. The effective systems for pre hospital trauma care will form the foundation for all emergency care [26, 27].

2.2 Road Fatalities in Africa

In a study done on car accidents showed that, about 10% of global road deaths between 1999/2000 took place in Sub-Saharan Africa where only 4% of global vehicles were registered. Conversely, in the entire developed world, with 60% of all globally registered vehicles, only 14% of road deaths occurred. However, given the widely recognized the problem of under-reporting of road deaths in Africa, the estimated road traffic death ranges between 68,500 and 82,200, where South Africa and Nigeria were leading, followed by Ethiopia, Kenya, Uganda, Tanzania and Ghana [1].

Having broader efforts in training, resources, or organization and planning for all trauma victims will improve care of injured patients. Several studies from LMICs have shown improvements in such measures. Cambodia and Northern Iraq were good examples, they created a two-tiered response system, first tier included lay-first responders who had first aid training, and the second tier consisted of a smaller number of paramedics with more advanced training. Equipments and supplies were provided, but not ambulances. They continued to rely on the existing transport system of private and commercial vehicles, as well as non-motorized transport. This program greatly improved timely care for victims of mine blasts and other

forms of trauma. Mortality among severely injured persons decreased significantly from 40% to 9% [25].

2.3 Impact of car trauma in Tanzania

A review of literature indicates that trauma injuries are a leading cause of morbidity and mortality in Tanzania. According to National Road Safety Council of Tanzania's (NRT) report of 2005 there was an increase on road traffic accidents. In 1994 the total number 10,674 were injured while in 2004 it had increased to 17,213 which was of 60% [8].

A study done in Kibaha shows that between 2001/04, 276 people were injured in road traffic accidents (police report, 2005) and on the report from Tumbi Hospital, in patients and causalities there were 855 injured people among them 251 died [31].

According to research done by Banyikwa in 1989 indicated that, road traffic accidents in communities living along the highways in Tanzania including Dar es salaam City is very high. The knowledge and skills gap on PHTC identified as the source. The innocent passengers and, pedestrians become victims. There is a need of government and non-governmental organizations to intervene the disaster management team [39].

In the study done by Banyikwa in 2005, the number of reported death resulting from road accidents was about 2,250 reflecting an annual growth of 9% compared to the previous year. This rate is higher than the corresponding economic growth which is about 6%, and much higher than the vehicle population growth rate. It is estimated that, the number of fatalities will reach 2,900 people by 2008 [40].

A study conducted by Mwakambe on the causes of accidents in Dar es Salaam on Morogoro highway, between 2002 and 2006 , found that there were over 2,600 accidents, resulting in over 6% deaths annually [10].

Several studies which have been done in Tanzania investigating the prevalence and pattern of road traffic accidents (RTAs), the study by Rwebangira on regional distribution of road accidents have shown that about 35% of all RTAs in Tanzania occur in Dar es Salaam city. In the study done by Barengo in 2006, have shown that, there was an increase in RTAs in Dar es salaam city by 4.3% between 1999 and 2000, and 2.7% between 2000 and 2001 [41,42].

Furthermore, RTAs in Dar es Salaam city accounted for 56% of all patients admitted to hospitals due to injuries, the study done by Museru et al, in 1998. Data from police records showed that in the year 2006, in Dar es salaam City, there were 7,377 RTAs with 410 death and 4,807 injuries [34,43,44].

Additionally, a look at the Emergency Medical Department (EMD) records of Muhimbili Orthopaedic Institute (MOI) shows that trauma injuries are the major cause of admissions to the institute. In the year 2005/06, MOI reported 8905 trauma injuries, 65% of which were due to motor accidents. Similarly in the following year 2007/08, 9,634 trauma injured victims attended the EMD at MOI, among these 70% were due to motor accidents [9].

The findings clearly indicate that there are considerable number of trauma injuries in Dar es Salaam that require proper PHTC in order to minimize its associated complications and mortality. Many associated complications and deaths among injured victims are preventable if proper PHTC would be provided within five minutes to an hour or two hours of injury depending on the severity of trauma (Golden hour) [8-10,15,16,45].

2.4 Improvement of pre-hospital trauma care

An increasing number of trauma injuries require proper PHTC. The reduction of this problem needs a variety of activities such as control of injuries, through major emphasis on prevention and improvements in the care of the injured victims including pre hospital trauma care within our settings and initiation of professional community-based paramedics.[7,15,16,19,38].

However, there is a misconception that improving trauma care is considered to be expensive and impractical in LMICs. But studies have shown that strengthening of pre hospital care through training of community-based paramedics, and public lay persons as first responders; community ambulances personnel; traffic police and basic surgical care teams at district hospitals can be extremely cost-effective in terms of reducing the burden of mortality and disability associated with trauma injury [5-7,16,17].

Having broader efforts in training, resources, or organization and planning for all trauma victims will improve the care of injured patients. Several studies from LMICs have shown improvements in these measures. An example was a program that was established in mine-infested areas of Cambodia and Northern Iraq, which created a two-tiered response system; first tier included lay-first responders who had first aid training, and the second tier consisted of a smaller number of paramedics with more advanced training. Equipments and supplies were provided, but not ambulances. They continued to rely on the existing transport system of private and commercial vehicles, as well as non-motorized transport. This program greatly improved timely care for victims of mine blasts and other forms of trauma. Mortality among severely injured persons decreased significantly from 40% to 9% [25].

Another study in Mexico, reported a training program designed to strengthen the performance of an existing basic EMS, where by the local government gave effort in training the existing staff that resulted into decreased mortality for all trauma victims treated by the EMS from 6.3% to 2.5 % [46].

A project by WHO and International Society of Surgery developed guidelines for management of trauma victims which defined 11 core essential trauma care services that every injured person in the world should realistically be able to receive, that are most cost-effective and high-yield trauma care services. Some of the guidelines were related to pre-hospital trauma care services such as: Open airway and maintain before hypoxia to death or permanent disability, support impaired breathing until the injured person is able to breathe adequately

without assistance, recognize unstable spinal cord injuries and manage appropriately including early immobilization that result in minimization of physical impairment of individuals caused by trauma [22,17,18].

To guarantee the availability of these services, the guidelines outline globally the human resources (skills, training, staffing) and physical resources (equipment, supplies) that should be in place in the range of health-care facilities .All these recommendations cover the breadth of trauma care, including initial resuscitation at the scene, definitive care of injuries to all body regions and long-term rehabilitation [30,17,18].

The WHO has developed pre hospital trauma care systems to give guidance to strengthen care of the injured victims in the field, before they arrive at the fixed facilities [3].These increased global attention that are focusing on trauma care through World Health Assembly Resolution 60.22: "Health systems: emergency-care system", and which governs board of the WHO. The resolutions direct WHO's activities and carry considerable influence on actions of individual countries, as well as non-government organizations and funders [3,17,46-48].

The WHA resolution passed for the first time in 2007, encouraging each government worldwide to increase their efforts at providing care for trauma and other emergency conditions. The resolution listed 10 actions that Member States could take to achieve such as: "Identifying a core set of trauma services and developing methods to assure and document such services are provided to all who need them", including the trauma management guidelines and global efforts to promote and implement them [17,46-50].

The trauma patient has a big chance of survival if definitive care is initiated immediately at the scene and within five minutes to an hour or two hours (depending on the severity of injury) and continued throughout the health care facilities or hospital. The management of trauma victims which are governed by theories on pre hospital trauma care, "stay and play" theory believe that, "time in the field can be well spent stabilizing the patients physiological status" this is being used where proper PHTC or EMS is in place and "scoop and run" theory, believe

that "only life threatening issues should be addressed in the field,". To our settings "scoop and run" theory is applicable due to lack of resources (human and non human) [17,46-50].

The researcher has adopted some questions from WHO essentials of trauma care of 2004/05 to formulate questionnaire which is modified according to our setting and availability of resources. The questionnaire has based much on ABC care of trauma victims.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study design

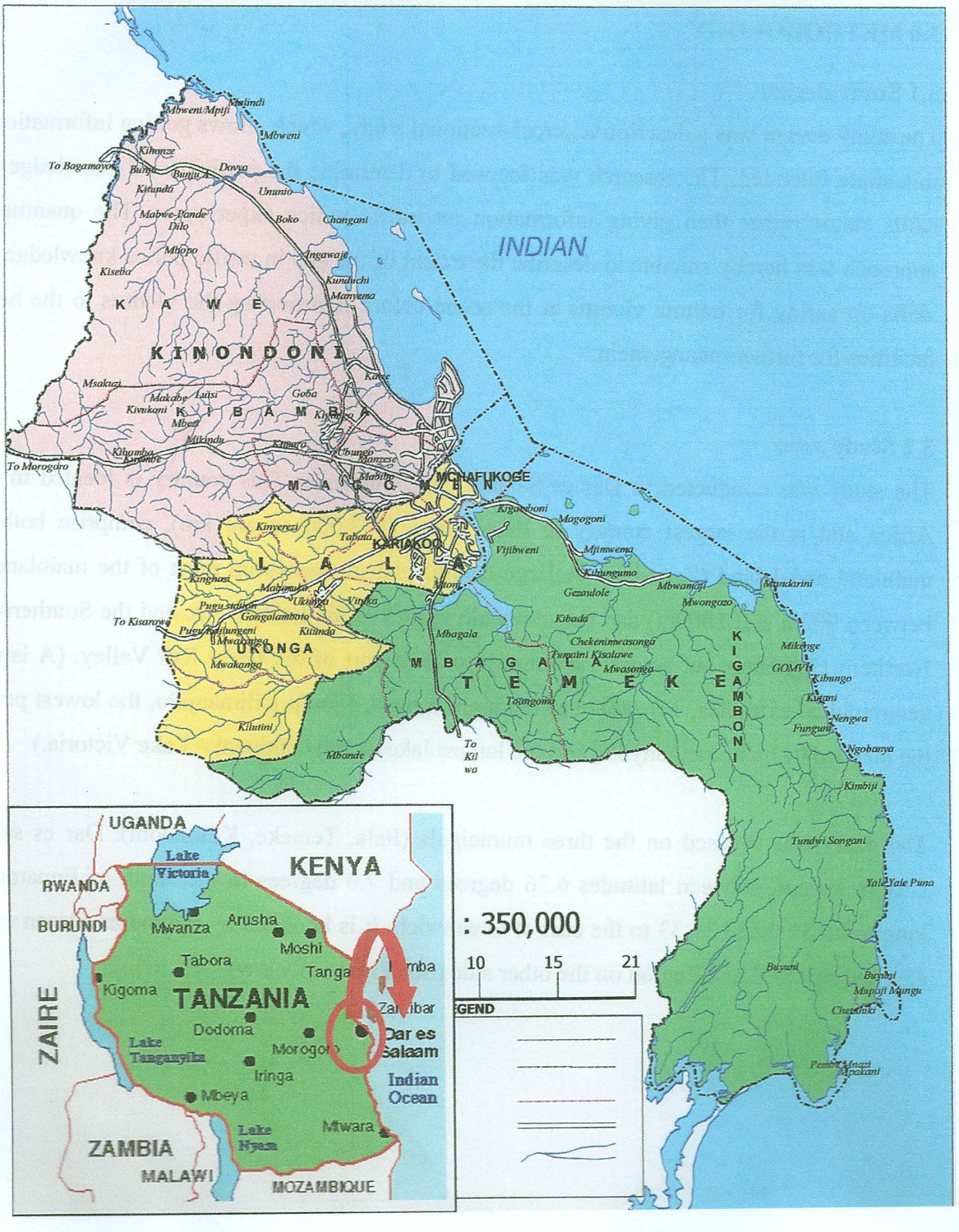
The study design was a descriptive, cross-sectional study, which allows getting information as this study intended. The research was focused to determine the participant's knowledge and skills status rather than giving information on traffic police experiences. The quantitative approach was hereby suitable to describe the extent of the gap in traffic police knowledge and skills on caring for trauma victims at the scene before transporting the victims to the health facilities for further management.

3.2 Study area

The study was conducted in Dar es Salaam City, Tanzania. This country is located in East Africa and is the largest country in East Africa (943,000 square km), comprise both the mainland and Island (Zanzibar). A large central plateau makes up most of the mainland (at between 900m and 1800m) and the mountain ranges of the Eastern Arc and the Southern and Northern Highlands cut across the country to form part of the Great Rift Valley. (A land of geographical extremes, Tanzania has the highest peak, Mount Kilimanjaro, the lowest point – the lakebed of Lake Tanganyika, and the largest lake on the continent – Lake Victoria.)

The study was focused on the three municipals (Ilala, Temeke, Kinondoni). Dar es salaam City is located between latitudes 6.36 degrees and 7.0 degrees to the south of Equator and longitudes 39.0 and 33.33 to the east of Greenwich. It is bounded by the Indian Ocean on the east and by the Coast Region on the other side (See Figure 1 below).

Figure 1: Map of Dar Es Salaam City Council Showing Municipalities



Dar es Salaam Area

Table 3.2.1: Distribution of the total land mass area of Dar es Salaam city, by Municipality

Municipality	Total land mass area (sq km)
Ilala	210
Temeke	652
Kinondoni	531
Total areas	1393

Source: City Council for surface area and Economic survey 2002 for population

The total surface area of Dar es Salaam City is 1,800 square kilometers, comprising of 1,393 square kilometers of land mass with eight offshore islands, which is about 0.19% of the entire Tanzania Mainland's area. Temeke Municipality has the largest land surface area followed by Kinondoni while Ilala has the smallest area (See Table 3.2.1 above).

These are highly populated areas with about 3 million people (2002, Tanzania National census and housing census) where most of the trauma victims' who need immediate pre-hospital trauma care are due to motor accidents in comparison to other injuries. In 2007/08, among all trauma victims, 70% were due to motor accidents (MOI). In addition, traffic police are the ones responsible for handling most of the trauma victims before transferring them to health care facilities or trauma referral hospital, MOI for further management.

3.3 Study population

The study population was the traffic police working in Dar es Salaam city within these three municipals and those who were on duty during this study. According to traffic police protocols and for their security wise, getting the total number of traffic police countrywide was difficult. The total number of traffic police in Dar es salaam City was about 390. Nothing was known concerning their knowledge and skills on pre-hospital care to trauma victims. No such study had been done before. The traffic police knowledge and skills were assessed for the most

relevant information in connection with pre-hospital trauma care to injured victims. This was a two-month study, from May to June 2010.

3.4 Sample size

There was no study found on knowledge and skills check of traffic police, therefore 50% was used to get sample size which is allowed statistically. Then 0.07 or 7% was used as maximum likely error which also is allowed statistically and not to be more than 0.1 (MUHAS-School of Public Health, statisticians (Dr Kandida, and Dr R.Mpembeni), Biostatistics Lecture notes, 1997). In this study 0.07 is used to get 50% of traffic police. The total number of Dar es Salaam traffic police was about 390 and 50% of them were 195, but the study was done to 196 participants guided by calculation.

The formula used to calculate sample size was,

$n = Z^2 p(1-p)/d^2$

$n = (1.96)^2(0.5)(0.5)/(0.07)^2 = 196$

n = is the sample size

Z = percentage point of the normal distribution corresponding to the level of significance.

For 95% level of significance Z=1.96.

d= Maximum likely error (7%).

P= is the estimated proportion of traffic polices with some knowledge and practice (Taken to be 50%).

The sample size supposed to be 195 traffic police. This is 50% of all traffic police working in Dar es Salaam city. Therefore the study was done to 196 traffic police with inclusion criteria.

3.5 Sampling procedure

The sampling procedure was simple random sampling done at traffic police headquarter. Permission letter was received from Tanzania Inspector General of Police. All traffic police

with inclusion criteria from the three municipals were listed. Then calculation was done to get 50%. Letter for introduction was sent to each Municipal. It was easy to meet them at their settings as traffic police do not have day off. The study was done between 10:00am through 03:00pm, from Monday to Sunday. It was the 40 days study as police posts were scattered and TP commitment security wise. The word **YES** was used to represent targeted population and the word **NO** was used to represent the rest of the population who were not going to participate in the study. Then the words **YES** and **NO** were written on **pieces** of paper which were then folded and placed in a container and mixed well. The procedure of drawing numbers from the box by each participant was used. Once a piece of paper was chosen, it was not included in the sample again and each participant was supposed to **pick** only once. In addition, those who participated in the pre-test were not included in the study. Those who picked "**YES**" were the study participants.

3.6 Inclusion criteria

The study was done to the traffic police on duty during the study period who agreed to participate. In addition, the study was done to traffic police who were first responders and caretakers of victims at the scene.

3.7 Exclusion criteria

Exclusion criteria were traffic police who were on leave and those who were on official duty or those who did not appear at the scene in case of accidents and during study period.

3.8 Data collection instruments

Table 3.8.1.Three instruments used to measure various objectives (see below table)

Research objective	Questionnaire	Review guide	Equipment check list	Participants opinion-
To determine knowledge of traffic police on assessment of trauma victims	Questions1 to 6 on knowledge test 7-11 participants care of trauma victims and training			
To describe skills of traffic police on the care of trauma victims during PHTC	Questions 8-11 experience on trauma care	Question guided by simulation scenarios: 1 to 7 skills test questions	Availability of instruments for trauma care, questions 1 to 10	
To explore participants opinions on the improvement of PHTC				Questions 1 to 6 open ended questions

Data was collected using questionnaires, (appendix vii:1.2), review guide questions for skills check (appendix vii:2) and equipment check list (appendix vii:3). Instruments tools were in both language, English and Kiswahili. The questionnaires were used to collect demographic information, data about knowledge and skills assessment was focusing on trauma victim's airway, breathing and circulation (ABC). Total of six questions were used to assess knowledge of indicative signs of severely injured victims and correct sequence to conduct immediate assessment such as airway, breathing and circulation. Possible score range was 1 to 6. The

skills on trauma care were assessed using 1 to 7 guide questions from scenarios on the care of trauma victims at the scene. Lastly participants were asked to give their opinion on the improvement of pre-hospital trauma care. The approximate time to fill the questionnaire was between fifteen and twenty-five minutes.

3.9.1 Pre-testing of data collection tools

A pre-testing was conducted to small number (5) of traffic police to check validity of the questionnaire. The aim of pre-testing was to check whether the instrument to be used in research was able to collect relevant and desired information. Responses from the study participants were compared and assessed to see if questions were well understood. The pre-test guided the unclear questions to be revisited or removed by researcher before the actual study. The five participants in the pilot study were not included in the study; the 5 traffic police represent the intended population.

3.9.2 Validity

According to Kirk and Miller, (1986)[52] validity is the degree to which the findings are interpreted in a correct way and Gribich, (1999)[53] defined validity as the ability with which the results of a study can be verified against the stated objectives. Experts of trauma and injury, Dr S. Faya, of The Aga Khan Hospital –Dar es salaam and Dr Petra Brysiewicz of University of Kwazulu Natal in South Africa reviewed the questions for validity of the questionnaire content. In addition, the questionnaire was reviewed by social science professionals, Prof.Mhondwa from Muhimbili School of Public Health and Social Science for validity on assessment of knowledge and practice on pre-hospital trauma care. The questionnaire was in English language and translated into Kiswahili to transmit the same connotation.

3.9.3 Reliability

Reliability is the degree to which the findings are independent of accidental circumstances of the research Kirk and Miller, (1986)[52] .The study was conducted using structured, closed and open-ended questionnaire, review guide questions, participants opinion guide questions and

instruments check list, was tested and retested for reliability. The instruments used measure variable to find out the understanding of the participants to answer questionnaire following instructions given.

3.10 Data collection

The data was collected from the three Municipals using two research assistants and the researcher, one in each Municipal. The demographic characteristics and knowledge data were obtained using self-administered structured questionnaire (Appendix 5). The skills on trauma victims care of traffic police were assessed using review guide checklist format converted to simulation scenarios adopted from Morgan et al,(2004)' Glavine et al (2008), and Andrew et al,(2003)[54-56]. To this study, simulation scenarios were prepared to imitate the real situation of accident with different conditions of the victims. Then participants were given questions according to scenarios on the care of trauma victims at the scene prior to transferring them to health facilities (Appendix 8). Performance evaluation was scored using review guide with 1 to 7 scoring points (Appendix 6).The availability of equipment used in the scene during trauma care was assessed using a checklist (Appendix 7) and participants' opinion for improvement on pre-hospital trauma care was explored using guide questions (Appendix 9). The questionnaire was prepared in English and translated in Swahili (common language used by Tanzanians) and then back translated into English for validity reason. The data collection period was for two months in May and June 2010.

3.11 Ethical consideration

Ethical approval was sought from MUHAS Senate Research and Publication Committee (Appendix 1). Additional permission to conduct the research from the three Municipals (Ilala, Temeke, and Kinondoni) was sought from Tanzania Inspector General Police (IGPT) (Appendix 2) and Police Officers Health Department (Appendix 3). Written informed consent (Appendix 4) was sought from traffic police and study participants after explaining to them all about the study and its purpose as well as being assured of anonymity. They were also assured of voluntary participation and their rights to withdraw from the study at any time without

adverse consequences. To ensure anonymity and confidentiality numbers and not names were used for participants' identification.

3.12 Data analysis

The obtained data was analyzed using SPSS for windows version 13.0, statistical significance for comparison by using the chi-square test to analyze data and significance level of 0.05 was used. Differences were considered statistically significant if P-value was less than 0.05.The variables were presented as mean, nominal and ordinal variables. Answers to question rated as: **Yes** or **No**, and Univariate analysis to assess the associations between demographic and clinical variables with selected items of knowledge performed with Chi-square test. Knowledge was assessed using 6 points scored using 1 to 6 points which lies in between 0% to 100%. Excellence was >5/6 score = (>85%), good knowledge was between 5 to 4/6= (75%-85%), fair or low knowledge was 3/6= (42%) and poor knowledge was <3/6= (<42%). In this study there was no excellence score (>5/6 or >85%) or poor knowledge (<3/6 or <42%). Participants' skills were assessed using 7 points from 1 to 7 which were analyzed using frequency and percentage. A probability value of $p \leq 0.05$ was considered statistically significant. All of the statistical analysis was done using SPSS window.

3.13 Dissemination

The findings of this study would generate important information on the pre-hospital trauma care to traffic police as first responders by highlighting the gaps on knowledge and practice among traffic police. The copy of the study will be disseminated to School of Nursing-MUHAS, MUHAS Library, Tanzania Inspector General of Police, Dar es Salaam Regional Police Commissioners (RPCs), Municipals Police Regional Traffic Officers (PRTOs) and Police Health Department. Furthermore, the research findings will be sent to the Ministry of Health and Social Welfare and Ministry of Home Affairs. The research findings will be published in Nursing Journals and presented in scientific workshops and conferences both local and international.

CHAPTER FOUR

4.0 RESULTS

This chapter includes description of results starting with analysis of data regarding traffic police knowledge and skills on pre-hospital trauma care. The last part of this chapter describes analysis of data on availability of working tools used by Dar es Salaam traffic police at the scene during accident and describes analysis of data on participants' opinions on what could improve their practice of pre-hospital trauma care to injured patients at the scene.

4.1.1 General demographic data

Table 4.1.1 Demographics characteristics of study participants (n=196)

Item	Characteristics	Frequency(n)	Percentage (%)
1.working area	Temeke	57	29
	Ilala	81	41
	Kinondoni	58	30
2.Age	24-35 yrs	97	49
	36-45 yrs	83	42
	46-55 yrs	16	8
3.Rank	CP	111	57
	CPL	56	29
	SGT	15	8
	S/SGT	14	7
4.Level of education	Certificate	116	59
	Diploma	72	37
	Degree	8	4
5.Working experience	0-10 years	111	57
	11-20years	62	32
	21-30years	23	12

The sample size was 196 traffic police, and response rate was 100%. To analyze the data the participants were categorized using their level of education; working experience; specific working area (Temeke, Ilala or Kinondoni) , age and rank. The distribution of traffic police who participated in the study according to Municipalities was, Temeke 57 (29%), Ilala

81(41%) and Kinondoni were 58(30%). Among the 196 participants 111 (57%) were Constable Police, Coplo Police were 56(29%), Sergeant Police were 15(8%) and Station Sergeant were 14(7%). Their level of education varied, most of the Constable Police had certificates 116(59%), followed by diploma holders 72(37%), degree holders who were few; Coplo, sergeant and station sergeant were 8(4%). The participants' age ranged between 24 -55 years, with mean age of 29 years, and median 35 years, whereby 24-35 years were 97(29%), 36-45 years were (41%) and 45-55years were 16(8%). The participants had working experience between 0 -10 years 111 (57%), 11-20 years 62 (32%) 21-30years 23 (12%) as per table 4.1.1 above.

4.1.2 Participants' awareness and care of trauma victims

Table 4.1.2. Frequency distribution on training and care of trauma victims (n=196)

Item	Characteristics	Frequency(n)	Percent (%)
Last day of caring trauma victims within the given period	0-6 months	126	64
	7-12 months	26	13
	>1 year	31	16
Ever learned pre-hospital trauma care?	Yes	176	90
	No	20	10
Tell the place of learning/training	During training	154	79
	In-service training	31	16
	From other colleagues	11	5

The traffic police who had recent care of trauma victims within 6 months from the day of this study and below were 126 (64%), between 7-12 months were 26 (13%) and >12 months were 31 (16%) and those who did not care for the trauma victims were 13(7%). Most of the participants had their pre-hospital trauma care training when at college 154(79%). The in-service training on pre-hospital trauma care attended by 31 (16%) and those who learned from their colleagues on pre-hospital trauma care were 11 (5%) (table 4.1.2 above).

4.2 Traffic police knowledge on assessment of trauma victim

Table 4.2: Frequency distribution of Knowledge on Pre-hospital trauma care (n=196)

Item	Scoring process	Frequency(n)	Percent(%)
Identification of severely injured victims	(4-5/6 score)	80	41
	(3/6 score)	116	59
Quick and immediate assessment of the injured victims	(4-5/6 score)	136	69
	(3/6 score)	60	31
Identification of shocked trauma victims	(4-5/6 score)	53	27
	(3/6 score)	143	73
Identification of victims with neck /or back injury	(4-5/6 score)	85	43
	(3/6 score)	111	57
Assessment of levels of consciousness to trauma victims	(4-5/6 score)	130	66
	(3/6 score)	66	34
The list of topics which were undergone during training on PHTC:	Airway assessment and care	129	66
	Protection of spinal cord and neck	25	13
	Identification of severity of bleeding and control	42	21

The participants' total score using World Health Organization pre-hospital trauma care guide have been shown in table 3 above. The score was by 6 points. Participants who scored 3 out of 6 points were graded as low or fair knowledge, whereby 4 to 5 points out of 6 were graded as good knowledge. The mean score of participants on knowledge was 1.59, median was 3.5.

The knowledge of participants on individual items of basic knowledge on trauma care was as follows; 41% had good knowledge on identifying severely injured victims, while 59% had low/fair knowledge. Quick and immediate assessment of injured victims was accurately by 136 (69%) participants and fairly done by 60 (31%). Only 53 (27%) participants could identify shocked victim and 143 (73%) could not. Eighty five participants (43%) had good knowledge on identifying patients with neck or back injury and 111 participants (57%) had low knowledge. One hundred and thirty participants (66%) had good knowledge in identifying level of consciousness while 66 participants (34%) had low knowledge. Most of the participants129 (66%) had undergone training on care of airway, 13% had training on protection of spinal and neck, and 20% gained control of hemorrhage respectively as shown in table 4.2 above.

4.3.1 Participants skills check questions:

Table4.3.1: Simulation scenarios on trauma skills (n=196)

Item	Characteristics	Frequency(n)	Percent (%)
According to scenario, which step are you going to start with as first responder?	Safety management	92	47
	Secure area	49	25
	Rushed the injured patients to the hospital	55	28
Care of unconscious trauma patient with no neck or back injury	Identification of unconscious victim and care of airway	142	72
	Remove cloth from traumatized victim	22	11
	Quick rush to the hospital	32	16
How can you identify if victim is breathing?	Identification of cardiac arrest	110	56
	Palpation of carotid artery	78	40
	Check for movement	8	4
How to check if victims heart is beating or not?	Palpate neck blood vessels for pulsation	97	49
	Check on chest movement up and down	94	48
	Check on bleeding status	5	3
Care of patient with big cuts and severe bleeding, how to handle	Allow air entry by chin lift head tilt	161	82
	Quick rush of victim to the hospital	29	15
	Victim can tell you part to hold	6	3
The victim has broken both legs, how can you attend him at the scene?	Stabilize the part with hardboard and/or bandage/line	149	76
	Two or more people to lift the leg	38	19
	Lie victim on the floor and organize for transport	9	5
Care of patient with back or neck injury , how to handle	Caring of victims with neck and /or back injury-	119	61
	Lift victims with more than 2 people	42	21
	Quick rush of victim to the hospital	35	18
Ambulance services	Use police patrol vehicles for transporting victims	80	45

The skills of Traffic Police (TP) assessed using Simulation Scenarios. The mean score of seven questions was 1.28, with standard deviation of 0.448 and variance of 0.201. The scoring was done using seven points answered by participants. The participants who got within 3 to 4 scored as fair or low skills and 5 to 6 scores were graded as good skills and >6 scores were graded as excellence. In case of accident, 92 (47%) of participants reported they would have checked for the surrounding's safety; 49 (25%) reported would have secured the area and 54 (28%) would have rushed the injured patients to the hospital. In case of caring for unconscious patients, most of the participants 142 (72%) reported they would have started caring for the airway, while 22 (11%) and 32 (16%) reported would have started with removing clothes from traumatized patients and quick rush of victim to the hospital respectively. In case of identifying victims with cardiac arrest, 110 (56%) reported would have looked for chest movement, 78 (40%) would have palpated the carotid artery, and 8(4%) would have checked for movements of the body part. On about caring for victims with neck and/or back injury 119 (61%) reported would have used hardboard and neck collar, 42 (21%) would have lifted the victim by more than 2 people, while 35 (18%) reported would have quickly rushed the victim to hospital. Eighty eight (45%) participants reported using police patrol vehicles for transporting victims to hospitals. Others reported using available private/public transports as shown in table 4.3.1 above.

4.3.2 Community Participation

Table: 4.3.2 Community participation during life saving (n=196)

Item	Frequency (n)	Percent (%)
Community participation/support in case of accident (informer, security, first aider)	106	56
Community are not supportive in case of accident (causing more damage, gazing)	87	44

Most of the participants 109 (56%) said that the community are supportive in life saving in case of an accident by acting as first aider, informer and security. The 87 (44%) said that community are not supportive, instead they come at the scene for the purpose of taking victims properties and causing more damage when searching or looking for cash and collecting properties by turning them. Sometime they kill victim when arguing during searching of cash and properties 79 (40%). Few of them reported that, they keep on looking to see what's going on 8 (4%) as per table 4.3.2 above).

4.4 Participants' opinions

Table 4.4. The compiled common participants' opinion (n=196)

Item	Frequency(n)	Percent(%)
Government to supply protective gears and working tools	Yes 183	93
	No 13	7
Pre-hospital trauma care to be part of police syllabus	Yes 92	98
	No 4	2
First aid education to the community, taxi drivers and at the civilian working areas	Yes 90	97
	No 6	3
MoHSW and MoHA to work hand in hand on pre-hospital trauma care	Yes 187	95
	No 9	5
Pedestrian, civilian cars/tax drivers to be flexible on offering transport to hospital	Yes 85	94
	No 11	6
In-service training on first aid and trauma care at the scene every year	Yes 196	100
	No 0	0

The knowledge and skills of participants was tested in questionnaire part 1:2 and questionnaire part 2:0 to know their understanding, application of knowledge and working tools they had. The researcher compiled participants' opinions for the future improvement of pre-hospital trauma care.

The participants gave their opinions to the different authorities on the improvement of pre-hospital trauma care. One hundred and eighty three (93%) participants recommended for the government to supply protective gears and working tools, 192 (98%) participants recommended pre-hospital trauma care to be part of police training syllabus, 190 (97%) participants recommended first aid education to be given to the community including taxi and civilian drivers, 187 (95%) participants recommended for the MoHSW and MoHA to work hand in hand on the improvement of pre-hospital trauma care. One hundred and ninety five (94%) participants recommended pedestrian, civilian cars/taxi drivers to be cooperative on offering transport to trauma patients to health facilities, and 196 (100%) participants recommended formal in-service training programs on pre-hospital trauma care as shown in table 4.4 above.

CHAPTER FIVE

5.0 DISCUSSION

This chapter begins with a discussion of limitation of the study and study findings on demographic, knowledge and skills followed by discussion of participants' opinions on improvement of pre-hospital trauma care to traffic police. Lastly, the researcher discussed on the participants opinions on the improvement of pre-hospital trauma care and implication of the study findings for traffic police practices.

5.1 Limitations of the study

The researcher used structured questionnaire in assessment of knowledge which did not allow much in-depth views from the participants. Also there was no control over completeness of the questionnaire as it depended on the participants' choice according to consent. Sometimes participants did not fill all questionnaire or part of it as per agreement on consent form which it allowed him/her to do so, this was controlled through educating participants on the importance of their honest views for the real study findings. The simulation scenarios was the formulated situation which might happen at the scene in case of accident, used by the researcher to assess skills of traffic police, this part imitated realism so it lacked realism and real victims response. The researcher tried to control these simulation scenarios by consulting trauma specialists and behavioral scientists during formulation of scenario review guide questions, trying to make them as common and real as possible. Participants' opinions were collected using open ended questions then compiled them to get common ideas.

5.2 Demographics:

The 196 PT participated in the study. Their distribution according to Municipalities was Temeke 57 (=29%), Ilala 81(=41%) and Kinondoni 58(=30%). Their ages ranged between 24 to 55 years. The distribution of TP differs due to sensitivity of the Municipal. Ilala lies at the city centre of Dar es Salaam which is highly motorized, also is nearer to the National Head Office (Presidential), and followed by Kinondoni Municipal which lies at the main entrance

road from the Region with high motor traffic accidents. Temeke is the biggest Municipal with less population compared to other Municipals. It is a little bit aside from city centre with less MTA (Police report, Dar es Salaam Map) [34].

There was no any impact between TP knowledge and education on PHTC or between TP rank and skill on PHTC. As the TP becomes seniors is when they become more committed. Though they were few, most of the time they physically appeared at the scene and they kept on patrol to oversee the other traffic police activities. In case of accident, the first TP to appear at the scene would be the team leader then the rest would work hand in hand regardless of their rank or level of education (Police report, 2010).

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5.3 Traffic police knowledge on assessment and care of trauma victims

Findings from this study indicate that, the mean score of the study was 1.59 of the study of participants on assessment of trauma patients during pre-hospital trauma care. Forty one percent of the respondents had good knowledge on identifying severely injured patients while 59% had fair knowledge. This implies that the respondents generally had knowledge on identifying severely injured victims as there had been no respondent who was found by this study to have poor knowledge (<3/6 score) on identifying severely injured victims. According to the study done by Astrom and colleagues in 2006 on the causes of road traffic injuries and Hogan in 2006, on knowledge needed during care of trauma victim at the scene fulfills the knowledge which traffic police were having[30].

Quick and immediate assessment of injured victims was done properly by 69% of the respondents. This shows that more than half of the traffic police in Dar es Salaam had knowledge on how to do quick and immediate assessment to injured victims. This is an important area to be known to people like traffic police about which studies have shown to be one of the major roles of the first responders when there is an accident or disaster. The studies done by Garside in 2005 on improving care of severely injured patient and Goosen and colleagues in 2003 on the care trauma victims support the above points [49,54].

Only 27% of the respondents in this study could identify shocked victims. This implies that a large number of the respondents (73%) had no knowledge on how to identify a victim with shock, which had effect of increasing the number of avoidable disabilities and deaths. In study done by Astrom and others in 2006 about the main causes of trauma mortality and disabilities showed the knowledge gap on care of victim with shock [30].

Forty three percent of the respondents had good knowledge (4-5/6 scores) on identification of victims with neck and back injuries while 57% had low knowledge (3/6 score) in this aspect. No respondents were found in this study to have poor knowledge on identifying victims with neck and spinal injuries. But only 13% of the respondents reported to have training on how to protect spinal and neck injuries. Twenty eight percent of traffic police did not attend in-service training. This implies gap in updating knowledge to some of the participants. The study conducted in 2003 by Scheres and colleagues, noted that, in-service training keeps on sustaining knowledge of workers while practicing [5].

In this study, although the respondents were able to identify victims with neck and spinal cord injuries, few knew how to protect it. Sixty six percent of the respondents had good knowledge in identifying level of consciousness; this implies that traffic police had knowledge on this part, but their missing application of knowledge to practice or care of trauma victims according to modified questionnaire using WHO essentials of trauma care of 2004. The study conducted by Reines and colleagues in 1988 on appropriate motor accident trauma care evidenced inadequate knowledge of traffic police in PHTC [17,18].

The finding showed that majority of traffic police had low score knowledge on detection of shocked victims, recognition of poor blood circulation, and recognition of respiratory obstruction, these were among ABCs once not taken care accurately, victim might die or end up with disabilities. Similar to these findings, other studies that looked on general knowledge and care of trauma victims at the scene reported lack of knowledge on pre-hospital trauma care; and they commented that it contributes a lot in increase number of trauma morbidity,

mortality and disabilities worldwide; Kopits and colleagues in 2005 and in the study done in 1995 by Esposito had the same idea[29,31].

5.4. Improvement of pre-hospital trauma care in Dar es Salaam

The skills and application of knowledge of Traffic Police which was observed using Simulation Scenarios shown in the mean score of seven questions was 1.28, with standard deviation of 0.448 and variance of 0.201. Simulation scenarios and guide question have been used to assess traffic police due to their nature of work Morgan and colleagues in 2004. In case of accident 47% of participants reported they would have checked for the surrounding's safety. This implies that the respondents generally could have maintained safety of the area which was not enough for them being first responders. Using WHO pre-hospital trauma care guideline of 2004/05, guides on how to care for trauma victims at the scene. Also other study on PHTC by Kelerman in 2005 applied the same massage on care of trauma victims using guideline [3,26,27].

In case of caring for unconscious patients, 72% of the participants would have started caring for the airway, this implies that the ABCs (airway, breathing and circulation) guideline in life saving had been followed; only 28% could not. These smaller percentages imply the need of in-service training on pre-hospital trauma care to traffic police. In the study done by Mathers in 2008 showed good effects on management of ABCs in case of physical trauma and study done by Hofman and colleagues in 2006 had the same findings [47,56].

In case of identifying victims with cardiac arrest only 40% would have palpated the carotid artery, this implies that application of knowledge to practice of traffic police was low compared to other studies. This is life saving practice which needs competence the TP need professional training on PHTC so that they can manage uses of trauma guideline when in need. In study done in Uganda by Mathers in 2008 on pre-hospital trauma care showed the effects of using guideline during trauma care; also study done in 2008 by Husum and colleagues implies the same [25,47].

Sixty one respondents could care for the victims with neck and/or back injury using hardboard and neck collar, while 21% would have lifted the victim by more than 2 people, and 18% would have quickly rushed the victim to hospital. This showed that care of trauma victims with back or neck injury was seriously low resulting to increase on mortality or preventable disabilities. This study revealed suboptimal skills among traffic police on pre-hospital trauma care. In several researches done, showed that, lack of knowledge and skills on care of trauma contributes a lot to preventable morbidity, mortality or disabilities of trauma victims as revealed by the study done by Joshipura and colleague in 2003 [50].

Forty five percent of respondents used police patrol vehicles for transporting victims to hospitals while others used any available transport. By having identified means of transport or ambulance easily save trauma victims life. For the traffic police not having means of shifting trauma victims caused deaths on the way to hospital or serious preventable disabilities. The equipped pre-hospital trauma care ambulance which is assigned to this special duty is supposed to be equipped with airways and respiratory care kits, bleeding control package and hardboard for neck and /or back support and neck collar, according to WHO guideline, 2004/05 and other studies [26,27].

Generally, TP need training and skills application basing on pre-hospital trauma care as first responders for them to provide proper care and maintain Golden hour. In the study done by Kelerman in 2005 basing on timings in pre-hospital trauma care support the above point The study done by Areola in 2007 on the effects of emergency trauma care implies that it is possible to practice pre-hospital trauma care . The care of fractured victim managed by 76% of responders, this implies that the smaller number of traffic police with low score on practicing needed updating of their practice through in service training. The improvement of pre-hospital trauma care can save trauma victims life as in the study done by Husum and colleagues in 2003 [3,15,25].

In case of accident, community is the first responders to be at the scene. Majority of them are supporting the victims in life saving, acting as first aider, informer and security. Some of the communities are not supportive; instead they come at the scene for the purpose of taking victims properties and causing more damage when searching or looking for cash and collecting properties by turning them. Sometime they kill victim when arguing during searching for cash and properties. This implies that, there is a need in prevention and improvements in the care of the trauma victims at the scene before transferring them to health facilities to save life and prevent disabilities. In the studies done by Astrom in 2006 showed that, strengthening of pre hospital care through training of community-based paramedics and public laid person as first responders including traffic police reduces the burden of mortality and disability associated with trauma injury [30].

The findings of this study indicate that there were significant knowledge and skills gaps of traffic police on pre-hospital trauma care in Dar es Salaam that requires correct PHTC is in order to minimize its associated complications and mortality. Many of the associated complications and deaths among injured patients are preventable if proper PHTC provided within the first hour of injury. According to the study done by Mock and colleagues in 2003.Other studies done by Arreola in 2007 identified the importance of pre-hospital trauma care as the means of minimizing trauma mortality or disabilities if practiced accurately [7,15].

Availability of working tools used during pre-hospital trauma care

The researcher was interested to know the situation of working tools at the scene during life saving and prevention of disabilities. The study identified shortage of working tools at the scene. Out of 10 listed working tools, only few were in place and not in use due to problem in handling when on site. These imply that, the available working tools were not user friendly. These findings show that, trauma victims were not receiving proper care at the scene due to lack of working tools. National patient safety agency in UK, 2007 reported that 14 out of 64 deaths were due to lack of resuscitative tools. However, they also noted that generally the supply of working tools for pre-hospital trauma care at the scene was not enough to save

victims life and respiratory care, Hagon in 2006. This implies that shortage of working tools to traffic police as first responders affects care given to trauma victims to be substandard[57,58].

According to findings of this study, 126 (64%) TP handled trauma victims within six months, this proves that, the rate of motor accident in Dar es salaam is high as per study done by Mwakambe and Colleagues, on motor accident along Morogoro road and as per study done by Banyikwa and Colleagues on motor accident in Dar es salaam city. Majority of TP were attending pre hospital trauma care when at college 154(=76%) according to the study done and verbal report from traffic police though were not practicing properly due to shortage of working tools, what they have is only 10% of vital pre hospital needed working tools [10, 34,49].

5.5 Participants Opinion on improvement of Pre-hospital Trauma Care

Hundred percent of traffic police air their views to different authorities for the improvement of pre-hospital trauma care according to their experiences. The shortage of working tools, lack of knowledge and support from communities pushed them to give their views for the support from higher authority, Ministry of Health and Social Welfare and Ministry of Home Affairs. In the study done by other researchers it had shown that unstructured/in service or on the sport educational program when provided would improve the knowledge and skills of care givers; Therefore, in service training to traffic police and community would improve their knowledge and application of skills as per study done by Thome in 2002 [59].

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The study has shown that traffic police apply their knowledge sub optimally and had minimal knowledge on assessment and observation of trauma victims at the scene in some vital life saving areas. The working tools for handling trauma victims were not enough by 90% and in some police posts there were not available completely. The need of in-service training is among the mentioned issues to be within the fixed period and equally attended. Therefore it is the right time for the Ministry of Home Affairs to think on formal in-service training among traffic police as the first responders in trauma life saving. These can be implemented much better by both, the Ministry of Health and Social Welfare and the Ministry of Home Affairs to work hand in hand in the improvement on pre-hospital trauma care. The PHTC to be part of the traffic police syllabus during their training will be useful for traffic police training (assessed and observed for their knowledge and practice).

The study raises some important issues related to knowledge and skills gaps in some vital pre-hospital trauma care as per WHO guidelines which researchers and practitioners might take note.

The recommendations involve knowledge application, research and policy implications as follows:

6.2.1. Recommendations for skills

This study demonstrated substantial knowledge and skills gaps on assessment and care of trauma patient during pre-hospital care, especially on identification and care of shocked victims, severely bleeding and victims with neck and/or back injuries. This has serious implication in increasing preventable mortalities and disabilities caused by accidents and trauma. This implies that, the condition under which traffic police are expected to save lives of injured victims needs carefully consideration. And therefore, suggesting an urgent need for

pre- and in-service training and support structure necessary to promote required knowledge and skills of traffic police. This also needs to go hand in hand with the provision of working tools for assessment and care of trauma victims at the scene, including easy read and/or easy to follow guidelines that will assist the traffic police to perform their immediate life saving activities thoroughly and efficiently.

6.2.2. Recommendations for policy measures

Despite the fact that traffic police have undergone pre-hospital trauma care training during their study, it was not much effective on care of trauma victims. They were basing much on shifting victims from the scene to the health facilities (Scoop and run theory not stay and play theory). The familiarization on basic life support as first responders and life saver is vital. Therefore, the Ministry of Home Affairs should look on how to modify the existing training on pre-hospital trauma care through adding topics on basic life support so that it could be productive and follow WHO trauma care guideline.

6.2.3. Recommendation on joint professional trauma care

The Ministry of Health and Social Welfare and the Ministry of Home Affairs are recommended to work hand in hand on the improvement of traffic police pre-hospital trauma care through professional training on basic life saving

6.2.4. Training of professionals as first responders

The Ministry of Health and Social Welfare to think on the training of a group of professionals or paramedics on pre-hospital trauma care so that they could easily identify and manage or treat injured victims at the scene. These will save life of many victims who need urgent airway, breathing and circulation management.

6.3.5. Recommendations for future research

Several research questions have emerged from this study which would benefit significantly from further investigation within the same region or other regions in Tanzania. It is

recommended that the same study of assessment of knowledge and practice on pre-hospital trauma care to be conducted in other regions to identify the real situation on pre-hospital trauma care because there may be some differences between one region to another in the same country.

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APPENDIX I.1

CONSENT FORMS

Identification number--------

Consent to participate in a study

Greetings; I am Bertha Matiya, MSc student from Muhimbili University of Health and Allied Sciences, I am working on a research with the objective of assessing knowledge and practice on pre hospital care to injured and trauma patient within Dar es salaam city.

Purpose of study

The study focuses on assessing knowledge and care given to injure/trauma patient before transferring to trauma centre using WHO guidelines and available resource you have. By the end of the study, knowledge will be shared according to findings. This will help health care providers to assess their educational programs on pre hospital care. It is a voluntary agreement study whereby when you participate in this study, you will have to be interviewed.

Confidentiality

You are assured that all information that you shared with me in this study will not be disclosed to anybody by discussing with others and information collected during interview will be entered electronically using computer only and an identification number.

Risk

We do not anticipate any risks for you in participating in the study.

Benefits

We hope that the information that you share with us will give us more understanding in this area and help shape in a positive way the services provided to you and others to be improved.

Rights

You are free to withdraw from the study or answer particular question whenever you feel. You are not penalized or lose any benefits to which you are entitled to get for any refusal to participate in the interview.

Contacts

If you have any question regarding this study you should contact Bertha Matiya, Muhimbili University of Health Allied and Science, P.O BOX 65004, and Dar-s-salaam

In case you have questions regarding your rights as a participant, you should contact Prof. E. Lyamuya. Chairperson of the **Senate** Research and Publications Committee, P.O BOX 65001, Dar-es-salaam. Tel.number 2150302-6.

Agreement of participation

I--(Identification number) ----------Aged---------- I am willing to participate in the research topic assessment of knowledge and practice on pre hospital care given to injured patient as we agreed that the information is kept confidential.

Permission is hereby given that the information from questionnaire and the interview may be used for research purpose by co-signing researcher. I'm fully conscious of what the research entails and that the risks and benefits were explained to me.

_____ _____

Participant Researcher

Date_____ Date_____

APPENDIX I.II

FOMU YA KUKUBALI KUJAZA DODOSO

Namba ya utambulisho----------

Ridhaa ya dodoso

Habari, Mimi naitwa Bertha Matiya,ni mtafiti ,natoka chuo kikuu cha Afya Muhimbili.na shughulika na utafiti unaolenga kujua aina ya huduma mnayotoa kwa mgonjwa sehemu/eneo ya ajali.

Dhumuni la utafiti

Utafiti unalenga katika kutathimini ubora wa huduma mara baada ya kuumia na kabla mgonjwa hajapelekwa hospital ya majeruhi/rufaa .Huna budi kuhojiwa kama utakubali kushiriki.

Usiri wa maelezo

Unahakikishiwa kwamba maelezo utakayotoa yatakuwa ni siri, na maelezo yako yatahifadhiwa kwenye komputer kwa kutumia namba ya utambulisho na siyo jina lako.

Madhara

Hakuna madhara yoyote utakayo pata kwa wewe kushiriki katika utafiti huu.

Faida

Tunatumaini kwamba maelezo utakayotoa yatatusaidia na kuisaidia idara yako kuboresha huduma mara mtu anapoumia au kupata ajali.

Haki zako

Unaruhusiwa kujiuzulu kushiriki kwenye mahojiano au kutojibu swali fulani na wakati wowote. Kukataa kwako kushiriki katika kujaza dodoso hakutokufanya ukose huduma unayostahili mahala pako pa kazi .

Mawasiliano

Kama una maswali kuhusiana na huu utafiti unaweza kuwasiliana na Bertha Matiya,Chuo kikuu cha tibaMuhimbili,P.O BOX 65004,Dar-es-salaam. Kama una maswali kuhusu haki zako kama mshiriki waweza kuwasiliana na Prof. E.Lyamuya, mwenyekiti wa kamati ya utafiti ya chuo kwa anuani ifuatayo P.O BOX 65001,Dar-es-salaam. Na kwa simu namba: 2150302-6.

Makubaliano ya ushiriki

Mimi.....(mwenye utambulisho kwa namba).....Umri…….....ninakubali kushiriki kwenye utafiti ambao unahusu kutathmini huduma ninayotoa wakati wa ajali kwa majeruhu ndani ya saa 1 ili mradi maelezo nitakayotoa yatakuwa siri. Ruhusa inatolewa kwa makubaliano kwamba maelezo kutoka kwenye dodoso yatatumika kwa ajili ya utafiti tu na mtafiti husika,ninaelewa dhumuni la utafiti pia faida na madhara ya utafiti nimefahamishwa.

Mshiriki_____ Mtafiti_____

Tarehe _____ Tarehe_____

APPENDIX II:

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF POSTGRADUATE STUDIES

P.O. BOX 65001
DAR-ES-SALAAM
TANZANIA
Telefax: 255-022-2150465
Telegrams: UNIVMED

E-MAIL dpgs@muhas.ac.tz
TEL: (255-022)-2150302-6 Ext. 207
Direct line: 2151378

Ref.No. MU/PGS/SAEC/Vol. IV/39

April 14, 2010

Bertha Matiya
MSc Critical Care and Trauma,
School of Nursing,
MUHAS.

RE: **APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED: ASSESSMENT OF KNOWLEDGE AND PRACTICE ON PRE HOSPITAL TRAUMA CARE AMONG TRAFFIC POLICE IN DAR ES SALAAM REFERENCE IS MADE TO THE ABOVE HEADING.**

I am pleased to inform you that, the Chairman has on behalf of the Senate approved ethical clearance for the above-mentioned study.

By this letter, ethical clearance is granted for you to proceed with the planned study.

Please liaise with bursar's office to obtain your research fund.

Prof Z.Premji
DIRECTOR, POSTGRADUATE STUDIES

c.c. Vice Chancellor, MUHAS
c.c. Deputy Vice Chancellor – ARC, MUHAS
c.c. Dean, School of Nursing, MUHAS
c.c Supervisor

APPENDIX III:

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

Bertha Matiya,
P.O Box 65004,
Dar es Salaam.
20th April, 2010.

Inspector General of Police,
P.O Box 9140,
Dar es Salaam.

u.f.s Dean,
School of Nursing,
MUHAS.

kindly assist
The researcher is a
pursuing Nursing

DEAN
(MUHAS)
P.O.Box 65004
DAR ES SALAAM
Date 21st Apr 2010
SCHOOL OF NURSING

Dear Sir/madam,

REF: REQUEST FOR PERMISSION TO CONDUCT RESARCH AT KINONDONI, ILALA AND TEMEKE MUNICIPAL.

Please refer to the above heading.

I am a postgraduate student **(Reg. No. HD/MUH/T.96/2008)** taking a Master of Science in Critical Care and Trauma Nursing at Muhimbili University of Health and Allied Sciences.

I kindly request to conduct research at Kinondoni, Ilala and Temeke Municipal titled ***"Assessment of Knowledge and Practice on Pre-hospital Trauma Care among Traffic Police in Dar es salaam"***. The research is a partial fulfillment of the Master Degree program. The knowledge part of the study will be assessed using structured questionnaires while part of practice will be assessed using simulation guide questions and equipment review check list. The study is expected to take one month.

I hereby attach the copy of the introduction letter from the Director of Postgraduate Studies at Muhimbili University of Health and Allied Sciences which shows that the study has been reviewed and recommended by the Chairman of the University Research Ethics Committee.

I thank you for consideration of my request.

Sincerely
Bmatiya
Bertha Mativa

APPENDIX IV:

JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA MAMBO YA NDANI YA NCHI
JESHI LA POLISI TANZANIA

Anwani ya Simu: "MKUUPOLISI"
Numbari ya Simu: (022) 2110734
Unapojibu tafadha li taja:

OFISI YA INSPEKTA JENERALI,
MAKAO MAKUU YA POLISI,
S.L.P. 9141,
DAR ES SALAAM

Kumb. Na. PHQ/17/VOL II/143 05 Mei, 2010

Kamanda wa Polisi
Kikosi cha Afya
DAR ES SALAAM

YAH: MAOMBI YA KUFANYA UTAFITI (RESEACH)
NDUGU BERTHA MATIYA

Kichwa cha habari hapo juu chahusika.

Inspekta Jenerali wa Polisi ameridhia mtajwa hapo juu kufanya utafiti katika idara ya Polisi ili aweze kumalizia shahada yake ya Uzamili.

Tafadhali mpe msaada unaohitajika.

Abdulrahman O. J. Kaniki – SACP
KNY: INSPEKTA JENERALI WA POLISI
INSPEKTA JENERALI WA POLISI
TANZANIA

APPENDIX V:

JAMHURI WA MUUNGANO WA TANZANIA
WIZARA YA MAMBO YA NDANI YA NCHI
JESHI LA POLISI TANZANIA

Anwani ya Simu:
Nambari ya Simu:2851519/2850029
UnapojibuTafadhaliTaja

MKUU WA POLISI,
KIKOSI CHA AFYA
S.L.P. 9791
Dar es Salaam.
Tanzania.

Kumb. Na. MSU/HQ/A.13/I/VOL.XIII/132 07/05/2010

Kamanda wa Polisi
Traffic kuu
DARES SALAAM

YAH: MAOMBI YA KUFANYA UTAFITI (RESEACH)
NDUGU. BERTHA MATIYA

Tafadhali husika na somo tajwa hapo juu,

Ndugu mtajwa hapo juu ni Mwanafunzi anayesoma Shahada ya Uzamili katika Chuo Kikuu cha Tiba Muhimbili. Aliomba ruhusa kufanya utafiti katika Idara ya Polisi upande wa Traffic.

Kwa barua kumb. Namb,PHQ/17/VOL.II/143 ya tarehe 05/5/2010 IGP alitoa ruhusa na kumtuma kwetu ili afanye Utafiti huo.

Kwa barua hii ninamtuma kwako aweze kufanya utafiti wake.Naomba apewe ushirikiano.

S.F. MSUYA ACP,
KAMANDA WA KIKOSI CHA POLISI AFYA (T)

KAMANDA
KIKOSI CHA AFYA CHA POLISI
S. L. P. 9791
DAR ES SALAAM

Nakala : Polisi Kanda Maalum
Polisi Ilala
Polisi Kinondoni
Polisi Temeke

APPENDIX VI:

JAMHURI YA MUUNGANO WA TANZANIA
WIZARA YA MAMBO YA NDANI YA NCHI
JESHI LA POLISI TANZANIA

Tel. no: 2110487
E-mail: traffpoldsmz@yahoo.com
Website: www.police force.go.tz
Unapojibu tafadhali taja:
Kumb:Na. DSMZ/TR/A.13/3/173

OFISI YA MKUU POLISI,
USALAMA BARABARANI,
KANDA YA D'SALAAM,
S. L. P. 1712,
DAR ES SALAAM.

May 10, 2010

Wakuu wa Usalama barabarani,
Mikoa ya Ilala, Kiunondoni na Temeke,
DAR ES SALAAM.

YAH: MAOMBI YA KUFANYA UTAFITI (RESEARCH)
NDG BERTHA MATIYA

Tafadhali husika na somo tajwa hapo juu.

Pamoja na barua hii, nawatumieni kivuli cha barua Kumb. MSU/HQ/A.13/I/VOL.XIII/132 ya tarehe 07.05.2010 toka Polisi kikosi cha afya kumhusu ndg. Betha Matiya kwa hatua zenu muhimu.

Mpatieni msaada ili asambaze dodoso kwa askari wa Usalama barabarani waliopo kwenye Mikoa yenu.

Nawasilisha tafadhali.

(V.M.NIKATA - ACP)
MKUU WA USALAMA BARABARANI KANDA MAALUM
DAR ES SALAAM.

MKUU WA USALAMA BARABARANI KANDA MAALUM YA POLISI DAR ES SALAAM

Nakala: Kamanda wa Kikosi

APPENDIX VII:

1.0 ENGLISH QUESTIONNAIRES

Instruction:

This questionnaire has questions in relation to participant's demographic data, knowledge and practice relates to basic life support of trauma patient. Read question carefully and answer accordingly.

Form no: _____

1.1 Demographic and knowledge

1.1.1 Demographic

1. Place of working Police post (**circle correct one**)

    1) Temeke

    2) Ilala

    3) Kinondoni

2. Age (**Fill years in the blank**).....

3. Rank (**Fill the blank**).....

4. Educational level (**circle correct one**)

    1) Certificate

    2) Diploma

    3) Advance diploma

    4) Degree holder

    5) Others **(specify-Fill the blank)** .....

5. Working experience

(Fill the blank in terms of months or years) .....

6. Have you ever cared for injured patient at the Scene? **(Circle correct response)**

   1) **Yes**

   2) **No**

7. If **YES** in number **6**, when was the last? **(Specify in the blank)**

   .....

1.1.2. Knowledge assessment.

Follow instructions; select one correct answer given under each question by '1','2' and '3'.

1. How can you know if the victim is severely injured? **(Circle correct one)**

   1) Shouting of pain

   2) Difficulty in breathing

   3) Loss of consciousness and slow heart beat

2. During quick assessment of the injured patient what should you immediately check? (Circle **correct response**)

   1) Airway is open /patent

   2) Breathing- chest movement up and down.

   3) Blood vessels beating for circulation

3. How can you know if the victim is in shock? **(Circle correct response)**

   1) Fast heart beats / rapid pulse

   2) Cold skin and bluish

   3) Warm and pink skin

4. In which victim can you suspect neck and back injury? **(Circle correct one)**

   1) Patient with extremities bleeding

   2) Crush injuries with multiple traumas of trunk

   3) Loss of consciousness

APPENDIX VII:

1.0 ENGLISH QUESTIONNAIRES

Instruction:

This questionnaire has questions in relation to participant's demographic data, knowledge and practice relates to basic life support of trauma patient. Read question carefully and answer accordingly.

Form no: _____

1.1 Demographic and knowledge

1.1.1 Demographic

1. Place of working Police post (**circle correct one**)

    1) Temeke
    2) Ilala
    3) Kinondoni

2. Age (**Fill years in the blank**).....

3. Rank (**Fill the blank**).....

4. Educational level (**circle correct one**)

    1) Certificate
    2) Diploma
    3) Advance diploma
    4) Degree holder
    5) Others **(specify-Fill the blank)** .....

5. Working experience

(Fill the blank in terms of months or years) .....

6. Have you ever cared for injured patient at the Scene? **(Circle correct response)**

   1) **Yes**

   2) **No**

7. If **YES** in number **6**, when was the last? **(Specify in the blank)**

   .....

1.1.2. Knowledge assessment.

Follow instructions; select one correct answer given under each question by '1','2' and '3'.

1. How can you know if the victim is severely injured? **(Circle correct one)**

   1) Shouting of pain

   2) Difficulty in breathing

   3) Loss of consciousness and slow heart beat

2. During quick assessment of the injured patient what should you immediately check? (Circle **correct response**)

   1) Airway is open /patent

   2) Breathing- chest movement up and down.

   3) Blood vessels beating for circulation

3. How can you know if the victim is in shock? **(Circle correct response)**

   1) Fast heart beats / rapid pulse

   2) Cold skin and bluish

   3) Warm and pink skin

4. In which victim can you suspect neck and back injury? **(Circle correct one)**

   1) Patient with extremities bleeding

   2) Crush injuries with multiple traumas of trunk

   3) Loss of consciousness

5. The following can help you to assess level of consciousness to trauma and injured patient (**Circle correct one**)

1) Check for color appearance
2) Check for movement of body part and eye opening
3) Check for bleeding and pain

6. List the topics you undergo during pre-hospital study

1) Care of Airway
2) Protection of spinal cord and neck
3) Control hemorrhage

6. Have you ever learned pre hospital care or first aid during your training?
(Circle correct response)

1) **Yes**
2) **No**

7. If **YES** in number 6, where did you attend? (**Circle correct response**)

1) During training
2) In-service training or on job training
3) Others **(Specify)**.....

9. When was the last attendance or training on pre hospital/ fist aid to trauma victim?
(**Fill the blank in terms of weeks, month or years)** ----------

10. Have you ever had in-service training on pre hospital care/first aid?
(circle correct response)

1) **Yes**
2) **No**

11. If **YES** in number 10 for how long. (**Fill the blank in terms of weeks, month or years**)

.....

1.2. Simulation- Review guide questions for Practice and skills

Scenario:

Read the below situation then answer the following questions according to your understanding.

During your working hours you receive a call concerning motor accident. The accident is real bad. It is vehicle collision causing crush injuries whereby some of the victims lost their life on the spot, some are severely injured, some victims have open broken bone with severe bleeding, others have been hit on their chest with difficulty in breathing and others have back and neck injuries. You as a first responder with the resources you have, you are supposed to give them first aid to serve their life.

1. What are you going to do first? **(Circle correct response)**
    1) Quick checks of surround for safety
    2) Secures the area,
    3) Rush victim to hospital for quick assistant

2. On attending the unconscious victim, with no neck injury, what are you going to do? **(Circle correct response)**
    1) Allow air entry by chin lift and head tilt
    2) Remove victim cloth to allow free air
    3) Quick rush to the hospital

3. How can you identify if victim is breathing? **(Circle correct response)**
    1) Check on chest movement up and down
    2) Palpate or check if neck big blood vessel is beating
    3) Check for movement

4. How to check if victim's heart is beating or not? **(Circle correct response)**

1) Palpate to feel big blood vessels beating at the neck
2) Check on chest movement up and down
3) Check on bleeding status

5. The victim is having big cuts on his leg with severe bleeding, what are you going to do? **(Circle correct response)**

1) To apply bandage or linen at the site
2) Quick rush of victim to the hospital
3) Victim can tell you which part to hold

6. The victim has broken both legs, how can you attend him at the scene? **(Circle correct response)**

1) Stabilize the part using hard board and bandage or linen
2) Two or more people can lift the leg
3) Lie victim on the floor and organize for transport

7. During this accident you find the victim with back and neck injury, how can you handle this victim at the scene? **(Circle correct response)**

1) To roll victim on hard board and apply neck collar
2) To lift victim to the car using more than two people
3) Quick rush of victim to hospital

8. How are you going to shift victim to the hospital? (**Circle correct response)**

1) Ambulance
2) Public transport
3) Others (**Specify-Fill the blank**) ----------

9. In case of an accident, do you think community as one of the first line responders assist in the life saving? **(Circle correct response)**

1) **Yes**
2) **No**

10. If NO in number 9, what do they do?

(Fill the blank according to your experience)

1. .....
2. .....
3. .....

11. If YES in number 9, what do they do?

1. .....
2. .....
3. .....

1.3. Participants opinion:

Give **your opinion** as first responders concerning pre-hospital trauma care/first aid to trauma patients for higher authority to plan for the improvement of this service.

(Fill the numbered blank space according to your views).

No	**Participants opinion to :**	**Opinion**
1.	Goverment concerning care of trauma victim at the scene	1. 2. 3.
2.	Opinion to your seniors on in-service training	1. 2. 3.
3.	Your opinion concerning care of trauma to traffic police when on college	1. 2. 3.
4.	Your opinion on educating first aid to the community, civilian car drivers and taxi drivers	1. 2. 3.
5.	Your opinion to the Ministry of health and Ministry of Home Affairs on trauma care at the scene	1. 2. 3.
6.	Your opinion to the community, civilian car drivers and taxi drivers on what to do in case of accident	1. 2. 3.

1.4. English equipment check list

1. Presence of clean gloves. **(Circle correct response)**

1) Yes

2) No

2. Presence of spinal board **(Circle correct response)**

1) Yes

2) No

3. Presence of cervical collar **(Circle correct response)**

1) Yes

2) No

4. Presence of ambulance **(Circle correct response)**

1) Yes

2) No

5. Presence of pre hospital guidelines **(Circle correct response)**

1) Yes

2) No

6. Presence of bandage crepe/cotton **(Circle correct response)**

1) Yes

2) No

7. Presence of scissors **(Circle correct response)**

1) Yes

2) No

8. Presence of first aid kit **(Circle correct response)**

1) Yes

2) No

9. Presence of splint/hard board **(Circle correct response)**

1) Yes

2) No

10. Presence of documentation chart before transfer **(Circle correct response)**

1) Yes

2) No

APPENDIX VIII:
SWAHILI QUESTIONNAIRES

1.0 DODOSO LA KISWAHILI

Dodoso la kutathmini uelewa wa huduma itolewayo kwa majeruhi wa ajali kabla ya kufikishwa hospitalini na askari wa usalama barabarani

Maelezo muhimu:

Dodoso hili ni kwa lugha mbili, Kiswahili na Kiingereza, unaruhusiwa kujaza kwa lugha mojawapo. Limegawanyika katika sehemu tatu, sehemu ya kwanza ni maelezo binafsi na uelewa wako katika kutoa huduma kwa majeruhi mara baada ya ajali, sehemu ya pili ni kuangalia jinsi askari wanavyotoa huduma kwa watu waliopata ajali kabla ya kufikishwa hospitalini na sehemu ya tatu ni kuona vifaa mlivyonavyo kwa ajili ya kutoa huduma kwa majeruhi

Fomu no. _____

1.1 Maelezo binafsi:

Katika kila swali kuna maelezo yakufuata ya kitu cha kufanya,soma kwa uangalifu.

1. Wilaya unayofanyia kazi (**chagua moja na zungushia)**
    1) Temeke
    2) Ilala
    3) Kinondoni

2. Umri wako **(Jaza miaka yako kwenye nafasi uliyopewa)**.....

3. Cheo chako cha sasa (**Jaza cheo chako kwenye nafasi uliyopewa)**.....

4. Elimu yako ya kazi **(chagua jibu sahihi na zungushia)**

1) Cheti
2) Diploma
3) Stashahada
4) Shahada
5) Nyingineyo

5. Uzoefu wako wa kazi **(Jaza miaka uliyofanya kazi hadi leo kwenye nafasi uliyopewa)**

.....

6. Umewahi kuhudumia majeruhi katika eneo la ajali?

1) **Ndiyo**
2) **Hapana**

7. Kama jibu ni **Ndiyo** katika namba 6, ni lini mara ya mwisho ulihudumia?
(Jaza katika nafasi uliyopewa)

.....

1.2 **Uelewa juu ya huduma ya kwanza anayopewa majeruhi kabla ya kumfikisha Hospitalini.** Maswali yafuatayo yana namba **'1' '2'**na **'3'**, chagua jibu sahihi na zungushia kwa kalamu.

1. Utamtambuaje majeruhi aliyeumia sana na mahututi? (**Chagua jibu sahihi na zungushia**)

1) Anapiga kelele kutokana na maumivu
2) Anapumua kwa shida
3) Mtu aliyepoteza fahamu na mapigo ya moyo yapo chini

2. Wakati unafanya uchunguzi wa majeruhi, unapaswa kuangalia yafuatayo

(Chagua jibu sahihi na zungushia)

1) Jinsi majeruhi anavyopumua
2) Jinsi kifua kinavyopanda na kushuka
3) Kuangalia kama mishipa ya damu inapiga

3.Utajuaje kama majeruhi amepoteza fahamu? **(Chagua jibu sahihi na zungushia)**

1) Moyo unapiga haraka haraka ukigusa mshipa wa damu
2) Anakuwa wa baridi na blue kwenye vidole au mdomoni
3) Anakuwa wa moto na ngozi ya kawaida

4.Ni majeruhi yupi unaweza kusema ana uwezekano wa kuumia shingo na uti wa mgongo

(Chagua jibu sahihi na zungushia)

1) Majeruhi anayevuja damu sana miguu au mikononi
2) Majeruhi wa ajali mbaya na kuumia au kuvunjika sehemu nyingi za mwili
3) Majeruhi aliyepoteza fahamu.

5. Utagunduaje kuwa majeruhi yupo mahututi? **(Chagua jibu sahihi na zungushia katika)**

1) Angalia rangi ya ngozi yake inavyoonekana .
2) Angalia kama ana uwezo wa kusogeza sehemu ya mwili na kufungua macho
3)Angalia kama anatoka damu

6. Orodhesha vipindi ulivyosoma wakati wa kujifunza huduma ya kwanza kwa majeruhi;

1) Kumsaidia majeruhi apate hewa na kupumua vizuri
2) Jinsi ya kumhudumia majeruhi aliyeumia mgongo na shingo
3) Kusaidia kuzuia umwagikaji wa damu kwa majeruhi

7. Umeshawahi kujifunza jinsi ya kutoa huduma ya kwanza kwa majeruhi wa ajali kabla ya kufikishwa hospitalini ? **(Chagua jibu sahihi na zungushia)**

   1) **Ndiyo**

   2) **Hapana**

8. Kama jibu ni ndiyo katika swali namba 6 , ulijifunzia wapi ?

   1) Chuoni wakati wa mafunzo

   2) Wakati nikiwa kazini

   3) Taja sehemu nyingine (eleza) .....

9. Ni lini mara ya mwisho ulijifunza kutoa huduma ya kwanza kwa majeruhi wa ajali ?

(Jaza muda uliojifunza katika nafasi uliyopewa) .....

.....

10. Katika sehemu yako ya kazi, huwa mna mafunzo kuhusu huduma kwa majeruhi kabla ya kuwapeleka hospitali **(Chagua jibu sahihi na zungushia)**

   1) **Ndiyo**

   2) **Hapana**

11. Kama ni **ndiyo** katika namba 10, huwa yanafanyika kila baada ya muda gani ?

(Jaza ni kila baada muda gani /miezi au miaka mingapi katika nafasi uliyopewa)

.....

1.2. **Form ya kuangalia uzoefu wako wa kazi**

Hali ya kufikirika eneo la ajali

Soma habari hii na kisha jibu maswali yafuatayo kulingana na unavyoelewa

Wakati ukiwa kazini , umepokea simu kuhusu ajali mbaya ya gari. Magari mawili ya abiria yamegongana ambapo baadhi ya abiria wamepoteza maisha hapo hapo, baadhi wameumia vibaya, baadhi wamevunjika na kumwaga damu sana, na wengine wameumia kifua na kupumua kwa shida na wengine wameumia mgongo na shingo.

Wewe kama mtoa huduma ya kwanza, kwa kutumia vifaa ulivyonavyo, unatakiwa uwape huduma ya kwanza kuokoa maisha yao.

Maswali:

1. Kulingana na mazingira ya ajali hapo juu, ni hatua gani unatakiwa uanze nayo?

    1) Kwa haraka nitaangalia hali ya usalama

    2) Nitaweka mipaka eneo la ajali

    3) Nitamkimbiza majeruhi hospitali kwa huduma ya haraka

2. Wakati unamhudumia majeruhi aliyeko mahututi na hajaumia shingo, ni namna gani utamhudumia?

    1) Nitahakikisha anapata hewa kwa kuinua kidevu

    2) Nitamwondoa nguo majeruhi kumfanya apate hewa

    3) Nitamkimbiza hospitali

3. Utajuaje kama majeruhi anapumua?

    1) Nitaangalia kama kifua kinapanda na kushuka.

    2) Nitamgusa kuangalia kama mshipa mkubwa wa damu wa shingo unadunda.

    3) Nitamwangalia kama anaweza kujisogeza

4. Ni jinsi gani utaangalia kama majeruhi mapigo yake ya moyo yapo au hakuna?

    1) Utagusa mshipa mkubwa wa shingo kusikia kama unadunda.

    2) Nitaangalia kama kifua kinapanda na kushuka

    3) Nitaangalia kama anatoka damu

5. Wakati unhudumia umegundua majeruhi anamajereha makubwa yanayovuja damu sana, ni jinsi gani utamhudumia?

    1) Nitamfunga bandeji au kitambaa katika majeraha

    2) Nitamkimbiza majeruhi hospitali kuokoa maisha yake

    3) Nitamlaza chini na kufanya mpango ya usafiri

6. Pia umegundua majeruhi aliyevunjika miguu yote. Ni jinsi gani utamhudumia?

    1) Nitamfunga ubao na bandeji miguu kuzuia mtikisiko

    2) Tutambeba na watu wawili au zaidi mpaka kwenye gari

    3) Nitamlaza chini na kufanya mpango wa usafiri

7 Katika ajali hii umegundua majeruhi aliyevunjika shingo na kuumia mgongo. Ni jinsi gani utakavyomhudumia?

1) Nitatumia ubao mgumu na bandeji kuzuia mtikisiko wa miguu.
2) Nitambeba na watu wawili au zaidi mpaka kwenye gari .
3) Nitamkimbiza hospitali

8) Ni usafiri gani utatumia kumsafirisha majeruhi kwenda hospitali?

1) Ambulance
2) Magari ya abiria
3) Nyingineyo (eleza)

9) Mara nyingi kunapotokea ajali jamii wanakuwa mstari wa mbele sehemu ya ajali kama watoa huduma ya kwanza. Je! Wanasaidia katika uokoaji wa maisha ya majeruhi?

1) Ndiyo
2) Hapana

10) Kama jibu ni **Ndiyo** katika swali la 9, wanasaidiaje majeruhi?

1).....
2).....
3).....

11) Kama jibu ni **hapana** katika swali la 9, wanafanya nini sehemu ya ajali?

1).....
2).....
3).....