

Public Health Perspectives of Events Occurring during the Golden Hour of Road Traffic Accidents

Lad Mohit¹, Narayanan Prakash², Kumar Sumit³

¹Post Graduate, Department of Public Health, ²Associate Professor, ³Assistant Professor,
Manipal University, Manipal

Abstract

Introduction: Road traffic accidents are ever increasing burden globally but vastly impacted here in India. According to the 2009 Global Status Report on Road Safety, RTIs have yielded an estimated US\$518 billion in global losses, costing governments between 1% and 3% of their gross national product (GNP). This finding is disproportionately significant in low-income countries, where economic costs of RTIs exceed developmental assistance. The primary objective of this study is to understand the events occurring the first hour after a Trauma from a Road Traffic Accident (RTA) and the secondary objective is to understand the importance of pre-hospital care immediately after RTA.

Methods: A cross-sectional study conducted in Kasturba Hospital, Manipal, Udupi from January 2017 to June 2017. A total of 18 participants were included who were involved and had experience of Road Traffic Accident and their experience and perception amidst the Golden Hour.

Result: There is somewhat knowledge regarding the Golden hour concerning Road Traffic Accident amongst all the stakeholders who were interviewed, but they were not exactly familiar with the duration of the Golden Hour.

Conclusion: It was evident that most of them had a rough idea regarding the concept of Golden hour and also had their concept about pre-hospital care in RTA.

Keywords: Golden hour, Pre-hospital care, Road Traffic Accident,

Introduction

The worldwide weight of RTIs is developing at a quick pace and furthermore, in the long run, will overwhelm tropical sicknesses and will turn

Corresponding author:

Dr Kumar Sumit

Assistant Professor Prasanna School of Public Health, Manipal Academy of Higher Education

Email id : kumar.sumit@manipal.edu

sumitsharma315@gmail.com

into the major source of death in the creating scene. Among the ten driving reasons for the worldwide weight of illness, RTIs were positioned ninth. By 2030, however, it is projected that RTIs will rank fifth in leading causes of death. In 2004, the World Health Organization (WHO) and the World Bank combined efforts to publish the World Report on Road Traffic Injury Prevention, a result of a decade long discussion, to provide insight into the growing public health, economic, and social burdens caused by RTIs. The report projected a rise

in RTIs and fatalities, with an overwhelming and disproportionate 80% increase in low- and middle-income countries (LMIC). With an annual death toll of approximately 1.3 million people worldwide, the recent worsening of RTI statistics, and the dismal projections for the next two decades, failing to take significant, immediate action will lead to devastatingly increased death rates in an avoidable and preventable global health epidemic⁶.

The situation in India is intensifying, and street activity wounds (RTI) have been expanding in recent years. The leading cause is the expansion in several vehicles out and about because of urbanization yet most presumably because of the nonattendance of composed proof-based approach to control the issue. This information demonstrates that the quantity of fatalities has kept on expanding at around seven for every penny a year over the previous decade except throughout the most recent couple of years. RTAs are on a high in Udupi district post-2010. As per the police record for the year 2014, there were 1181 accident cases due to which 220 people lost their lives, and 1466 sustained major injuries⁵. There has been an unprecedented rise in RTAs in India from past one and a half decade. In Udupi district, the rise has been very swift from past 6 to 7 years as reported by some of the newspapers which can be attributed to the fact that one of the busiest National highways of India, i.e., Trivandrum- Mumbai highway (NH-66) passes from the district. Also, from the past few years, the rapid influx of migrants from various parts of the country has made the city as well as the roads quite crowded. Various psychological factors, particularly among the youths, have also contributed to road rage in the past. Adequate intervention during the Golden hour (Medical, Administrative,

Referral, Logistics, Training of paramedics, and onsite rescuers) can very much reduce the mortality associated with RTAs. The current study will give proper insight into all the factors mentioned above from stakeholder's perspective.

Methodology

RTA Victims who are taken to Kasturba Hospital Trauma ward who are willing to participate after giving written informed consent and also the other stakeholders who have experience regarding Road Traffic accident. Exclusion criteria were the patient admitted with minimal injuries. The study took place in Kasturba Hospital, which provides tertiary care to the patients and also at Police station as one of the stakeholders were Police officers and at Private Ambulance Service stations. This study is done through purposive sampling. Stakeholders involved in RTA like Ambulance drivers, Paramedics, Police Officials, and RTA Victims to understand their perspectives on Golden hour were included in the study, and interviews were conducted until information saturation was achieved. Ethical clearance for the study was acquired from the Institutional Ethics Committee, Kasturba Medical College, and a tertiary care center in Manipal (IEC 213/2017).

Confidentiality has been maintained, and data was collected anonymously. Patient participation was according to their free will, and informed consent was acquired from the eligible respondents before the study after the reason behind the study was revealed to them using a predefined information sheet.

Results

Source of Information

Most of the information provided to the ambulance driver was through the ambulance service station or office; the call is usually made by the onsite rescuers with proper address and some information about the accident victim. Whereas the Police officers received the information from the Hospital regarding RTA for filing a Medico-legal case.

“Whenever an accident occurs the very first call goes to the Hospital, then the Hospital people will forward the call to me or explain me the situation and give me the address of the site of the accident, and I try to reach in time.” (Respondent 11)

“We get the information from the relatives or bystanders who are present near the accident site or those people who have witnessed the accident, and also we get information from the Hospital itself.” (Respondent 16)

Challenges

Most of the injuries everyone had were terrible, and they could not even walk or even stand due to the shock and impact of the crash. Almost all the accident took place during the night time, and some roads were ill-illuminated. Most of them could not find the energy to call their relatives as they lost their phone or got broken down during the accident. All of them feared that they might end up dead as no one was nearby as it was late at night. The biggest drawback is the interference of the parents or relatives during the investigation. The time of investigation in most of the cases is during the

night when the patients are cranky and surely do not cooperate with the investigation. Hit and run cases are a significant problem which is increasing day by day as it is evident in most of the cases.

“RTA cases are complicated to handle as we might not get full co-operation from the patients as most of the time, they are cranky and do not like to answer.” (Respondent 16)

“The most difficult part was to get up on my feet, and the pain was excruciating, I almost thought that my right leg was ripped apart from my body I could not even move my arms as I was scared that I might worsen my injuries.” (Respondent 4)

“I didn’t realize that my injury would be that serious, I thought that I’d drive a little take help from someone to reach nearby hospital, but I couldn’t even move because of the pain, and also I couldn’t find my mobile phone as it got misplaced during the impact and as it was dark there was no chance that I could find it and call for help, at that moment I was scared that no one will come to my aid.” (Respondent 1)

Role of onsite rescuers

Onsite rescuers were found to be everywhere in every case; it took some time to get to the victim as most of the accidents were during the night, and some of them happened outside city limits. Most of them helped the victims on their vehicle did not call for an ambulance and taken them to Hospital.

“I remember someone was trying to wake me up by saying “get up” get up open your eyes” but I couldn’t then after few minutes I woke up in an auto rickshaw someone I do not know who he was, he

was taking me to Hospital.” (Respondent 2)

“There was a Car which stopped when the driver saw a bike lying side the road with lights on. Two people in that car helped me by contacting my family and told them we are taking him to a nearby Hospital”. (Respondent 3)

Very essential to have a good knowledge regarding lifesaving skills and fast thinking also helps in aiding the victim’s injuries quickly. The main aim of the Paramedic is to treat the injuries superficially and keep the patient stable until they reach the Hospital. There should be a separate helpline in all Hospitals for accident and emergency cases. The lines should be clear, i.e., should not have any disturbance so that there is no communication error in listening to the description. The calls should be picked immediately so that there will not be a delay in getting the ambulance to the accident site. Recruiting more number of emergency staff would be very useful in decreasing the severity of the injuries to the accident victims.

“Try to rush the patient to the Hospital as soon as possible by picking the victim from the site immediately without further delay.” (Respondent 7)

“Increase in the number of healthcare service providers will indirectly reduce the severity of the injuries, e.g., if there are several health workers, they would be at a very reachable distance from the victim, and this will help save the precious time and thus reducing the severity of the injury.” (Respondent 10)

Knowledge regarding Golden hour

Almost all of them understand the concept of

Golden hour roughly, but only a few managed to be specific in terms of time, i.e., 60 minutes.

“All that I can remember is that this word is used in Road accidents and this period is about 30 minutes or so, and within this time limit it is essential to take the accident victim to an appropriate Hospital who is in a very critical state” (Respondent 11)

“I heard this term all the time and is usually used in the case of Road Accidents. It is the most precious time which is counted immediately after the trauma for 60 minutes; it is the time taken for the accident victim to be taken to an appropriate Hospital”. (Respondent 14)

“It is the most crucial time for the victim to be taken to the Hospital. This term I heard when I had the paramedic staff shifting a patient to different Hospital due to unavailability of beds.” (Respondent 12)

Lifesaving skills

The police officers are not given any specialized training on life-saving skills during their drill, there are workshops conducted for them, and most of them have attended this short course workshop. Some of them have learned CPR, assessment of the open wound, control of profuse bleeding.

“The best thing I can do is call for an ambulance and let the experts do their job instead of making the situation worse.” (Respondent 18)

Discussion

The study showed that there is somewhat knowledge regarding the Golden hour concerning Road Traffic Accident amongst all the stakeholders who were interviewed, but they were not exactly

familiar with the duration of the Golden Hour. Since the stakeholders were from the various diverse field, it was evident from the result that some people got the opportunity to work with the medical professionals very often and hence are aware of this term and its significance as well. As per the study, the socio-demographic profile shows that men are mostly affected by Road Traffic accidents as compared to women and have an age range of 25-45 years, of which most of them have health insurance. People are aware of road safety in general but in a Road accident to occur it might not be the fault of the driver, there are other factors as well which can be considered like the condition of the road, driving under the influence, ill-illuminated street lights, no street signs, speed breakers without any markings. When it comes to a road accident, the people who approach first are the ones nearby and are called as onsite rescuers who help the accident victim to the extent that they help in calling the ambulance and also leaving a message to their family or relatives. The injured victim in Mumbai usually is rescued by an onsite rescuer passing-by (43.5%) and contrary to popular belief, helped by the police (89.7%)⁵. Two-wheelers were the most frequent mechanism of RTA, the fact that males are at higher risk of RTA than women can be associated to their greater exposure to traffic and riskier behavior than females such as hanging on the side of bus, running to catch a bus, aggressive driving, impatience, lack of attention and drinking alcohol prior to driving¹. A significant number of accidents happened during hours when there was almost no traffic, and these may have resulted from the absence of traffic police and traffic signals, violation of traffic rules, and low visibility¹.

The Ambulance is the best medium of transporting the critically injured patient to the Hospital in most cases but relying on the ambulance may not be convenient in some instances as the time may already pass by if the place of the accident would be outside the city limits. The increase in mortality and morbidity may be due to lack of pre-hospital care, especially immediately after the injury. The practice of pre-hospital care is tenuous in most of semi-urban and rural areas in India, and implementation of the ‘golden hour’ concept is still a questionable goal^{3, 4}. The term “first responders” refers to laypersons, passersby, and police; it also includes drivers present immediately after an accident/ when an injury occurs. First responder’s activities in Nigeria have failed to provide proper prehospital care, probably because past administrations had disputed their virtue in this regard, and existing laws in the country require that a rescuer/responder file some form of the police report when helping crash victims².

Recommendation

Community members in the accident-prone zone should be trained in essential lifesaving skills. Standard central record keeping machinery in the district and swift administrative process. There should be a general helpline for the private ambulance services so that this will help in decreasing the response time as well as the arrival time.

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