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Road Safety Improvement in India

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Abstract—"*Speed Thrills but Kills", despite having so many accidents every day, people want to accelerate their daily routine. There has been such a terrible environment due to a lot of accident on the roads of India that now all this is seen a big concern for road safety management. Road safety management studies on road accidents like how many people were injury and how many deaths occurred and think of many ways to reduce them. Each road the accidents are reported and the data related to accidents is also collected and these data is also reviewed. Due to very less information, the implementation of remedial measures on the basis of these reports is also not possible. The causes of accident are "Unsafe Conditions or Unsafe Acts" which is due to the condition of the road or due to the driver's position. This study shows that the public and drivers are still not aware of road Safety program and for this improvement road safety management has highlighted the lack of road safety awareness.*

1. INTRODUCTION

Total Network of roads in India is 5,472,144 Km as on 31 March 2015, which is the world's second largest network. The roads are classified as;

1) National highways

2) State highways

3) PWD roads

4) Rural and other roads.

There is approximately 1374 accident every day on the Indian Roads and 400 deaths by the analysis of road accident data 2015 (Ministry of Road and Transport and Highways)**.** Number of Road Accident and Number of Persons affected in 2005 to2015 is given in fig

The total motor vehicles registered in India were 2100232889 as on 31/03/2015. Accident is an incident occurring unexpectedly and unintentionally, it is occasioned by human negligence. Noticed from the above viewpoint and also thorough hindsight every road accident is an avoidable happening. Including considered all the suitable facts and also the suggestions that have come from the various quarters it appears to us that the four – dimensional approach that had earlier attempted by setting up four various working groups to go into the four issues of road safety namely, enforcement, education, engineering, and emergency care would be the perfect manner to approach the issues rising. In the aforesaid publication in which the relevant figures are pegged to the year i.e. 2015 numbered nearly 5, 01,423 resulting in about 1, 46,133 deaths occurred and about 5, 00,279 got serious injuries. Road accidents hence to have potential of being one of the biggest challenges to orderly human existence requirement immediate and urgent interruption. The quality of vehicles about 10%of totals the road accidents; 30% of the accidents is associated to characteristics of road such as pathway (about 10%), geometry level (10%) and the other factors (safety barriers, guardrails, signal) (Variana rosoline et al 2014). The latest development techniques in mobile communication gives permission a continuous monitoring of drivers behavior by means of acceleration, speed, acceleration rate of the vehicles and data collection of service record (Astarita et al.,2012).

Table 1: Number of Road Accident and Number of Persons affected: 2005-2015

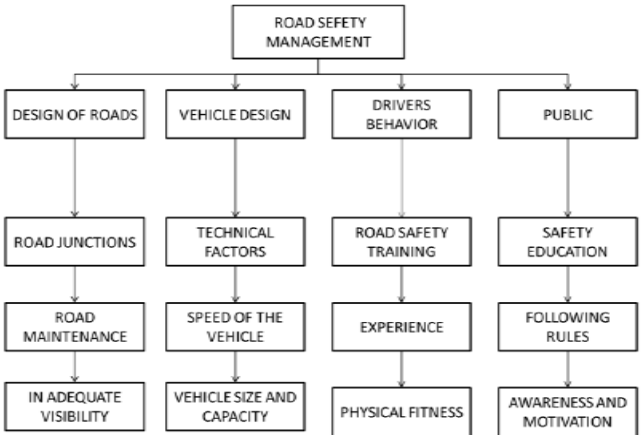
Year	Number of Accidents		Number of Persons		Accident Severity*
	Total	Fatal	Killed	Injured	
2005	4,39,255	83,491 (19.0)	94,968	465,282	21.6
2006	4,60,920	93,917 (20.4)	105,749	496,481	22.9
2007	4,79,216	1,01,161 (21.1)	114,444	513,340	23.9
2008	4,84,704	1,06,591 (22.0)	119,860	523,193	24.7
2009	4,86,384	1,10,993 (22.8)	125,660	515,458	25.8
2010	4,99,628	1,19,558 (23.9)	134,513	527,512	26.9
2011	4,97,686	1,21,618 (24.4)	1,42,485	5,11,394	28.6
2012	4,90,383	1,23,093 (25.1)	1,38,258	5,09,667	28.2
2013	4,86,476	1,22,589(25.2)	1,37,572	4,94,893	28.3
2014	4,89,400	1,25,828(25.7)	1,39,671	4,93,474	28.5
2015	5,01,423	1,31,726(26.3)	1,46,133	5,00,279	29.1

Source: Information supplied by States/UTs (Police Departments).
Figures within parentheses indicate share of fatal accidents to total accidents.
* Accident Severity : Number of persons killed per 100 accidents

2. ROAD SAFETY

To reduce road accidents, some measures have been suggested by Road Safety Management. These measures will be implemented in different classification of road network, so that road accidents can be reduced. Brief work for good road safety development is given in Table 2.

Table 2: brief work for good road safety development



There are many important issues in our country, of which road traffic is one of the most important issues in the road safety management. Road safety audits, inspections and black spot managements was developed and promoted by (Perandones and Ramos, 2008) which is the basic concept of safety.

3. DESIGN OF ROADS

In India the road networks are nearly 5,472,144 KM. The roads are designed only by keeping in mind all safety aspects but accident rate of the roads accidents are merely increased as to the extent. Designs of roads are divided as three types:

1) Road junctions

2) Road maintenance

3) Inadequate visibility

Roads design depends on the basis of location of the road, traffic congestion, Hospital areas and educational institutions, road dividers and road junctions.

4. VEHICLE DESIGN

Speed of the vehicle is most dangerous think for the accidents. Considering technical factors, speed of the vehicle, vehicle size and capacity, any motor vehicle should be designed because one of the major reasons for accidents is vehicle design. To make motor vehicles accident free motor vehicles, it should be designed in such a way that it can be controlled by motor vehicles even before the accident occurs. To ensure safe public vehicles, it has been suggested to the governments of all states that; a) The width, height and length of vehicles, b) The size, nature and condition of wheels and tyres, c) Brakes, d) Lamps and reflectors, e) Warning devices, f) The inspection of vehicles, g) Regulating the particulars exhibited on vehicles and the manner in which such particulars shall be exhibited.

5. DRIVERS BEHAVIOR

Road accident also depends on the extent of driver's behavior. There are the following factors discussing about the behaviors of drivers

1) Road safety training:

a) Wearing helmets should be compulsory,

b) Seat belt must be compulsory for passenger and driver sitting in front seat.

c) In the case of intoxicant driving, the traffic police should suspend the driving license, which should be implemented by the traffic police.

d) From time to time, the government should continue to provide road safety programs for drivers.

2) Experience:

a) An experienced person in driving can be less aware of the new safety aspects of road accidents, may also lead to major accident.

b) For experienced drivers too can attend the safety program to get the knowledge about the safety.

c) Experienced drivers should keep updating the new trends of safety aspects.

3) Physical fitness:

a) Every year drivers should build physical fitness and licensing method of drivers is to be digitized.

b) Each accident records should be jointed in the driver license in that case the licensing method is to be updated.

c) Above 50 years of aged drivers should not be allowed to drive for long distances.

d) In the country, driving license should be digitized so that the defaulter cannot get another license (upon cancellation or suspension of their license).

6. PUBLIC AND SAFETY EDUCATION

The general public does not know about basic first aid. There is no standardized toll free access number to call emergency medical assistance. Proper and safe transport is also not available for injured patients as road ambulance, air ambulance etc. In most accidents, the driver does not have any policy to claim any medical help for his emergency medical needs.

Children, students, college teens and the people should be given information about road safety so that they understand and follow the security aspects which are better for the development of the country. People should be informed about the laws and regulations of the Motor Vehicles Act so that they follow these rules. Motor vehicle driving at high speed, Driving in the wrong side, driver does not know about road junction, due to the long drive the driver is in the sleep, not using seat belt, no sign board about road junction, are the main reason for the accident.

7. SUGGESTIONS AND RECOMMENDATIONS

Road accidents are increasing every year in India. The main reason is that the people and drivers are not aware of road safety. To reduce the accident this study suggested that at every road junction, the sign and symbol of the roads should be equally and the speed of the vehicles be fixed near the junction. Seat belts, helmets should be worn by the driver and should use the indicators while turning lefts and right. The government should initiate road safety trainings for the drivers and make it must be compulsory for those drivers who have only participated in this training and program to get physical fitness certificate.

8. CONCLUSIONS

It has been stated in this study that accidents on India's roads are a major concern for road safety management and to decrease the road accidents, some measures also have been suggested by Road Safety Management. Road safety awareness program were organized for the public and they were trained. Frequently people are affected from minor and major accidents are reported and recorded for improving the great road safety improvement in India.

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