

Evaluation of unintentional injuries preparedness management; focus on Road Traffic Accidents at Ntsekhe Regional Hospital

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1. Acronyms

LDHS	Lesotho Demographic Health Survey
DRR	Department of Rural Roads
MoPWT	Ministry of Public Works and Transport
TSP	Transport Sector Program
HPSU	Health Planning and Statistics Unit
PPP	Public Private Partnership
WHO	World Health Organization
HICs	High Income Countries
LMIC	Low-Middle Income Countries
RTA	Road Traffic Accidents

2. Background

The Kingdom of Lesotho is situated in the south eastern region of Southern Africa, covering an area of 30,355 km² and is entirely surrounded by South Africa. Lesotho's geographical formation is characterized by high mountains and deep valleys, and it is the only country in the world to have all its entire territory located at more than 1,000 meters above sea level. More than 75 % of Lesotho is mountainous, with only 25 % considered lowland. The lowest point is 1,388 meters rising to almost 3,500 meters in the Maloti mountain range which forms the border with South Africa to the north east and south west. Seventy five percent of the Lesotho population live in rural areas, with no social services and poor road infrastructure, as postulated by Tanga, 2014.

Most of the rural areas in Lesotho suffer from poor road and transport facilities as indicated earlier. The government of Lesotho has attempted to address this problem through the Department of Rural Roads (DRR). According to Tanga et al, 2014 the government of Lesotho has adopted a number of strategies in order to develop roads infrastructure in rural communities, as well as those urban areas where there are insufficient social services; the DRR targets rural communities in providing functional rural roads in order to improve the livelihood of rural people. The Ministry of Public Works and Transport (MoPWT) has established a Transport Sector Program (TSP) which is responsible for listing all development and maintenance plan.

Ntsekhe Regional hospital is one of the two regional hospitals in Lesotho, located in northern and southern part of the country. Ntsekhe regional hospital is situated in the southern part of the country serving districts, and local hospitals in southern part of the country, providing health services stipulated in the health facility typology, 2005 by Ministry of Health, Health Planning and Statistics Unit (HPSU), before transferring to tertiary hospital, if the patients' condition warrants such. The regional hospital is expected to render some of the specialist care like orthopaedic, paediatrics and obstetrics as well as gynaecological services. But for complicated cases the hospital refer to the tertiary hospital under Public Private Partnership (PPP) agreement. General emergency nursing and medical care services are also rendered in this facility including unintended injuries.

Unintentional injuries are referred to as injuries that are unplanned. Unintentional injuries can be defined as events which include; the injuries that occurs in a short period of time; the harmful outcome as a result of environmental, human and or precipitating factors. The most

common unintentional injuries result from motor vehicle crashes, falls, fires and burns, drowning, poisonings and aspirations. But for the purpose of this study the main focus will be on the motor vehicle accidents.

World Health Organization (WHO) has a special office to coordinate global injury epidemiology and prevention; and World Bank policy and planning projects identified injuries as a priority area, though in Lesotho the problem seem to be under reported, hence it is one of the neglected areas of the health services though it appears under the top ten health problems. The epidemiology of unintentional injuries based on the International Classification of Diseases, Ninth Revision, in developing countries is reviewed, and developing countries are those with an annual gross national product/capita of US\$2500, Lesotho inclusive, this is according to the figures by World Bank in 1986. Emergency medical services have been found to decrease trauma, where they are efficient and efficient with the involvement of other professionals as well as the civil society.

According to the World Health Organization, unintentional injuries were responsible for over 3.9 million deaths and over 138 million disability-adjusted life-years in 2004, with over 90% of those occurring in low- and middle-income countries (LMIC) and Lesotho falls under low income countries. This study intends to evaluate implementation in preparedness management of unintentional injuries with main focus on Road Traffic Accidents (RTA) at Ntsekhe Regional Hospital, Lesotho. The worldwide rate of unintentional injuries is 61 per 100,000 population per year, overall road traffic injuries make up the largest proportion of unintentional injury deaths (33%) this is according the WHO. The death rate is nearly double in LMIC versus high-income countries (65 vs. 35 per 100,000), and the rate of disability-adjusted life-years is more than triple in LMIC (2,398 vs. 774 per 100,000).

Ministry of Health (MOH) in its policy, 2011 has clearly indicated that road traffic accidents are part of non-communicable diseases, but when it comes to policy direction the policy measure is not specific on trauma and road traffic accidents, as a result health information does not have specific form of reporting to capture traumas including traffic accidents and this is also confirmed by the report by Jacob, 1999 which shows that in Africa only seven countries has time series data with regard to the topic discussed. Therefore measuring extend of the problem is not possible so as to develop strategies for the interventions to prevent and or manage traumas effectively and efficiently.

Ntsekhe regional hospital has 145 beds, and offer medical, surgical, maternity and paediatric services it also has mental health services for in and out patients. According to the MOH establishment list there are five medical doctors and ninety three nursing personnel. But only fifty four nursing positions are filled. Out of this nursing staff six nursing personnel is allocated on annual rotational basis at emergency/casualty department for both day and night duty, while medical doctors are rotating on weekly basis and only one in the department. This staffing pattern makes it difficult to have permanent emergency/casualty nursing staff at night. Hence the anticipated delay in managing the casualties at night.

3. Objectives

- 3.1 To discover the knowledge gaps in the management of unintentional injuries in Ntsekhe Regional hospital among staff working in the emergency/casualty department
- 3.2 To identify resources (human and material) availability to reduce complications from injuries sustained as a result of road traffic accidents
- 3.3 To find out if there is a plan in place to manage casualties of traffic accident at hospital level

4. Problem statement

Economic Burden of Unintentional Injuries. Estimates of the burden of unintentional injuries as measured in terms of economic costs are almost non-existent according to Norton et al (chapter 39; unintentional injury). Annually road crash costs is about US \$518 billion

globally and about US \$65 billion in LMICs, exceeding the total annual amount these countries receive in development assistance (Jacobs, Aeron-Thomas, and Astrop 2000).

Risk Factors for Road Traffic Injuries. Escalating volume of traffic is one of the main factors contributing to the increase in traffic crash in LMICs; technical aspects of planning, highway design, traffic engineering, and traffic management that are the hallmarks of transportation systems in many High Income Countries (HICs) are absent in LMICs, as a result there are many road traffic accident causing preventable deaths and disabilities, though according to NHS Health Scotland, 2012 there is moderate evidence that speed enforcement devices (cameras, lasers or radar) reduce road injuries and serious/fatal injury crashes/collisions in their vicinity. Studies undertaken primarily in HICs show a strong relationship between the increase in vehicle speeds and increased risk of crash and injury, both for motor vehicle occupants and for vulnerable road users, particularly pedestrians (European Road Safety Action Program 2003) as opposed to LMICs.

In Lesotho the main challenge with respect to the road traffic accident there is no standardized reporting format, which can provide information in terms of assessing for the degree of the problem that can facilitate planning interventions. Trauma is the problem according to the MOH top ten health challenges, but no precise measures put in place to prevent and curb the problem. Therefore this study will form a basis for the development of the relevant documents and strategies in the management of the road crash accidents.

5. Methodology

Qualitative study with an observational approach. Structured open ended questionnaire will be used to collect data from the key informants leading in the hospital services, they will be from nursing and medical departments. The total sample of four key informants and the other sample will be selected conveniently from nursing staff working in casualty and emergency department present on the date of the data collection. This group of the population will be interviewed using data collection tool using a range of strongly agree and strongly disagree. Data analysis for the latter group will be done using the quantitative approach, while the key informants' data will be coded verbatim while questionnaire from the staff working at emergency departments will be analysed quantitatively.

When selecting sample group the issue of work experience, gender, age, and religion will not be considered as they may not yield results based on the objectives of the study and the information may not add value on the evaluation of the implementation of the management in the unintentional injury preparedness. One may think that work experience may add value but, in the context of this study the plan, training and availability of sufficient resources are the variables that have more bearing in the study context.

6. Findings

6.1 key informants' responses that are coded verbatim

Question 6.1.1

What can you say about your role and responsibilities with regard to motor vehicle accident Management?

Response 1

“My role starts when casualties arrive at the casualty department whereby the triage is used to categorize casualties accordingly. However there is still lack of knowledge or minimal skill when it comes to transportation of such casualties to the facility, as most of the time they are transported by police and ambulance drivers, without necessary skills which may aggravate the condition. Use of trained personnel such as paramedics and medical staff should be encouraged.”

Response 2

“My role is to see that there are adequate staff that manage the accidents at the hospital, and oversee the management”

Response 3

“Put in place ambulance or any vehicle and driver on standby, who will attend to accidents scenes”

Response 4

“To develop protocols and guidelines in line with national protocols regarding motor vehicle accidents management. Liaise with other stakeholders. For example traffic cops, first aider, disaster management officers. Train nursing personnel with regard to accidents and reinforce triage of the casualties on arrival to casualty”

Response 5

“To draw a plan regarding accidents, and protocol as well as guidelines to be formulated and put in place. Liaise with other ministries. For example police and District Administrator’s office.”

Question 6.1.2

Is there relationship between hospital and other stakeholders outside hospital in the management of the motor accidents? (yes/No) either answer indicate how?

Response 1

“Yes”- There is always communication between the police, community and the hospital when such accidents have occurred. Hence they work together in the process of bringing the casualties to the hospital.”

Response 2

“Yes”-“Where possible the police services may take responsibilities of taking charge and delivering patients to the hospital”

Response 3

“No”

Response 4

“Yes”-There is always communication from the police officers and District Administrator’s (DA) office as well as the community at large”.

Response 5

“Yes”- If there is accident we inform police for assistance and DA’s officer, partner, District Health Management Team (DHMT) to provide transport and human resource”.

Question 6.1.3

In your opinion what are the most effective strategies that can be employed to prevent traffic accidents?

Response 1

“Effective education on the traffic rules and regulation by the concerned parties, reinforcement on the traffic rules and regulations, harsh punishments on the road traffic rule offenders and visibility of traffic police on the roads who are effectively doing their job.”

Response 2

“School health education where the children are taught how to cross the roads, speed humps be put on the roads, road traffic lights.”

Response 3

“Trainings should be conducted for hospital and stakeholders. Mechanisms of driving slow and taking care of all. You driver your vehicle and others and caution must be practiced on the road”.

Response 4

“Effective education on motor vehicle accidents management, school health visits on safety measure while crossing the road, reinforcement of the law with regard to road safety, Drivers trained on safety measures and prevention, speed humps where necessary.”

Response 5

“Good use of bright lights. Education on speed limit, no alcohol when driving, overload on public transport, stop when drivers feels tired, organize campaigns on road accidents, and school health on road safety for pedestrians”.

Question 6.1.4

Do you think there are enough resources (human and equipment) to use during the accident in the hospital? (yes/No) either answer elaborate.

Response 1

“No”- “There is lack of both human and equipment resources and that hinders the process of management of the accidents, shortage of staff, inconsistency in the checking and maintaining the emergency trolleys in each ward.”

Response 2

“No-Staff low.”

Response 3

“Resources are not enough but having a plan to address the matter will be useful, even with shortage of human resources”

Responses 4

“No”-There is shortage of staff, which is nursing staff and drivers. There is need for extra ambulance which is fully equipped. There is a challenge of infrastructure, space to stabilize the casualties”

Response 5

“No”-We need more ambulances and drivers 24 hours”.

Question 6.1.5

Staff working in your facility competent in managing the injuries sustained from road traffic accidents? If yes how so? And if no, where is the gap?

Response 1

“The staff is competent but overloaded, that is their competency will be affected by workload, and in most “cases in a negative way. Another gap is in the issue of transportation, where there is no trained personnel responsible for transporting casualties from the scene to hospital. Management of the casualties at the scene may improve or frustrate the efforts of the medical staff at the facility as most of the complications can be prevented by managing casualties on the scene. Also complications can be identified earlier.”

Response 2

“Yes”- Always do first aid and do report cases”.

Response 3

“Doctors and nurses are competent by other staff are not which means they will need training in order to capacitate them”.

Response 4

“Some are competent others need training on first aid. Drivers should be trained on prevention of motor vehicle accidents and first aid measures in case of the accidents. There is need for well-trained paramedics. As the facility and district we have to draw an emergency preparedness planned adhere to it”.

Response 5

“Not all of them, we need training on accident/emergency preparedness, and need well trained paramedics as well as the training for drivers on ambulance services.”

Comment [HC1]:

6.2 findings from staff working in the emergency/ casualty department

Item	Strongly agree	agree	Not sure	disagree	Strongly disagree	
Motor accident can happen in seconds anywhere in the district, leaving driver, passengers and pedestrians with life time injuries	5	2	0	0	0	
Many crashes cause death and disability	5	1	0	0	0	1 no response
Those involved in an accident and sustained serious injuries may incur unnecessary expensive costs of hospitalization	3	2	0	1	0	1 no response
Motor accidents are not random occurrences, they usually happen as the drivers recklessness, therefore drivers can be held liable for the cause	1	3	2	1	0	
Have you been trained in the management of unintended injuries with main focus on motor accident	1	2	1	1	2	
Hospital medical equipment is sufficient and appropriate to deal with the motor accident	1	0	1	3	2	
National protocols that guides staff in the management of the motor accident are available and known	1	0	0	4	2	
Enough medical and nursing staff with competencies in the management of motor accidents	1	0	1	2	2	1 no response
Hospital has emergency preparedness plan That clearly stipulate management motor accidents	0	1	2	0	2	2 no response
Triage is practiced in the management of the accidents resulting from motor crash	1	2	1	0	1	2 no response

6.3 Findings based on observation

6.3.1 SWOC analysis

<i>STRENGTHENS</i>	<i>WEAKNESSES</i>
<ol style="list-style-type: none"> 1. There is human resources trained in the management of accidents 2. Ambulance are available 3. Team work between hospital and stakeholders is noticed 4. Equipment available 5. Department assigned for emergency is there known to public and staff, and this reduce the waiting time and facilitate immediate attention by staff 6. During the day there is a staff allocated at the emergency department 	<ol style="list-style-type: none"> 1. Not all staff working in emergency and casualty is competent in the management of accidents 2. Ambulances are there but don't have equipment necessary to stabilize the casualties before getting to the hospital 3. Emergency trolley not well maintained and ready to be used when necessary as well as the equipment 4. Other team members that are relevant in the emergency team not easily accessible due to accommodation challenges within hospital (pharmacy, laboratory, accounts) 5. No accident management plan nor established team 6. No allocated staff at night in the emergency department
<i>OPPORTUNITIES</i>	<i>CHALLENGES</i>
<ol style="list-style-type: none"> 1. Ministry of health has established non-communicable program to lead the district 2. Collaboration between district administrator's office and police department in the district is well established 3. Hospital has a budget at its disposal which can be used to train staff, and procure necessary equipment 	<ol style="list-style-type: none"> 1. No facility or national guidelines with respect to accidents management 2. No clear articulation of road traffic accidents in the National health policy 3. No allied health professionals like paramedics to stabilize before getting to the hospital

7. Results

Majority (71%) of staff interviewed at emergency department of Ntsekhe Regional hospital indicate that motor accidents can happen in seconds anywhere in the district, leaving driver, passengers and pedestrians with life time injuries, and strongly agree that many crashes cause death and disability. In other variables assessing hospital costs incurred by those who have sustained serious injuries; reckless drivers, staff competent in the management of accidents, Availability of National protocols as well as appropriate equipment, availability of institutional plan to respond to road traffic accidents, and triaging of casualties 40% of respondents strongly agreed with the listed points, while the remaining 60% ranged from agree and strongly disagree (20%) and between 10%-20% of respondents did not respond to these points.

Though some (40%) of the respondents under key informants show that traffic law enforcement by police cops can reduce the accidents, studies conducted by NHS Scotland Health has indicated that impact on road safety of intensified and/or rationalized police enforcement activities, convictions and reports for traffic offences, increased financial penalties for speeding and driver penalty points systems there is still weak evidence that increased or rationalized police enforcement of traffic speeds reduces accidents and collisions resulting in injury or fatalities.

8. Recommendations

The recommendation will cover both Ministry of Health (MOH) and the hospital.

1. The Ministry of Health should develop both national protocols and guideline in the management of the accidents as part of the non-communicable diseases package, as well as the reporting tools which will facilitate the analysis of the problem country wide.
2. Training of different cadres should be considered as the priority by the MOH, do that career progression for such personnel is included in the health professional and or allied health workers.
3. At hospital level there should be institutional policy on management of accidents to guide hospital staff on what should be done to circumvent avoidable complications.
4. Hospital should strengthen linkages between the hospital and the civil society as well as other line ministries to draw strategies in managing accidents from community level up to the hospital level with each level having specific responsibilities and role to perform.
5. The hospital management should include procurement of appropriate equipment for the hospital and ambulance in their annual budgets.

9. Conclusions/expected results

It is concluded that to be able to reduce complications of disability and preventable deaths, that results from mismanagement of the unintentional injuries health facilities especially Ntsekhe regional hospital together with the district health teams as well as the civil society have a role to play such as providing mobile medical units, households and efficient, accessible and affordable primary health care services, so that individuals as well as the community can access basic treatments to control haemorrhage and prevent infections and other minor injuries before referral to hospital. Health education on prevention of traffic accidents using information and education communication (IEC) materials can be of great help. It is also crucial to have strong referral and rehabilitation system as well as quality documentation of inform; cost effective interventions, decision making processes and research to facilitate effective and efficient management plan.

The results of the study indicate the gap in competencies and appropriate equipment while strengthens have been identified as committed staff though few in numbers, presence of systems in place though not proactive to the effective and efficient management of the road traffic accidents. Therefore the conclusion based on this finding would be both MOH and Ntsekhe hospital should put in place proactive systems for better management of accidents to curb the costs directed at individual casualty and the hospital.

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