ASSESSMENTS OF THE IMPACT OF ROAD TRAFFIC ACCIDENT VICTIMS ON THE HEALTH CARE DELIVERY AND PREPAREDNESS AT AMANA HOSPITAL, ILALA MUNICIPALITY. DAR ES SALAAM

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ASSESSMENT OF THE IMPACT OF ROAD TRAFFIC ACCIDENT VICTIMS ON THE HEALTH CARE DELIVERY AND PREPAREDNESS AT AMANA HOSPITAL, ILALA MUNICIPALITY, DAR ES SALAAM.

By

Mwanahamisi Hassan

A Dissertation submitted in partial fulfillment of the requirements for the Masters Degree of Arts in Health Policy and Management of Muhimbili University of Health and Allied Sciences

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January, 2013

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance of dissertation entitled ***Assessment of the impact of road traffic accident victims on the health care delivery and preparedness at Amana Hospital, Ilala Municipality, Dar es Salaam*** in partial fulfillment of the requirements for the degree of Master of Arts in Health Policy and Management of Muhimbili University of Health and Allied Sciences.

_____

Prof.C.M. KIHAMIA

(Supervisor)

Date: _____

DECLARATION

AND

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I wish to acknowledge, with thanks, the support and assistance of the District Medical Officer and staffs at Amana hospital. Last but not least I would like to thank my colleagues with whom I shared ideas for their moral support.

DEDICATION

This work is dedicated to my beloved mother for her love, care and support and to my husband and our handsome son.

ABSTRACT

Introduction: Road traffic injuries are on increasing in developing countries this leads to a negative impact in service provisions especially in resource constrained countries like Tanzania. Road traffic accidents exert a large burden on Tanzania's health care services. Health care facilities are poorly equipped to provide needed services. The broad objective was to assess the impact of road traffic accident victims on health care delivery and preparedness of the Amana hospital

Methods: A cross-sectional descriptive study using interviews, observations and review of attendance register for OPD. The study was conducted at Amana hospital in Ilala Municipality in Dar es Salaam. Sampling was not done; instead all head of sections handling RTA cases were interviewed.

Results: The study has revealed an upward trend of motor traffic accidents victims attended at Amana hospital from July to December 2011. This trend has imposed heavy work load to the hospital especially to health personnel. The bed occupancy rate for RTA cases was 500% indicate that the surgical ward section allocated for RTA cases was highly overloaded. Eighty six percent and 73%of supplies and equipments were respectively available. These results indicate that the facility was fair prepared to handle trauma cases from road traffic accidents because most of the items needed for management of injuries were available. Seventy one percent and 80% of infrastructure and personnel were respectively available. This indicates that Amana hospital was adequately staffed to handle the majority of RTA Cases.

Conclusion: RTA is still a public health problem at Amana hospital. Much needs to be done to slow or reverse the trend by; a)ensuring uninterrupted supplies; availability of adequate equipment ,infrastructure and trained personnel b)) To ascertain the number of beds to be allocated for RTA cases,

ABBREVIATIONS

CBOs	Community Based Organizations
DMO	District Medical Officer
FBO	Faith Based Organization
MO	Medical Officer
MoHSW	Ministry of Health and Social Welfare
MTA	Motor Traffic Accident
NGOs	Non Government Organizations
RA	Research Assistant
RTA	Road Traffic Accident
SPSS	Statistical package for social science
TNRSC	Tanzania National Road Safety Council Report
WHO	World Health Organization

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CHAPTER ONE: INTRODUCTION

1.1 Background Information

Road traffic accidents (RTA) are a current global development epidemic. The World Health Organization (WHO) estimates that road traffic accidents cause over 1.2 million deaths and about 50 million people are injured per year (WHO, 2009: 5). Developing countries account for over 85% of the deaths and close to 90% of disability is caused by RTAs globally (Krug, 1999; Astrom *et al.* 2006).

Expansion in road network, motorization and urbanization in the country has been accompanied by a rise in road traffic accidents leading to road traffic injuries (RTIs) and fatalities as a major public health concern. Today road traffic injuries are one of the leading causes of deaths, disabilities and hospitalizations with severe socioeconomic costs across the world (Sensarma *et al.,* 2011). The problem of road traffic accidents is increasingly becoming a threat to public health and national development in many developing countries .Tanzania, a developing country in Africa, has witnessed at least a fivefold rise in recorded traffic-related fatalities during the last decade (Museru *et al.*, 2002).

Within mainland Tanzania, the regional distribution of road traffic accidents shows that about 35% of all road traffic accidents in Tanzania occur in the Dar es Salaam region. This is likely to be due to the high concentration of motor vehicles, commercial, industrial and social activities relative to the other regions. (Rwebangira *et al.,* 1999).

As a result emergency medical facilities are faced with shortage of human resources, inadequate infrastructure, and shortage of equipment and an irregular supply of drugs to handle the rising number of road crash victims (Naddumba, 2008). For the hospital to adequately handle RTA cases up to date data on trends and impact of RTA cases on hospital resources is needed. In addition, opinion of health workers on their ability to handle RTA cases is also needed. At the time of designing the current study the literature search could not find the published reports on the impact of road traffic accident on health care delivery and opinions of health workers on their preparedness to handle MTA cases at Amana hospital.

Therefore the aim of the current study was to determine the impact of road traffic accident on health care delivery and opinions of health workers on their preparedness to handle MTA cases at Amana hospital. The findings of current study would enable decision makers of the hospital a) To ascertain the number of beds to be allocated for RTA cases; b) the required personnel to handle RTA cases and c) supplies, equipments and infrastructure that can allow uninterrupted handling of RTA cases during the current year.

1.2 Literature Review

Opinions from Health workers

In Africa

Macharia et al 2009 conducted study on perceived level of preparedness of hospital staff in private, faith-based and public hospitals in Kenya. Only 40.8% of interviewed health workers were of the opinion that their hospitals were ready to handle the trauma cases. Majority of those who reported that their hospitals were well prepared to handle RTA cases were from private and mission hospitals that handle only 28% of RTA cases. This indicate that majority of RTA cases were attended at public hospitals where the health workers perceived that there were not well prepared to handle RTA cases. Therefore the levels of preparedness were adversely affected by limited supplies.

In a study conducted in Ghana 2012 health workers were of the opinion that the hospitals had adequate infrastructure and equipments but had lack of competent medical and allied health personnel and adequate supplies. Therefore their level of preparedness was hindered by the lack of competent health workers and shortage of supplies.

Other countries

A study conducted in Iran by Bidgon et al 2010 shows that deficiency and maldistribution of resources were viewed as an important barrier for providing effective pre-hospital trauma care. The factors that contributed to resource deficiency and inadequacy were described as

short supply of professional staff, ambulances and dispatch sites, lack of necessary equipment in the ambulances (e.g. defibrillator and monitoring equipments), lack of rescue equipment in the ambulances, and lack of some drugs (e.g. painkillers

Trends of RTA

In Tanzania

In the Tanzania Annual Convection Report of 2005 RTAs victims were 7435 in 1980 and 15831 in 2000, indicating the increase of 8396 RTA victims over a period of 11 years. In Mosha E.P and Musilimu F.M publication of 2005 the numbers of RTAs for the year 2001 were 13,434 and in 2003 were 18,980 indicating the increase of 5,546 RTA victims over a period of 3 years.

A studies conducted in different parts of Tanzania indicate similar trends except Moshi-Arusha highway data of 2000-2004 which showed no marked increase in number of RTA cases over the period under study (Ngallaba S.E 2005, Dattan P 2005, Temu *et al* 2005). Ngallaba reported the rise in the number of RTA victims from 130 in 2001 to 339 in 2003, attended at Bugando Medical Center, Mwanza City. The number of RTA victims attended at Tumbi special hospital at Kibaha township that cater for RTA victims occurring along Dar es Salaam-Morogoro highway were 427 in 2001 and 899 in 2003 indicating a two-fold increase in number of RTA cases over the period of three years. This data indicates an increase of 209 and 462 of RTA victims over a period of 2 years for Bugando and Tumbi hospitals respectively.

Other developing countries

In Kenya the National figures for RTA during the period of 2007-2009 reveal no increase in trends (Kenya National Bureau of statistics and Traffic police 2009). A study by Mohammed *et al.* (2010) reported that motor traffic accidents are still a major public health problem with increasing rates of mortality and morbidity in Saudi Arabia. This led to the socioeconomic burden, depletion of human resources and the strain on health care facilities. A study from Turkey shows that RTA increases from 160 per 100,000 populations in 2001 to 260 per

100,000 populations in 2009. Study for Brazil 2011 the number of hospital admission resulting from RTAs increased by 9% from 108,988 in 1989 to 123,168 in 2009

In developed countries

In developed countries studies indicate downward trend in RTA. Data for 2009-2010 In UK indicate a 6% in RTA (Annual report department for transport) while in Ireland the number of RTAs for 1996/1997 was 286 and for 2006/2007 was 88. (Solon *et al* 2012). Nevertheless, a study done in China reported that with increased motorization, leading to road congestion, road traffic accidents have been associated with increased road trauma. China as a rapidly industrializing country has started to experience this problem to a massive scale, which was non-existent before- (Robert, 1995).

Bed occupancy;

In2003 Museru *et al* reported bed occupancy rate for trauma cases of 140% at Muhimbili Orthopaedic Institute Tanzania. The monthly hospital data in one of the New Delhi trauma hospital shows that the bed occupancy rate for trauma cases in September 2012 was 150% (Saxena *et al* 2012). In Bangladesh the study shows that the bed occupancy rate for trauma cases in September 2001 was 79.75% (Rahman *et al* 2012). Tamimi *et al.*1980 reported bed occupancy in surgical wards to be 48% in one of the trauma hospital in Saudi Arabia.

Resources to handle RTA

Equipments and Supplies

In most countries the resources to handle RTA cases were far from adequate. Norman et al 2012 conducted study in Ghana among 22 district and regional health facilities including teaching hospitals. The findings of their study indicated that many of the nation's hospitals were not prepared for large RTA's surge demands, and did not possess general emergency preparedness programs. The hospitals' respective abilities to handle large scale RTA's were

compromised, among others, by the lack of adequate supplies. In most cases only 72.7% of essential equipments and 50% of supplies were available (Norman *et al* 2012).

These findings differ from those reported in Kenya by Macharia *et al* 2009. In their study, (Macharia *et al* 2009) involving 53 large and medium size private, faith-based and public hospitals in Kenya, in-patient road traffic crash casualties and health personnel in the selected hospitals were interviewed on availability of emergency care and resources. Sixty percent of government hospitals lacked essential supplies necessary for handling road traffic accident Cases.

In the availability of equipments and supplies for RTA cases were reported to be far from adequacy. Following the extensive literature review of published and other reports from the government offices in Uganda, Nandumba (2008) concluded that patients with musculoskeletal injuries in Uganda repeatedly failed to receive immediate care due to inadequate resources and most were treated by traditional bonesetters.

Personnel

Norman *et al* 2012 in Ghana reported that the facilities scored below average marks in terms of the availability of personnel except for laboratories personnel. Study done mostly in district hospitals in Africa including Tanzania shows that these health facilities had an adequacy to handle RTA Cases. Odero *et al* 2003 conducted a study in Kenya where the results indicated that inadequate qualified personnel to handle RTA Cases.

Infrastructure

Ehiri HZ 2001 conducted a study in developing countries where the results indicated that the public health facilities have poorly developed trauma care systems and nonexistent social welfare infrastructures to accommodate the needs of the injured cases. Nantulya and Reich 2003 conducted a study in Kenya where the results indicated inadequacy of the public health infrastructure in providing treatment for RTA Cases. Kingham *et al* 2009 conducted a study on 10 of the 17 government civilian hospitals in Sierra Leone. There were severe shortages of infrastructure required for delivering surgical care of RTA Cases. Similar findings were reported by Hassan *et al.* (2011) in Iran reported the findings indicated lack of appropriate

structure of the hospital and rapid increase in the number of traumas that led to the ineffectiveness of trauma care delivery at Emergency department in Iran.

At the time of designing the current study the literature search could not find the published reports on the impact of road traffic accident on health care delivery and opinions of health workers on their preparedness to handle MTA cases at Amana hospital.

1.3 Statement of the Problem

Road traffic accidents are a serious and rapidly growing problem throughout the world, in social, health and economic terms. Injuries due to RTA affect not only the immediate victim, but also the health facilities in general. For example, the provision of surgical services in low-income countries is inadequate compared to the need due to shortage of health workers and constrained health budget. (Kruk *et al*, 2010). In Sub-Saharan Africa including Tanzania, with increasing vehicular traffic, RTI have become an immense health problem and constitute a burden to the under-funded and oversubscribed health services (Norberg, 2000 and Bener, 2005). In Tanzania, road traffic accidents rose by 48% from 1977 to 2008. During this period a total 379,699 road traffic accidents occurred in the country, killing 48,754 people and leaving 347,657 persons injured.

From health services delivery perspective, causalities from road traffic accidents impose a heavy burden on the specialized health care facilities. The hospital resources are scarce as they are overwhelmed and this interferes with the normal supplies and overall health care delivery. Despite of all the ongoing efforts to implement road safety initiatives, the situation is worsening and alarming (Tanzania Annual Road Convection Report, 2005)

The management of ever-increasing numbers of RTA cases in Tanzania is likely to have a pause on a great challenge to hospitals. For the hospital to able to plan efficient care of RTA cases, up-to-date data on trends of RTA, the impact of RTA in terms of proportion of RTA cases to total OPD cases, bed occupancy rate and availability of personnel, equipments, supplies and infrastructure required to handle RTA cases is essential. In addition, opinion of

workers on their preparedness to handle RTA cases is also required because perceptions do influence on action to take.

At the time of planning the current study, the impact of road traffic accident on health care delivery was not known and opinions of health workers on their preparedness to handle MTA cases also not known at Amana hospital. Therefore this study sought to fill the gap of knowledge which exists by identifying the impact of road traffic accidents on the health care delivery and opinions of health workers on their preparedness to handle MTA cases at Amana hospital.

1.4 Rationale of the Study

The current study determined the impact in terms of proportion of RTA cases to total OPD cases, bed occupancy rate and availability of personnel, equipments, supplies and infrastructure required to handle RTA cases is essential. In addition, opinion of workers on their preparedness to handle RTA cases is also required because perceptions do influence on action to take. The findings of current study would enable decision makers of the hospital a) To ascertain the number of beds to be allocated for RTA cases; b) the required personnel to handle RTA cases and c) supplies, equipments and infrastructure that can allow uninterrupted handling of RTA cases during the current year.

1.5 Research Questions

In order to achieve the goal of the research, the study was guided by the following questions:

1. What is the opinion of the heads of sections on their ability to handle RTA cases?
2. What is the impact of RTA to the hospital services?
3. Does the hospital have necessary resources to handle RTA cases?

1.6 Research Objectives

1.6.1 Broad Objective

The broad objective was to assess the impact of road traffic accident victims on health care delivery and preparedness of the Amana hospital

1.6.2 Specific objectives: The specific objectives were:

1. To assess the opinion of heads of sections on ability of their sections to handle RTA cases
2. To determine the proportion of RTA cases to total OPD cases
3. To determine the bed occupancy rate for RTA cases
4. To determine the availability of supplies, equipment, infrastructure and personnel required to handle RTA cases.

CHAPTER TWO: METHODOLOGY

2.1 Study design

This was a cross-sectional descriptive study using interviews, observations and review of attendance register for OPD.

2.2 Study Area

The study was conducted at Amana hospital in Ilala Municipality in Dar es Salaam. The area was chosen based on previous study results which noted that Dar es Salaam is the largest city and smallest region in Tanzania but recorded the highest number of RTA cases in 2003 (Ngallaba SE2005,Dattan P 2005 and Mosha et al 2005**)**.

Amana Regional hospital is located at the Central Zone of Dar Es Salaam City along the Uhuru Street in Ilala Ward. It serves the population of approximately 1,420,000 as per 2009 Census projection. The hospital serves the vital business areas like Kariakoo markets, Harbours, Railways, several highways like Nyerere road, Mandela road and Kawawa road. The hospital has an authorized bed capacity of 350 with inpatients per day ranging from 300 – 350. In addition, the outpatient attendance ranges between 850 – 1807 daily and 10 departments. There are about 387 hospital workers, among them there are 6 specialists, 3 medical doctors, 46 assistant medical officers, 11 clinical officers and 159 nurses.

2.3 Study Materials and study population

Inventory of available equipment and supplies necessary for managing RTA cases and patients records of OPD for the months of July to December 2011 constituted the study material. Heads of section handling RTA cases were selected to ascertain the ability of the section to handle RTA Cases, suggest for improvement, and to give their opinion on whether the RTA was a significant problem at the hospital.

2.4 Sampling Techniques and Sample size

Sampling was not done; instead all head of sections handling RTA cases were interviewed. These were Hospital Secretary, Matron of the Hospital, Doctor In-charge of Casualty,

Laboratory technician In-charge of the Blood Transfusion Unit, Radiographer In-charge of X-ray department, Traumatologist In-charge, Nurse In-charge of casualty and Trauma ward In-charge. The available equipment and supplies necessary for managing RTA cases, and patient's records of OPD for the months of July to December 2011 constituted the study material.

2.5 Data collection and Analysis

Data collection: The researcher held face to face discussion with each head of the section about the ability of the section to handle RTA Cases, suggestions for improvement and whether the RTA was a significant problem in the hospital. The guiding questions were on availability of space to accommodate RTA cases, health personnel to manage these case, 24 hours radiological services and adequate medical supplies. Records of patients who where attended by the emergency department during the months of July to December 2011 were retrieved from hospital records department. Total number of OPD Cases, number of RTA Cases and number of RTA Cases admitted were extracted. A checklist of essential equipment, supplies, and personnel required to handle RTA Cases (Appendix II) was used to countercheck the availability of the same at Amana hospital.

Data analysis The impact of road traffic accident to Amana hospital was determined using two measures: 1) proportion of RTA case to total OPD cases; and 2) bed occupancy rate. Proportion of RTA cases to total OPD cases was computed by dividing respective monthly RTA cases to total monthly OPD cases. The registry department had records for monthly admission only. The researcher therefore could not get the daily RTA admission for RTA cases. To compute bed occupancy rate (a) the total number of RTA admissions in each month was multiplied by 4 (average number of days which RTA cases were admitted at Amana hospital) to get the total number of bed-days in a month; (b) the total number of bed-days in each month was divided by the number of days in that month to get the number of beds required by the hospital to handle the RTA cases that were admitted in each month; then (c)

the number of beds required by the hospital to handle the RTA cases was divided by 3 (the number of beds set aside for RTA cases).

In addition the availability of supplies required to handle RTA cases were assessed by dividing the total number of available supplies items to the total number of supplies items required and multiplied by a hundred to get the percent available. The same computation was done to equipments, infrastructure and personnel.

Ethical consideration

Ethical clearance was granted by Muhimbili University of Health and Allied Sciences (MUHAS) research and publication committee (See Appendix VI). Formal request for permission to study in the municipal was obtained from the District Executive Director (DED) and District Medical Officers (DMO).

All participants were informed about the purpose of the study and informed consent was obtained for participation as well as for recording of interviews.

CHAPTER THREE: RESULTS

All heads of section responsible for handling the RTA Cases were of their opinion that there sections were not well prepared to handle RTA Cases. The main shortfalls cited included insufficient supplies, equipment and trained health personnel. Suggestion for improvement included: ensuring uninterrupted supplies; availability of adequate equipment and trained personnel. All of them reported that RTA was a significant medical problem at Amana hospital requiring attention, and that it was on increase.

Table 1 shows the monthly OPD Cases, RTA Cases and Percent RTA Cases to total OPD Cases attended at Amana Hospital OPD during the month of July –December 2011. The trends of the motor accident victims attended at Amana hospital as from July to December 2011 has been increasing. The burden of RTA Cases to OPD as measured by the percent RTA Cases to total OPD Cases varied from 2.3% to 2.9 % during the six months of the study.

Table 1: Monthly OPD Cases, RTA Cases and Percent RTA Cases to total OPD Cases attended at Amana Hospital OPD during the month of July –December 2011

Month	OPD Cases	RTA Cases	% RTA Cases to total OPD Cases
July	13744	313	2.3
August	12657	320	2.5
September	11894	303	2.5
October	13076	312	2.4
November	12404	343	2.6
December	13549	387	2.9
TOTAL	**77324**	**1978**	**2.6**

Table 2: Monthly attendances, admissions and number of beds required to handle admitted RTA Cases at Amana Surgical ward during the month of July-December 2011

Month	RTA Cases	RTA Admitted	# of beds required to handle RTA cases admitted	Bed occupancy rate (%)
July	313	104	14	467
August	320	107	14	467
September	303	101	14	467
October	312	104	14	467
November	343	114	15	500
December	387	129	17	567
TOTAL	**1978**	**659**	**15**	**500**

*NB: Only 3 beds were allocated for RTA Cases; and the average admission time 4days

Table 2 shows the monthly attendances, admissions and number of beds required to handle admitted RTA Cases at Amana surgical ward during the month of July to December 2011. The hospital needed 14 -17 beds to handle RTA cases that needed hospitalization during the period of study against the 3beds that were allocated for trauma cases at the hospital. This was equal to bed occupancy rate for trauma cases of 467%.

Table 3 shows the essential supplies and equipments required for emergency department to handle RTA Cases and their availability at Amana hospital. Overall, 85.7% and 73%of supplies and equipments were respectively available. The missing supplies were pethidine and the missing equipments were tracheostomy set, CT scan machine and defibrillator.

Table 3: Essential supplies and equipments required for emergency department to handle RTA Cases and their availability at Amana hospital

Requirements for emergency department to handle RTA Cases	Availability	Percent available
Supplies		85.7
1. Catheter	Available	
2. Infusion	Available	
3. Pethidine	Not Available	
4. Lignocaine	Available	
5. Sutures	Available	
6.Bandages	Available	
7.X-ray supplies	Available	
Equipments		
1. Monitor	Available	73
2. Defibrillator	Not Available	
3. Ambu bag	Available	
4. Intubation set	Available	
5.Tracheostomy set	Not Available	
6. Oxgen Cylinder	Available	
7. X-ray machine	Available	
8. Ambulance	Available	
9. Stretcher	Available	
10. CT Machine	Not Available	
11. Sunction machine	Available	

Table 4 shows the essential infrastructure and personnel required for emergency department to handle RTA Cases and their availability at Amana hospital. . Overall, 71% and 80% of infrastructure and personnel were respectively available. The missing infrastructures were Triage area and ICU. In respect to personnel, only neurosurgeon was missing.

Table 4: Essential infrastructure and personnel required for emergency department to handle RTA Cases and their availability at Amana hospital

Infrastructure		
1. Triage area	Not Available	71
2. ICU	Not Available	
3. Observation room	Available	
4. Basic OT room	Available	
5. Plaster room	Available	
6.Blood bank	Available	
7. Surgical ward	Available	
Personnel		
1. Clinician in 24hrs	Available	80
2. Radiologist	Available	
3. Neurosurgeon	Not Available	
4. Othorpedic surgeon	1 (50% available)	
5. Anesthesiologist	Available	

CHAPTER FOUR: DISCUSSION

The current study has revealed an upward trend of motor traffic accidents victims attended at Amana hospital from July to December 2011. This trend has imposed heavy work load to the hospital especially to health personnel. RTA victims trends from 1980-2003 shows a steady increase (Traffic report 2005, Mosha E.P &Musilimu F.M 2005). In the Tanzania Annual Convection Report of 2005 RTAs victims were 7435 in 1980 and 15831 in 2000, indicating the increase number of 8396 of RTA victims over a period of 11 years. In Mosha E.P and Musilimu F.M publications of 2005 the numbers of RTAs for the year 2001 were 13,434 and 2003 were 18,980 indicating the increase number of 5,546 of RTA victims over a period of 3 years.

Studies done in different parts of Tanzania indicate similar increases in trends except Moshi-Arusha highway data of 2000-2004 which showed no marked increase (Ngallaba S.E 2005, Dattan P 2005, Temu *et al* 2005). Ngallaba reported that RTA victims were 130 in 2001 and 339 in 2003, at Bugando Medical Center, Mwanza City. RTA victims from Tumbi special hospital were 427 in 2001 and 899 in 2003 at Kibaha township catering for RTA occurring along Dar es salaam-Morogoro highway .these data indicate an increase of 209 and 462 of RTA victims over a period of 2 years for Bugando and Tumbi hospitals respectively.

In Kenya the National figures for RTA during the period of 2007-2009 reveal no increase in trends (Kenya National Bureau of statistics and Traffic police 2009). Study from Turkey shows that RTA increases from 160 per 100,000 populations in 2001 to 260 per 100,000 populations in 2009. Study for Brazil 2011 the number of hospital admission resulting from RTAs increased by 9% from 108,988 in 1989 to 123,168 in 2009

In developed countries studies indicate downward trend in RTA. Data for 2009-2010 In UK indicate a 6% in RTA (Annual report department for transport) while in Ireland the number of RTAs for 1996/1997 was 286 and for 2006/2007 was 88. (Solon *et al* 2012).

The fact that the bed occupancy for RTA cases was 500% indicate that the surgical ward section allocated for RTA cases was highly overloaded. This means that some cases had to share a bed or some cases had to sleep on the floor. These findings are similar to those reported by Museru et al 2003 who reported bed occupancy rate for trauma cases to be 140% at Muhimbili Orthopaedic Institute. The monthly hospital data in one of the New Delhi trauma hospital shows that the bed occupancy rate for trauma cases in September 2012 was 150% (Saxena *et al* 2012)

In Bangladesh the study shows that the bed occupancy rate for trauma cases in September 2001 was 79.75% (Rahman *et al* 2012). Tamimi *et al.*1980 reported bed occupancy in surgical wards to be 48% in one of the trauma hospital in Saudi Arabia.

Seventy three percent of the equipments and 85% of supplies required for emergency department to handle RTA Cases were available except pethidine, CT scan machine, Tracheostomy set and defibrillator. These results indicate that the facility was fair prepared to handle trauma cases from road traffic accidents because most of the items needed for management of injuries were available.

These findings are similar to those reported in Ghana where 72.7% of essential equipments and 50% of supplies were available (Norman *et al* 2012). These findings differ from those reported by, Nandumba 2008 and Macharia *et al* 2009.

Macharia *et al* (2009) conducted a study in 53 large and medium size private, faith-based and public hospitals in Kenya. In their study, in-patient road traffic crash casualties and health personnel in the selected hospitals were interviewed on availability of emergency care and resources. Sixty percent of government hospitals lacked essential supplies necessary for handling road traffic accident Cases.

Following the extensive literature review of published and other reports from the government offices, Nandumba (2008) concluded that patients with musculoskeletal injuries in Uganda repeatedly fail to receive immediate care due to inadequate resources and most are treated by traditional bonesetters.

Norman et al 2012 conducted study in Ghana among 22 district and regional health facilities including teaching hospitals. The findings of their study indicated that many of the nation's hospitals were not prepared for large RTA's resulting in surge demands, and did not possess general emergency preparedness programs. The hospitals' respective abilities to handle large scale RTA's were compromised, among others, by the lack of adequate supplies.

Eight percent of personnel required for emergency department to handle RTA Cases were available except neurosurgeon .This indicates that Amana hospital was adequately staffed to handle the majority of RTA Cases. The finding of the current study differ to those reported by Norman *et al* 2012 in Ghana where the results indicated that the facilities scored below average marks in terms of the availability of personnel except for laboratories personnel. Study done in most district hospitals in Africa including Tanzania shows that these health facilities had an adequately staffed to handle RTA Cases. Odero *et al* 2003 conducted a study in Kenya where the results indicated that inadequate qualified personnel to handle RTA Cases.

Seventy one percent of infrastructure required for emergency department to handle RTA Cases was available except Triage area and ICU .This indicate that Amana hospital was adequately prepared to handle the RTA Cases. Due to its allocation Amana hospital can be easy refer the victims needs ICU to the National hospital which is within 10km and the available space can be used to sort victims. The finding of the current study differs to those reported by Hazen A and Ehiri J 2006 Nantulya and Reich2003, Kinghan *et al* 2009, and Hassan *et al* 2011. Ehiri HZ 2001 conducted a study in developing countries where the results indicated that the public health facilities are poorly developed trauma care systems and nonexistent social welfare infrastructures to accommodate the needs of the injured cases.

Nantulya and Reich 2003 conducted a study in Kenya where the results indicate that there was Inadequacy of the public health infrastructure in providing treatment for RTA Cases. Kingham et al 2009 conducted a study on 10 of the 17 government civilian hospitals in Sierra Leone. There were severe shortages of infrastructure required for delivering surgical care of RTA Cases.

Bidgoli *et al.* (2010) reported that lack of appropriate structure of the hospital and rapid increase in the number of traumas led to the ineffectiveness of trauma care delivery at Emergency department in Iran.

Study limitations

This review reaffirms that most accident statistics are obtained from routine data collected by traffic police and hospitals. At the time of designing the current study the literature search could not find the published reports on the impact of road traffic accident on health care delivery and opinions of health workers on their preparedness to handle MTA cases at Amana hospital this led to difficulties to get a review literature. The researcher should have interviewed also the victims of road traffic accidents at the hospital so as to obtain more information. However, time and financial resources allocated to the study could not allow for this to happen. Nevertheless, these findings do provide important insights on the impact of road traffic accident victims on health care deliveries and preparedness at Amana hospital.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

Heads of section handling the RTA cases opinions were not well prepared to handle RTA Cases. The main shortfalls cited included insufficient supplies, equipment and trained health personnel. Overall RTA cases compose of 2.6%of a total OPD cases.RTA bed occupancy rate for trauma cases were 500%. Available essential resources to handle RTA Cases were 85.7% and 73%of supplies and equipments respectively, and 71% and 80% of infrastructure and personnel respectively.

RTA is still a public health problem at Amana hospital. Much needs to be done to slow or reverse the trend by; a) ensuring uninterrupted supplies; availability of adequate equipment, infrastructure and trained personnel b) To ascertain the number of beds to be allocated for RTA cases

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APPENDICES

APPENDIX I: INTERVIEW GUIDE QUESTIONS WITH HOSPITAL INFORMANTS

PART I (Personal particulars of respondent)

a) Questionnaire number…….

b) Age…….yrs

c) Sex.

1) Female
2) Male

d) Position

1) Medical Officer in charge
2) OPD Doctor in charge
3) OPD Nurse in charge
4) Head of Traumatology department
5) Matron
6) Head of record
7) Head of radiology department
8) Others (specify)……..

e) Profession

1) Specialist (specify…….)
2) Medical officer
3) Assistant Medical Officer
4) Clinical Officer
5) Nurse
6) Laboratory technician
7) Radiologist

8) Others (specify)……

f) Working experience in Amana hospital……..yrs

PART II

1. Where do the victims come from? (Location)

1) Nyerere road (specify)……
2) Mandela road (specify …….
3) Kawawa road (specify)……

2. What are the types of vehicle involved (used by the victims)

1) Saloon car
2) Minibus daladala
3) Motorcycle
4) Bicycle
5) Trucks
6) Bajaj

3. What are the classes of the injured person?

1) Driver
2) Passengers
3) Pedestrian
4) Motorcyclist
5) cyclist

4. Do you have enough treatment rooms to accommodate all injured people?

1) NO…….
2) YES ……

5. Do you have enough health personnel (MO, Radiologist, and Othorperdic surgeon, Neurosurgeon) to deal with all injured people in 24hrs?

1) NO
2) YES

6. Does the hospital run its radiological services in 24hrs?

1) NO
2) YES

7. Do you have enough medical supplies for trauma care?

1) NO
2) YES

PART III

8. Do you think motor traffic injuries are important problems in your hospital?

1) NO ……
2) YES…….Ifyes,explain ……...

9. What problems do you get in receiving motor accident victims? .....

……

10. What is the state of institutional preparedness for injury emergency care?

1) Good
2) Bad
3) Fair

11. What is anticipated duration of hospital stay for the victims and the expected treatment outcome?.....
.....
.....

12. What are your recommendations on how to improve medical services to MTA victims at Amana hospital? ……

…….

13. What kind of measures should be taken to reduce traffic accidents in Ilala district? ……

…….

PART IV

14. Which groups of people or organization (FBOs, NGOs, and Private hospitals) are involved in the medical care of road crash victims at the hospital.....

……?

15. How and to what extent are these partners involved? …….

…….

QUESTIONNAIRE FORM FOR REVIEWING INDIVIDUAL PARTICULARS OF MOTOR TRAFFIC ACCIDENT VICTIMS FROM THE HOSPITAL RECORDS

PART I

a) Questionnaire number…….

b) Age in yrs

1. 0-5
2. Below 5
3. 6-10
4. 11-18
5. 18-24
6. 25-34
7. 35-44
8. 45-60
9. 60+

c) Sex

1. Female
2. Male

d) Occupation

1. Peasant
2. Civil Servant
3. Businessman/woman
4. Others(specify)

e) Residence

1. Ilala district
2. Outside ilala district

PART II

1. When did accident happen?

1. Month……
2. Day of a week…….

3. Time period, Day…… or Night?

2. Types of vehicle involved (used by victims)

1. Mini bus (daladala)
2. Motorcycle
3. Bicycle
4. Saloon car
5. Bajaj
6. Trucks

3. Casualty

1. Injured
2. Death

4. If injured what is the outcome of the diagnosis

1. Full recovered
2. Permanently disabled
3. Temporally disabled

5. Class of the injured person

1. Driver
2. Passenger
3. Pedestrian
4. Motorcyclist
5. Cyclist

6. Total number of road traffic victims from each month July, August, September, October, November, December

1. July Total……

2. August Total…….

3. September Total……..

4. October Total……

5. November Total……..

6. December Total……

7. Conditions of these victims for each month in numbers

Conditions	July	August	September	October	November	December
Serious						
Fatal						
Slight						

APPENDIX II: CHECKLIST TOOL FOR REVIEWING HOSPITAL CAPACITY TO SAVE MOTOR TRAFFIC ACCIDENT VICTIMS.

Lists of items/personnel/drugs	Not available	Available	Quantity
1.Monitors			
2.Defibrillator			
3.Ambu bag			
4.Intubation set			
5.Tracheostomy set			
6.Oxgen			
7.Basic OT room			
8.Plaster room			
9.Ambulance			
10.Triage area			
11.Stretcher			
12.Observation room			
13.Trauma ward			
14.Sunction machine			
15.Catheter			
16.Infusion			
17.X-ray machine			
18.Blood bank			
19.ICU			
20.CT Machine			
21.Essential drugs			
Pethidine			
Lignocaine			

22.Sutures			
23.MO in 24hrs			
24.Radiologist			
25.Neurosurgeon			
26.Othorpedic surgeon			
27.Anesthesiologist			

APPENDIX III: INFORMED CONSENT, ENGLISH VERSION.

MUHIMBILI UNIVERSITY OF HEALTH SCIENCES, DIRECTORATE OF RESEARCH AND PUBLICATIONS.

INFORMED CONSENT

ID-NO …….

Consent to participate in this study

Greetings

My name is Mwanahamisi. M. Hassan, student Master of Health Policy and Management Muhimbili University of Health and Allied Sciences (MUHAS)-School of Public Health and Social Sciences (SPHSS) I am working on this research project with the objective determining the magnitude of the impact of medical care of road crash victim towards health care deliveries at Amana hospital in Ilala district.

Purpose of the study

This study has the purpose of collecting information from health workers at Amana hospital. You are being asked to participate in this study because you have particular knowledge and experiences that may be important to the study.

What Participation Involves

If you agree to participate in this study the following will occur:

1. You will sit with a trained interviewer and answer questions about road crash victims and health care delivery. The interviewer will be recording your responses in the questionnaire.

2. You will be interviewed only once for approximately 15 minutes in a private setting.

Confidentiality

All the information collected from you will be kept confidential. Your name will neither be included in the questionnaire nor will it appear anywhere else. Only supervisor and I will have access to the information you provide.

Rights to Withdraw and Alternatives

Taking part in this study is completely your choice .If you choose not to participate in the study or if you decide to stop participating in the study you will not get any harm .You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

Benefits

The information you provide will help to increase our understanding on magnitude of the impact of medical care of the road crash victims towards health care delivery which will inform the local and central government and in future improvement of the service.

Who to contact in case of any questions or concerns

If you ever have questions about this study, you should contact the study coordinator or the Principal Investigator ,Mwanahamisi M. Hassan ,Muhimbili University of Health and Allied Sciences(MUHAS),P.O. Box 65001,Dar es Salaam(Tel .no. 0784959016).If you ever have questions about your rights as a participant ,you may call Prof Abood Chairman of the senate Research and Publications Committee, P.O. Box 65001,Dar es Salaam.Tel:2150302-6 and Prof, C. Kihamia who is the supervisor of this study.

Signature

Do you agree?

Participant Agrees ……

Participant disagrees ……

I…….have read\understood the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant

……

Signature of witness (if participant cannot read)

……..

Signature of research assistant

……..

Date of signed consent

…….

APPENDIX IV: INTERVIEW GUIDE-SWAHILI VERSION

Maswali ya mwongozo wa usaili kwa wafanyakazi wa Hospitali

SEHEMU YA KWANZA

a) Dodoso namba……

b) Umri ……..

c) Jinsia

1) Mwanamke
2) Mwanaume

d) Cheo

1) Mganga Mkuu wa Hospitali
2) Mganga Msimamizi wa wagonjwa wa Nje
3) Muuguzi Msimamizi wa Wagonjwa wa Nje
4) Mkuu wa Idara ya ajali na
5) Muuguzi Mkuu
6) Mkuu wa Masjala
7) Mkuu wa idara ya eksirei
8) Wengineo (ainisha)…….

e) Weledi

1) Daktari Bingwa
2) Mganga
3) Mganga Msaidizi
4) Tabibu
5) Muuguzi
6) Fundi sanifu wa Maabara
7) Rediolojia
8) Nyenginezo (taja)

d) Muda uliokaa hospitalini hapa……..

SEHEMU YA PILI

1. Wahanga wa ajali hutokea sehemu gani(mahali/eneo)

1) Barabara ya Nyerere (taja eneo)
2) Barabara ya Mandela (taja eneo)
3) Barabara ya Kawawa (taja eneo)

2. Aina gani ya chombo cha usafiri kinachosababisha ajali kwa wingi

1) Magari madogo
2) Mabasi madogo(daladala)
3) Pikipiki
4) Baiskeli
5) Magari makubwa ya mizigo
6) Vibajaji

3. Watu wa kundi gani wanaoumia

1) Madereva

2) Abiria

3) Watembea kwa miguu

4) Waendesha pikipiki

5) Waendesha baiskeli

4. Vipo vyumba vya kutolea matibabu vya kutosha kuhudumia majeruhi

1)Ndiyo…… 2) Hapana……

5.Je kuna watumishi wa afya wa kutosha (mganga,mtaalamu wa mionzi,mtaalamu wa mifupa)kuhudumia wagonjwa kwa masaa 24?

1) Ndiyo

2) Hapana

6. Huduma ya eskirei hospitalini hapa inapatikana kwa masaa 24?

1) Ndiyo

2) Hapana

7. Ipo huduma ya matibabu ya kutosha kwa waliopatwa na kiwewe cha ajali?

1) Ndiyo

2) Hapana

SEHEMU YA TATU

8. Unafikiri, wahanga wa ajali za magari ni tatizo linalopewa kipaumbele katika hospital yako?

1) Ndiyo……..

2) Hapana……kama ndiyo elezea……

……..

……

9. Ni matatizo gani unayoyapata katika kuwapokea majeruhi wa ajali?

……

……

……

10. Matayarisho ya hospitali yakoje katika kutoa huduma za dharura kwa wagonjwa wanapata ajali?

1) Mazuri

2) Mabaya

3) Wastani

11. Wagonjwa waliopata ajali huchukua muda gani hospitalini na ni nini matokeo ya tiba iliyotolewa?.....

.....

12. Una mapendekezo gani katika kuinua ubora wa huduma za matibabu kwa wahanga wa ajali hospitalini Amana?

……

……

……

13. Hatua gani zichukuliwe katika kupunguza ajali wilayani Ilala?

……
……
……

SEHEMU YA NNE

14.Ni kikundi gani cha watu au mashirika(shirika la kidini,mashirika yasiyo ya kiserikali na hospitali zisizo za kiserikali)yanayojihusisha na utoaji wa huduma za matibabu kwa majeruhi wa ajali za barabarani katika hospitali ya Amana?

……
…….

15. Kwa namna gani na kwa kiasi gani washirika wa maendeleo wanavyohusishwa?

……
…….....

DODOSO KWA AJILI YA KUPITIA TAARIFA ZA WAGONJWA WALIOTOKANA NA AJALI ZA BARABARANI

SEHEMU YA KWANZA

a) Dodoso Na……..

b) Umri

1.0-5

2. Chini ya 5

3.6-10

4.11-18

5.18-24

6.25-34

7.35-44

8.45-60

9. Zaidi ya 60

c) Jinsia

1. Mwanamke

2. Mwanamme

d) Kazi

1. Mkulima

2. Mtumishi wa serikali

3. Mfanyabiashara

4. Nyingine (taja)……

e) Makazi

1. Wilaya ya Ilala

2. Nje ya wilaya ya Ilala

SEHEMU YA PILI

1. Ajali ilitokea lini?

1) Mwezi……..

2) Siku gani ya wiki……

3) Muda(Asubuhi,Mchana au Jioni)?

2. Aina ya gari lililohusika

1) Gari dogo

2) Basi dogo(daladala)

3) Pikipiki

4) Magari makubwa(mizigo)

5) Bajaj

3. Mapokezi

1) waliopata ajali

2) vifo

4. Kama ameumia imegundulika nini?

1) kupona

2) kilema cha kudumu

3) kilema cha muda mfupi

5. Daraja la watu walioumia

1) Dereva

2) Abiria

3) Mtembea kwa miguu

4) Mwendesha pikipiki

5) Mwendesha baiskeli

6. Jumla ya waathirika wa ajali kutoka kila mwezi wa saba,wa nane,wa tisa,wa kumi,kumi na moja ,kumi na mbili

1)Mwezi wa saba,jumla…….

2)Mwezi wa nane,jumla……

3)Mwezi wa tisa,jumla…….

4) Mwezi wa kumi,jumla……..

5) Mwezi wa kumi na moja,jumla……

6) Mwezi wa kumi na mbili,jumla…….

6)Hali za waathirika wa ajali katika kila mwezi kwa namba

Hali	Mwezi wa saba	Mwezi wa nane	Mwezi w tisa	Mwezi wa kumi	Mwezi wa kumi na moja	Mwezi wa kumi na mbili
Mahututi						
Mbaya zaidi						
Mbaya kiasi						

ORODHA YA VIFAA KWA AJILI YA UKAGUZI WA UWEZO WA HOSPITALI KATIKA KUOKOA WAHANGA WA AJALI.

Orodha ya vifaa/madawa/vitende kazi	kutopatikana	kupatikana	kiasi
1.Monitors			
2.Defibrillator			
3.Ambu bag			
4.Intubation set			
5.Tracheostomy set			
6.Oxgen			
7.Basic OT room			
8.Plaster room			
9.Ambulance			
10.Triage area			
11.Stretcher			
12.Observation room			
13.Trauma ward			
14.Sunction machine			
15.Catheter			
16.Infusion			
17.X-ray machine			
18.Blood bank			
19.ICU			
20.CT Machine			
21.Essential drugs			
Pethidine			
Lignocaine			

22.Sutures			
23.MO in 24hrs			
24.Radiologist			
25.Neurosurgeon			
26.Othorpedic surgeon			
27.Anesthesiologist			

APPENDIX V: FOMU YA RIDHAA

CHUO KIKUU CHA SAYANSI ZA TIBA NA AFYA MUHIMBILI, KURUGENZI WA UTAFITI NA UCHAPISHAJI.

NAMBA YA UTAMBULISHO……

RIDHAA YA KUSHIRIKI KATIKA UTAFITI HUU

Salaam,

Jina langu ni Mwanahamisi.M.Hassan,mwanafunzi wa Shahada ya Pili ya Sera za Afya na Utawala katika Chuo Kikuu cha Sayansi za Tiba na Afya Muhimbili-Chuo cha afya ya jamii na Sayansi za jamii.Ninafanya utafiti huu unaolenga kuangalia ukubwa wa tathimini ya matokeo ya huduma zitilewazo kwa wahanga wa ajali katika huduma za afya zitolewazo Amana Hospitali.

LENGO LA UTAFITI HUU

Utafiti huu una lenga ukusanyaji wa habari na kupata mtazamo wa wafanyakazi wa afya katika hospitali ya Amana tukiamini ujuzi na uzoefu wao ni muhimu katika utafiti huu.

USHIRIKI WAKO UTAJUMUISHA YAFUATAYO

Kama ukikubali kushiriki katika utafiti huu mambo yafuatayo yakuzingatia:

1. Utakaa pamoja na mtafiti na kukuuliza maswali kuhusu wahanga wa ajali na huduma za afya zitolewazo .Mtafiti atakua anarekodi majibu yako katika dodoso.
2. Utaulizwa kwa muda wa dakika 15 katika sehumu ya faragha.

USIRI

Habari zote zitakazo patikana kutoka kwako zitawekwa katika hali ya usiri mkubwa.Pia jina lako halitatokea katika dodoso wala sehemu yeyote ile.Mimi na msimamizi wangu tu ndio tutakua na uwezo wakuwa na habari ulizotoa

HAKI YA KUKATAA AMA KIJITOA

Uamuzi wako kushiriki katika utafiti huu ni wa hiari yako.Kama ukichagua kukataa kushiriki au kusimama kuendelea kushiriki katika tafiti hii hautapata adhabu yeyote.Unaweza acha kushiriki muda wowote hata kama umeshakubali kushiriki.

FAIDA

Habari utakazotupa zitasaidia kuongeza uelewa wa ukubwa wamatokeo ya huduma zitolewazo kwa wahanga wa ajali na zitasaidia kuwtaarifu waandaaji wa sera za afya,esikali za mitaa na serikali kuu katika uboreshaji wa huduma za afya kwa siku za baadae.

KWA MAWASILIANO ZAIDI MAWASILIANO

Kama una swali lolote kuhusiana na hii tafiti,unatakiwa kuwasiliana msimamizi wa tafiti hii Mwanahamisi ..Hassan(Simi namba 0784959016) na mwenyekiti wa kamati ya utafiti na uchapaji ya Chuo Kikuu cha Sayansi za Tiba na Afya Muhimbili,Sanduku la posta 65001Dar es Salaam,Simu 022-21503026 na Prof,C.Kihamia msimamizi wa tafiti hii.

SAHIHI

Unakubali?

Mshiriki amekubali ……

Mshiriki amekataa ……

Mimi……nimesoma/nimeelewa yaliyaelezwa hapo juu.Maswali yangu yamejibiwa.Na nimekubali kushiriki katika tafiti hii.

Sahihi ya Mshiriki

……..

Sahihi ya Shahidi (kama mshiriki hawezi kusoma)

……..

Sahihi ya msaidizi wa mtafiti

……..

Tarehe iliyosainiwa fomu ya ridhaa

…….

APPENDIX VI: ETHICAL CLEARANCE

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Ref. No. MU/PGS/SAEC/Vol. VI/

20th April, 2012

Mwanahamisi H. Magwangwara,
MSc. Health Policy and Management,
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED "ASSESSMENT OF THE IMPACT OF MEDICAL CARE OF ROAD CRASH VICTIMS ON THE HEALTH CARE DELIVERY AT AMANA HOSPITAL, ILALA MUNICIPALITY"

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.

Thus ethical clearance is granted and you may proceed with the planned study.

Prof. Z. Premji
DIRECTOR, POSTGRADUATE STUDIES

/emm
c.c. Vice Chancellor, MUHAS
c.c. Deputy Vice Chancellor – ARC, MUHAS
c.c. Dean, School of Public Health and Social Sciences, MUHAS