

## Financial impact of road traffic accidents on the society

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### Abstract

Road traffic accidents (RTA) are a global problem resulting in deaths, physical injuries, psychological problems and financial losses. These financial damages have immediate consequences and long term consequences on the victims and their families. Different countries have different impact of road traffic accidents and therefore spend dissimilar amounts in their budgets to prevent the road traffic accidents. If the financial losses due to road traffic accidents are calculated and highlighted by the researchers, the respective governments will be willing to spend higher amount in their budgets to prevent such accidents; as governments will be able to directly see the benefits to their countries, of spending higher budget amounts. Various countries are acting differently to reduce this menace of road traffic accidents and World Health Organization (WHO) is celebrating "Decade for road safety" to reduce the accidents and thus the financial losses to the society.

**Keywords:** Road traffic accidents, financial losses, cost, economic loss.

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### Introduction

There are about 1.25 million deaths due to road traffic accidents in the world and 20-50 million cases of non-fatal injuries every year. Pedestrians, cycle users and motorcyclists are more vulnerable to accidents (1). Not only the victims but simultaneously their friends and family members are affected by the consequences of these road traffic accidents. Consequences of RTA, causes financial burden on the victims and their families, friends, employers, insurance companies and the governments. It is very difficult to measure exactly the financial loss for sacrifices and human sufferings (2).

Different countries have different problems and factors responsible for road traffic accidents as depicted by different studies in various parts of the world. Highest rate of deaths due to Road traffic Injuries (RTI) is in the Dominican Republic where there are 41.7 deaths per 100,000 population (3). In a study done in 2013 Nigeria has the 2<sup>nd</sup> highest rate of accidents in a list of 198 countries and recommended that condition of the vehicle, pavements, roads, environment and that of driver should be taken care of to prevent the accidents (4). In UK 65% of the accidents are due to driver error or reaction; injudicious action in 31%; due to inexperience or behavior in 28% and impairment or distraction in 19.6% of cases of fatal road traffic accidents (5). In USA alcohol was responsible for 82% of cases(6).

Financial loss to the victims or compensation can be calculated by different parameters. Financial compensation can be for pain and sufferings from the accident, financial losses of the future in the form of reduction in expectancy of life and future lost income. Past lost income on medical expenses, repair of vehicle, hire vehicle and travel expenses has also to be included for total financial loss. Insurance company outlay and interest on the compensation claim and legal fees are also part of financial losses and may be claimed in a case of motor vehicle accident claim(7). Financial losses due to accidents can be measured by adding costs of emergency services costs, medical costs, legal and court cost, lost productivity, property damages, workplaces loss, insurance administrations costs (6)(8). Wage and productivity loss, motor vehicle damage, employer's uninsured cost, fire loss and motor vehicle duplication costs also adds to the financial losses (8) .

There are some indirect losses due to RTA. Persons suffering from PTSD after accidents had more problems to return to work as compared to persons without PTSD because of their need of financial stability (9). There are also

job losses due to long leaves. Number of persons living with spinal injuries and traumatic brain injuries is increasing due to better medical treatment (10) and cost is increasing for maintaining such persons.

Calculation of financial losses is not easy. There is under reporting and misclassification of injuries and it can be improved by synchronizing hospital records and police records and guidelines should be developed for determining the economic losses. Various quality of life scales should be used; various surveys should be used & mild traumatic brain injuries and their socioeconomic costs should be included. Persons with low socioeconomic status also suffer from more traffic injuries (10).

Calculation of financial losses for RTA can also be done by Disability Adjusted Life Years (DALY) and Gross Domestic Product (GDP) per capita and utilizing this it was estimated that in 2005 there was loss of 167,752.4 million US \$ in the world. Majority of the losses (96%) were in low and middle income countries (11).

There are other ways of calculating these losses by utilizing data of years of life lost (YLL). In a study done in Kashan region of Iran in 2012-2013, 3754 years in males (18.4 per 1000) and 949 years for females (4.8 per 1000) (12) were lost and multiplying by average loss/year financial loss can be calculated.

Cost of treatment varies in different countries and in Brazil where men and young people are mostly involved in road traffic accidents and each hospitalization costs R\$ 1300 on an average (13). In Bangla Desh economic cost of the accidents involve 1-2% of GDP (14). Most of the victims do not have health insurance. In one study done in India in 2015, 74.8% of the victims had to spend more than Rs. 5000 and 73.2% of victims had to spend 10-11 times of their monthly income whereas only 3.5% of victims had health insurance cover(15). In India annual loss is about \$20 billion(16).

In USA each inhabitant has to bear a burden of \$ 784 for accidents equivalent to 1.6% of GDP. If quality of life values are added losses are of the magnitude of \$836 in 2010 in USA (6). In USA seat belt use prevented a loss of \$50 billion and not using it caused a loss of \$10 billion. Distraction of the driver caused a loss of \$40 billion (6).

In European Union there are 1.3 million accidents and 40,000 deaths annually which means 200 billion loss equivalent to 2% of GDP (17) and it has decreased by 45% between 2004 and 2014. In 2014, 25,000 people lost their lives (18).

In 2000 AD financial loss was to the tune of 1% of GDP (19). In 2004 it was estimated 1% of GDP for low income countries, 1.5% for middle income countries and 2% high income countries and global cost is estimated US \$ 18 billion in a year. Out of this low and middle income countries lose 6.5 billion (2). It has increased gradually in 2015 in the low and middle income countries financial losses by deaths and road traffic accidents are to the tune of 5% of GDP where as in the world 3% of GDP is lost in fatal road traffic accidents (20). In a report of WHO it has been reported that 90% of the fatalities are in low and middle income countries though they have half of the numbers of the vehicles in the world (21).

In the last three years 17 different countries have made rules and regulations for enforcing speed limits, seat belts, prevent drunken driving, using of child restraint seat and wearing of helmets by two wheeler users and WHO is trying to reduce the number of these deaths by 50% thus reducing the financial losses in the world due to RTI (22).

To reduce these losses in future, Google suggested autonomous driverless cars will reduce accidents by 90% (23) and thus reduce the burden by 90% due to accidents. Automated system will help to reduce the number of accidents and increase safety (24) and save economical losses.

## **Discussion**

Financial losses are due to injuries, deaths and property damages. To calculate the financial losses for human sufferings will always have ethical dilemmas. But due to increase in compensation cases in the courts all over the world some criteria definitely needs to be evolved to make it objective rather than subjective compensation. There are financial losses occurring in different continents of the world as shown by the various studies but all these

losses do impact their economies to the different extent. This impact is more felt in poor countries as compared to the rich countries (11)(20). Many families suffer due to poverty when their bread earners die or disabled (2). If more money is spent in budgets to take care of the factors responsible for accidents it will definitely reduce the incidence of road traffic accidents this will help in preventing the financial losses. Automated vehicle industry may greatly reduce the number of accidents thus preventing the financial losses to the victims and respective governments(23) but this will take a long time to develop and to be accepted by the people (24). If nothing is done it is estimated that by 2030 road traffic injuries will become the 7<sup>th</sup> leading cause of death and those countries who have made systematic efforts have reduced these losses (21).

### Conclusion

Financial losses due to road traffic accidents are a great burden on the victims, their families, different countries and the world as a whole and especially to the low and middle income countries that bear the major burden due to RTA. These financial losses are preventable by reducing the number of accidents by taking care of the factors responsible for these accidents. Money saved by these measures can be better utilized for developing the new and better roads.

### Conflict of interest

None

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