

Original Article

AN ANALYSIS OF PEDESTRIAN ACCIDENTS IN SABARKANTHA DISTRICT

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ABSTRACT

The study of the road traffic accidents on selected highways and town/village roads of Sabarkantha district, Gujarat was conducted for the period of one year (from January 2002 to December 2002), during this period, total 512 event of road traffic accidents were recorded in the district, It is observed that the Pedestrian accident (37.78%) dominates overall the other types of accidents. Among the 193 events of Pedestrian accident, 158(81.87%) were non-fatal and 35(18.13%) fatal. The maximum number of events (62.69%) took place during daytime and 37.31% of events took place during dark hours. Analysis also shows that highest number of events (35.23%) took place on town/village roads.

Key words: Road traffic accidents, Non-fatal and fatal events, Pedestrian, Dark hours.

INTRODUCTION

Accidents today are among the leading causes of death. Thus, while medical science has conquered the revenges of many diseases, accidents have become the new “epidemic” of public health importance calling for equal effort for control and prevention. Due to these reasons World Health Organization recognize the problem and made it as a theme “Road Safety” for the year 2004-2005. Motor vehicles claim the largest toll of life and tend to be more serious.

Rapid urbanization, modernization and industrialization have increased the problem of traffic. Motorization refers to the influx of motor vehicles, including high performance cars, trucks, and motorcycles, without concomitant changes in roads, pedestrian patterns and traffic enforcement capabilities. Although the bicycle continues to be world’s leading vehicle for transportation, the global increase in automobiles has been truly staggering.^{1, 2} The road network in India is divided in to two categories(urban & non-urban) with the non-urban roads being further divided in to three main classes-national highway, state highway and village roads. In India the traffic on highways or on urban road is heterogenous and includes fast moving vehicles like trucks, buses, cars, scooters and slow moving vehicles like

bicycles, bullock-carts, camel-carts and also cattle and pedestrians. Not only that, but also the growth of number of vehicles playing on roads has outpaced the growth of roads which has increased the traffic problems resulting in congestion, delays and accidents.³

There is no panacea that will prevent all road traffic accidents; organized teamwork by people in many disciplines such as educators, engineers, medical practitioners, psychologists and enforcement officers, is necessary for effective prevention.⁴

MATERIALS AND METHODS

Present study of pedestrian accidents was carried out in Sabarkantha district. The total population of Sabarkantha is 20,38,416 (2001 census) which is 4.12% of total population of Gujarat state. The national highway No.8 between the two metropolitan cities, Delhi & Mumbai, cross this district. State highways passing through the district connect the historical places of Ambaji and Shamlaji. Because of the above reasons, roads of Sabarkantha district are very busy for vehicles both for transport of passengers and goods. Study area included national highway, two state highways and town village roads.

Table 1: Pedestrian Accidents According to Time Period.

Time period	No. of events of pedestrian accidents		
	Non-fatal (%)	Fatal (%)	Total (%)
Day Light*	108 (68.35)	13 (37.14)	121 (62.69)
Dark Hours**	50 (31.65)	22 (62.86)	72 (37.31)
Total	158 (100)	35 (100)	193 (100)

($\chi^2 = 11.92$; d.f=1, $p < 0.05$)

*Day light ≥ 6 am to 6 pm < ; **Dark hours: ≥ 6 pm to 6am <

Table 2: Distribution of Pedestrian Accidents According to Road Category

Road category	Nonfatal events (%)	Fatal events (%)	Total (%)
Town/village road	58 (36.71)	10 (28.57)	68 (35.23)
State highway	54 (34.18)	11 (31.43)	65 (33.68)
National highway	46 (29.11)	14 (40)	60 (31.09)
Total	158 (100)	35 (100)	193 (100)

Study was conducted during 2002 (one year period) and during this period total 512 event of road traffic accidents were recorded in the district. Out of 512, 193 pedestrian accidents were analyzed. A pre designed and pre-tested proforma was used.

Table shows that out of nonfatal events, 68.35% took place during daylight and 31.65% in dark hours. Out of all fatal events, 62.86% events took place during dark hours and 37.14% during daylight. Chi Square test is highly significant.

Table shows the highest number of Pedestrian accidents takes place on Town Village Roads (35.23%) followed by State highway (33.68%) and National Highway (31.09%). According to separate road category, highest numbers of fatal accidents (40%) recorded on National Highway.

DISCUSSION:

The study was carried out during January 2002 to December 2002, during this period, total 512 events of road traffic accidents were recorded. From these 193 pedestrian accidents, its time (in hours), place (road category) and severity (nonfatal and fatal) were analyzed in the above study of road accidents. 62.69% pedestrian accidents recorded during day tome (6am to 6pm) and 37.31% during dark hours (6pm to 6am). Among the 193 events of road traffic accidents, 158(81.87%) were non-fatal and 35(18.13%) fatal. In dark hours, fatal events are more (62.86%) than day light.

Maximum number of events took place on the town /village roads (35.23%) followed by state highways (33.68%) and national highway (31.09%) Pedestrian accidents were dominated on town/village roads and state highway. On National Highway, highest fatal pedestrian accidents (40%) were recorded followed by state highways (31.43%) and town village road(28.57%).

The difference might be due to more number of vehicles with high speed passing through the national highway and here there may be fewer vehicles on State highways and town/village roads, but we were not able to measure it, this is the limitation of the study. The events were less on village roads suggesting that the overall speed of vehicles might be slow on the village roads than the speed on highways.

In the above study, the data shows that majority of accidents (62.69%) happen during daylight hours. This is generally due to high traffic volume during the daytime. During the daylight hours, there is highway traffic and local town traffic. Bhuyan P.J., in his study of epidemiology related to road traffic accidents also shows similar results about events that took place during different time periods.⁵

Out of 512 road accidents events, Pedestrian accidents (37.80%) dominate overall the other types of accidents. Singh Harman, in his study of pedestrian accidents also shows the Pedestrians were the commonest group of victims involved in fatal road accidents comprising 28.7% of all cases.⁶ Similar observations were made by Sevitt⁷, Chandra et al⁸, Galloway and Patel⁹, and Maheshwari J. & Mohan D.¹⁰ It is difficult to give one single good reasons for this difference, which may have many causes, but it is possible that because the roads in India are with heterogeneous traffic and more crowded with pedestrians and also there is less separation between pedestrians and vehicles. In addition, Pedestrians hit by heavy vehicles can suffer fatal injuries even at low velocity.¹¹

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