

Road Traffic Accidents– Burden on Society

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Received: December 15, 2017; **Published:** January 08, 2018

More people die in road accidents in India than anywhere else in the world [1]. India has 1% of the world's vehicles, but 6% of the total global RTA deaths [2]. The statistical profile reflects a global estimate of 5.1 million deaths in 2000, due to injuries, accounting for 10% of deaths due to all causes. Out of this a quarter deaths occurred in the South-East Asian region [1]. In fact, road traffic injuries are ranked as the number one cause of disease burden among children between 5 and 14 years. Also number three cause among those in the age group 15 to 29 years. The male female ratio of 3 : 1 [2,3]. According to the World Health Report 2002, of the global burden of injury, 30.3% morbidity and 28.7% mortality occurred in the South-East Asia Region [4]. Global mortality is 97/100,000 population. About 850,000 are under 45 years of age, who are the main source of livelihood for their families in most of the developing countries. Every day, there are 3300 deaths and 6600 serious injuries on the road [4]. RTAs were the 10th leading cause of death worldwide and accounted for 2.1% of all deaths globally. Furthermore, these road traffic deaths accounted for 23% of all injury deaths worldwide. Worldwide, about 1.2 million persons are killed in road traffic crashes every year [3].

In 2000, around 60% of the total number of DALYs (Disability adjusted life years) lost globally were as a result of road traffic injuries and had occurred among young adults aged between 15 - 44 years [5]. Studies in India show that road traffic injuries account for 20 - 50% of emergency room registrations, 10 - 30% of hospital admissions, and 60 - 70% of people are hospitalized with traumatic brain injuries.

India accounts for about 10% of road accident fatalities worldwide. During the year 2010, there were around 5 lakh road accidents, which resulted in deaths of 134,513 people and injured more than 5 lakh persons in India. These numbers translate into 1 road accident every minute, and 1 road accident death every four minutes. During 2010, total 49,628 road accidents were reported by all States/Union Territories (UTs). Of these, about 23.9% (119,558) were fatal accidents. The number of persons killed in road accidents was 134,513, i.e. an average of one fatality per 3.7 accidents. The proportion of fatal accidents in total road accidents has consistently increased since 2001 from 17.6% to 23.9% in 2010 [6]. Road deaths in India registered a sharp 6.1% rise between 2006 and 2007. However, road safety experts predict the real numbers could be higher since many of these accident cases are not even reported. "There is no estimate of how many injured in road accidents die a few hours or days after the accident [6].

According to a report of the Ministry of Home Affairs, Government of India, one accident occurs every two minutes in India, with the accident rate corresponding to 45 per 100,000 population. In 1999, India had 40,939 000 vehicles and 306,400 road traffic accidents, which correspond to a rate of 7.5 accidents/1000 vehicles. Of the total 340,454 accidental injuries and 244,412 accidental deaths, 95.3% injuries (324,520) and 33.2% deaths (81,036) were due to road traffic, which correspond to rates of 7.9 and 2.0 per 1000 vehicles respectively. The sex ratio of road traffic injury in India was 4.5 males: 1 female [7]. The Registrar General of India's report on the survey of causes of death (rural), 1993 shows that 8.7% mortality was due to accidental injuries [4]. According to the National Road Transport Council and Trauma Cases Association, at least 25,000 lives are lost every year due to road accidents in India. The cost of injury estimated for both developed and developing countries is equally high as compared to the countries' per capita income i.e. the ratios of cost per fatality: per capita income are 20:1 and 17:1 respectively [8,9].

World health organization has defined accidents as an unpremeditated event resulting in recognizable damage [1]. Road Traffic Accidents (RTA) is a major but neglected public health challenge that requires concerted efforts for effective and sustainable prevention. Of all the systems with which people have to deal every day, road traffic systems are the most complex and the most dangerous [2]. In 2004, World Health Day, organized by the World Health Organization (WHO), for the first time had been devoted to Road Safety. Millions of others sustain injuries, with some suffering permanent disabilities. No country is spared this toll in lives and suffering, which strikes the young particularly. Enormous human potential is being destroyed, with also grave social and economic consequences. Road safety is thus a major public health issue throughout the world [10]. Spectrum of accidents are Road traffic accidents, industrial accidents, domestic and peri-domestic, railway accidents, agricultural accident, intentional or suicidal injuries, etc. But the epidemics of road traffic accidents are leading cause of mortality and morbidity. The alarming increase in mortality and morbidity owing road traffic accidents has been a matter of great concern globally [3]. However, incorporating new technology has not come about without cost.

Increase in transportation is associated with the rise in road accidents and premature deaths, as well as physical and psychological handicaps [1]. The International Red Cross has characterized the last 100 years as “the century of road death”. The first pedestrian death was noted in 1896 and the first driver died in crash in 1898 [4].

Speed is a major contributor for road crashes all over the world, more so in countries like India, that are building and expanding roads. Connecting roads to highways had greater speeds, greater crashes, and higher number of deaths. In crashes that occurred at high speed involving heavy vehicles and vulnerable road user, vulnerable road users were killed and severely injured due to crash impact and greater transfer of energy. The vulnerable road users accounted for 84% of deaths in Delhi and for nearly 67% on highways [8].

Most commonly affected road users are pedestrians and bikers, cyclists and drivers, out of these drivers are most commonly involved in most of the deaths and disabilities. This expanding epidemic targeting the young and productive generations is likely to take a heavy burden on the quality of life and socioeconomic growth of the region in particularly developing nation. The World Health Organization (WHO) in its international conference on RTA noted the importance of adequate data on traffic injuries. Indeed, accurate estimates of the public health burden of RTA can establish the priority of this public health problem, and provide a rational basis for policy decisions [5-7]. Due to the fast pace of modernization, and requirement of a vehicle for transportation are expanding rapidly, resulting in road traffic accident. The risk factors are increasing in some developing countries; for example, motor vehicle ownership may double within five years causing streets and highways to become choked by inadequately maintained vehicles [1].

Road traffic accident is the most common cause of severe head injury. It may cause multiple injuries in the same person. Head Injury is the single most common cause of mortality in vehicle accidents. Majority of RTA injuries are predominantly of the brain. One person sustains traumatic brain injury (TBI) every 21 seconds in the United States [10] at present, 5.3 million Americans are living with disabilities due to TBI and 50% of these are due to motor vehicle accidents. India also has the highest incidence of head injuries in the world. In our country, 60% of TBIs are caused by RTA. Fatality rate is 70/1000 vehicles, which is 25 times higher than in developed countries [9]. Although the number of RTAs has continued to rise in the world as a whole, the road traffic mortality rates show clear differences in the pattern of growth between high-income countries on one hand, and low-income and middle-income countries on the other. There has been a decrease in the numbers and rates of fatalities in high-income countries. At the same time, there has been a pronounced rise in numbers and rates in many low-income and middle-income countries [1].

Poor road conditions amount for a high percentage of road traffic accidents each year including deaths. Adverse weather conditions make driving dangerous. It also makes roads sometimes virtually impassable to drive along. The weather causes all sorts of wear and tear to road surfaces, by wiping away road markings and wearing away the top layer of the road that helps with the traction of tires. Sometimes accidents are caused by bad road design. This is when a part of the road or traffic control has been poorly placed or designed and can lead to increased accidents in the area. This could be anything from poorly placed signs blocking your view of incoming traffic at intersections to dangerous turnings off of busy roads [5].

Overcrowded and unsafe modes of public transport are major contributor to road traffic injuries and fatalities, particularly in low-income and middle-income countries because choice of transport mode is frequently related to socio economic status. A Kenyan study on Small scale public transport service vehicles (Matatus) and buses found that these vehicles are most frequently involved in fatal crashes and passengers in these vehicles account for 38 % of the total road deaths. In Sri Lanka, public transport buses are either owned by the government or private, there is an increased risk associated with travel on privately owned buses. The government buses are maintained by the Ministry of Transport and regulated to ensure safety, while the regulations are much less stringent for private owners running. The situation is almost similar to India. Visibility issue is also a matter of great concern with nearly one third of the crashes occurring during night times, visibility of people, vehicles and dangers on roads are important issues [11].

In March 2010 the United Nations General Assembly adopted resolution 64/2552 which proclaimed the period 2011 - 2020 as the Decade of Action for Road Safety, with the goal to stabilize and reduce the fatalities due to Road Traffic Accidents. Activities under the decade were launched on 11th May, 2011, in each and every part of the world. The Road Safety Tag is adopted as the official symbol, which aims to reduce road deaths and injuries across the world. The goal of the Decade is to stabilize and then reduce the road traffic fatalities around the world [6].

In many countries accident reporting is not complete and so the real number of casualties cannot be calculated. Ignoring it is not an option. If underreporting goes unrecognized, the magnitude of any road traffic safety problems are not known, or are seriously underestimated. This could lead to incorrect prioritizing, or to less efficient: inappropriate countermeasures. A real insight into the number of fatalities, injuries and accidents is needed in order to assess the actual magnitude of the road safety problem i.e. to give it the correct national priority. Road safety is also a health problem. Therefore the number of people who have died or been injured in traffic should be comparable with other death and injury causes. To make this comparison in relation to other causes of death possible, the real numbers are essential [12].

Beyond the enormous suffering they cause, road traffic crashes can drive a family into poverty as crash survivors and their families struggle to cope with the long-term consequences of the event, including the cost of medical care and rehabilitation and often funeral expenses and the loss of the family breadwinner. Road traffic injuries also place a huge strain on national health systems, many of which suffer from inadequate levels of resources [8].

Road safety has begun to receive some importance in recent years due to interest shown by national government, increasing motorization, attention by the media, involvement of automobile industry and concerns from public. As news of road crashes are beginning to become day to day news stories, concerns are being raised, that are still resulting in crisis management approaches. Despite this, road traffic injuries and other injuries are not on the public health agenda at national or state levels [13].

Traffic organizing measures are important specially where there is mixed traffic i.e. where different groups of road users are not separated and infrastructure. Over 90% of countries have some kind of national drink-driving law, yet only 49% of countries stipulate a legal blood alcohol concentration limit of less than or equal to 0.05 grams/deciliter (as recommended by the WHO report). Likewise only 40% of countries have a motorcycle helmet law that covers both riders and passengers and a mandate that helmets should meet a specific national or international standard. Only 57% of countries require seatbelts to be used by passengers in both front and rear seats, and while 90% of high-income countries have a law requiring young children in cars to be restrained with appropriate child restraints, only 20% of low income countries has similar requirements [14-16].

Road traffic accidents continue to be a social threat, incurring heavy loss of valuable human resource. The segregation of different types of road users is a key step. Encouraging safe behavior is important along with enforcement of road safety regulations.

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Volume 9 Issue 2 February 2018

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