

Original Research Article

A study of deaths due to railway fatalities at a tertiary care hospital mortuary 2015-16

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ABSTRACT

Background: Railway accidents according to the NCRB, 25,006 people died and 3,882 were injured in a total of 28,360 railway accidents across the country in last year. Railway crossing accidents like India has an extensive rail network with high levels of injury and violence.

Methods: This study was conducted at Forensic medicine department, PIMS (pondicherry institute of medical sciences). The study group consisted of all the victims reporting to PIMS hospital Mortuary, during the period of study (January 2015-January 2016) were subjected to thorough post mortem examination and the pattern of injuries were noted.

Results: A total of 300 postmortems, performed at the mortuary of the Dept. of Forensic Medicine, DMC during the period of January to December 2016, were studied. Of them 164 (54.89%) cases were of accidents, 72 (23.19%) cases were suicide, 54 (17.12%) cases homicide, 8 (2.46%) cases undetermined and 2 (0.80%) cases were of natural deaths. In this study accidental deaths were commonest, seen in (72.12%) cases followed by suicidal (20.63%) and least was homicidal seen in (7.16%) cases.

Conclusions: Deaths have occurred in association with railway since the inception of railway in the present study males are commonest victims of railway deaths which concurs with studies conducted by other authors. Helpline numbers should be printed inside the coaches to inform the authorities in case of emergency. Railway should strictly implement the laws of railway acts and the people should be penalized for breaking the rules for the safety of passengers.

Keywords: Death and railway accidents, Railway fatalities, Tertiary care

INTRODUCTION

In many countries including India developed speedily in every sector and with development of different sectors all over India population based problems also rises in significant manner.¹ Railway accidents do occur and for which both human error and mechanical failures have always been blamed. Moreover, Railway premises being the most suitable shelter for homeless and beggars, it also

accounts for deaths due to natural causes in persons who are victims of poverty and trafficking.² Accidental deaths on railway tracks are also a common occurrence. They are usually because of a person trying to cross the track/collision between trains, automobile accident in unmanned crossings, passengers who hang out of doors and are hit by trees/poles or during outbreak of fire.³ Railways being one of the most comfortable means of transportation have a long history and an unprecedented

contribution to the human civilization. Originally developed for the transportation of goods from one place to the other, Railways have now entered human life, making day-to-day travel and vacations more comfortable.⁴ For the common man, Railways provide affordable, fast and reliable means of day to day transport and also a mode of travel for vacation and religious pilgrimage. Every setup has its own flaws which at times breakdown and railways are also no exception.⁵

In developed countries the usual sources of data on injury include police information reports, vital statistics, and hospital records. As well as being useful in one-off research investigations, these sources are of value when analysed on an ongoing basis in order to follow trends and assess the success or failure of safety policies.⁶

Accidental deaths are unfortunate events resulting from carelessness, unawareness, ignorance or a combination of causes and occur under unforeseen and unplanned event or circumstance. Falls, automobile accidents, and in-home electrocutions are examples of accidental deaths.⁷ Suicidal deaths are the acts or an instance of taking one's own life voluntarily and intentionally especially by a person of years of discretion and of sound mind. Assisting or attempting suicide can be a crime. Suicides are deaths caused by the dead person's own hand.⁸ Intentional, self-inflicted gunshot wounds, drug overdoses and self-suspension, poisonings are the causes of suicidal deaths. Accidents lead causes of death. Suicide is the second commonest manner of unnatural death flanked by accident and homicide. The etiology of suicide still remains unknown.⁹ Railway crossing accidents like India has an extensive rail network with high levels of injury and violence. We investigated the reporting and frequency of railway injuries and examined their reduction through a range of interventions.¹⁰ The cause for head injuries came from railway accidents (11.2%) followed by assault (8.9%) and lastly by the fall from height (1.1%). Due to increasing population in India, the mass transit modes are getting over crowded both inside the vehicles as well on the platforms. Accidents happen during boarding or getting out of the train.

Maharashtra reported the maximum or 7,969 such cases in which 5,024 people were killed and 3,208 were injured. In cities, the maximum number of deaths was reported in Delhi (856), followed by Bhopal (132), Allahabad (92) and Jabalpur (76).

Telangana had an unusually large number of railway crossing accidents with 1,061 or 41.65% incidents being reported from the state.¹¹ The National Crime Records Bureau (NCRB) has recorded railway-related accidents in two categories - railway and railways crossing accidents. The leading cause of deaths in railway accidents was fall from trains/collision of trains with people on tracks, which together accounted for 13,542 deaths. Other causes include - collisions (99 deaths), derailments (59),

explosion/fire (32). Cause for rest of the cases are not known.¹²

METHODS

This study was conducted at Forensic medicine, PIMS (pondicherry institute of medical sciences). The study group consisted of all the victims reporting to PIMS hospital Mortuary, during the period of study (January 2015-January 2016) were subjected to thorough post mortem examination and the pattern of injuries were noted. Information regarding demographic details, manner of death collected and eighbou from FIR (First Information Report), panchanama (Inquest report), death notes if any, suicide notes, detailed circumstantial evidence and post mortem examination. Manner of death was established as suicide with the help of suicide note/death note, classical decapitation, FIR, panchanama, history obtained from the family members of the deceased; and as homicide by the presence of external and internal injuries like chop wounds, stab injuries etc which don't concur with the railway incident, circumstantial evidence, panchanama, police investigation reports.

Statistical analysis

Using SPSS software version 10 statistical analyses was done. The efficacy and safety variables using Student 't' test.

RESULTS

A total of 300 postmortems, performed at the mortuary of the Dept. of Forensic Medicine, DMC during the period of January to December 2016, were studied. Of them 164 (54.89%) cases were of accidents, 72 (23.19%) cases were suicide, 54 (17.12%) cases homicide, 8 (2.46%) cases undetermined and 2 (0.80%) cases were of natural deaths. The maximum number of railway accidents happened in June or 9.4% of the total. And most of these accidents or 17.5% of total were reported between 6am and 9am. There were 300 rail way-related deaths and 440 serious injuries during the study period. Most deaths (180) were train-pedestrian collisions, and the fatality rate on the metropolitan lines was about 59 per 100 million passenger journeys. There was substantial under-reporting by the rail utility of both fatal (20% under-reported) and non-fatal injuries (at least 24%). Many injuries occurred during peak commuting times and alcohol played an important part, especially in pedestrian fatalities. Summer season recorded (36.12%) cases, rainy season (31.20%) cases and winter season recorded (32.68%) cases in this study. Thus, the seasonal distribution was almost uniform throughout the year.

Majority of cases (89.18%) were brought from the spot. This showed that victims died on the spot because of extensive injuries caused and inability to reach the hospital because there is no means of transport available.

Our study showed that in (69.34%) cases was not transected and multiple abrasions, abraded contusions, lacerations were present on the body. Along with the external injuries multiple fractures of the upper limb bones, lower limb bones, ribs, fracture of the skull bones with missing brain were present. Regarding the internal organs laceration of liver, lungs, kidney and spleen was common feature in accidental fall from moving train. Transection at the level of neck region was commonest in (16.48%) cases and was found mostly in suicidal cases followed by at the level of lower limb in (14.13%) cases.

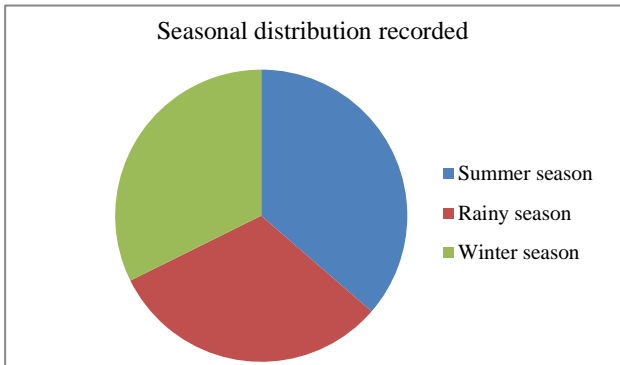


Figure 1: Deaths in railway fatalities.

In this study accidental deaths were commonest, seen in (72.12%) cases followed by suicidal (20.63%) and least was homicidal seen in (7.16%) cases.

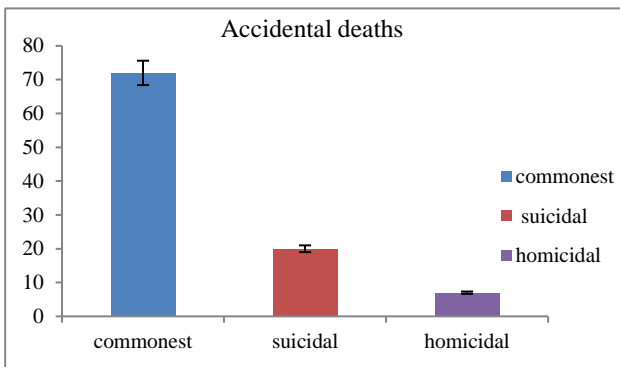


Figure 2: Shows accidental deaths.

DISCUSSION

Out of total 300 cases, (93.65%) were male while (6.35%) were female. Thus male: female ratio of 14.7:1 was observed. The members of the working group further recommended that the Ministry of Health and Family Welfare must open channels of interaction with Ministries of Defence, Railways and Labor (ESI), which are also running medical colleges and health care institutions. Ministry of Health and Family Welfare can explore the possibility of developing tertiary care centers at these institutions by providing financial and technical assistance on sharing basis and even transform health care institutions of these Ministries into medical colleges.

Deaths at the mortuary of the Komfo Anokye Teaching Hospital were probably underreported, even after the system was upgraded. Together with the circumstances discussed above, this would lead to underassessment of the true number of deaths from injury.¹³ Consequently, the finding that 8.6% of all deaths were caused by injury was probably too low. Deaths have occurred in association with railway since the inception of railway in the present study males are commonest victims of railway deaths which concurs with studies conducted by other authors. Probable reason being railways are cheap, Quick and comfortable mode of transport for travelling. In the present study, most commonly associated age group was between 21-30 yrs and significantly less in extreme ages. In this competitive era struggle for settlement failures in life, marital and financial problems compelled victims to take extreme decision for ending the life. This corresponds with other studies.

The manner of death is based upon history given by police, crime scene investigation and postmortem findings. Suicides outnumbered accidents. Suicide deaths due to train run over are common in males as they prefer hard methods of committing suicide than females and extensive injuries are due to primary impact. When the person lies down on the railway tracks there may be decapitation, amputation of limbs and dismembering of the body. Amongst 80 cases of suicide, 20 cases showed decapitation and 25 cases showed hemi section of body. In most of victims of railway accidents injuries over the head were fatal in nature which correlates with findings of other authors. In many cases, fatal injuries mutilated the body and involved more than one body region which is in accordance with Patil B, et al.¹⁴ As per the observation, deaths in the track and near the track can be attributed to the absence of any barricade to seclude the tracks. A frequently observe the attempt made by pedestrians to cross the standing train from below the bogies or through the doors or the links. Even passengers in the station at times cross the railway tracks to change the platforms rather than using the overhead bridge made for the purpose. A strict legislation and active role of the law enforcing agency can definitely minimise such misshape. Sometimes expression of heroism compounded by conduct disorder, use and abuse of psychoactive substance, all potentiates unlawful activities and maladaptive behaviour; which in turns exposes these groups of people to railway fatalities. to prevent a majority of railway related incidents it is imperative that the Railway and District Administration should go hand in hand and work implementation of the existing laws. In the recent times there has been numerous initiatives taken up by the authority to upgrade the level crossings and track conditions. Such initiatives would definitely bring down these unfortunate railway incidents and prevent fatalities. In terms of natural death cases, setting up of an organized emergency medical centre would facilitate to bring down those cases where acute intervention is necessary. Public awareness about safety measures and existing la also alleviate some of the fatalities.¹⁵

In our study most of the victims who succumbed to death due to railway injuries belonged to Hindus followed by Muslims owing to density of Hindu population which is more than the Muslims. Majority of railway deaths were seen in married male individuals who were bread earners of family, emphasizing the role of post marital stress, family conflicts, depression in life owing to stress of life and failures

CONCLUSION

Death due to trains is important cause of morbidity and mortality in India. With increasing population and overcrowding in trains railway fatalities are mostly accidental in nature. Railways are cheap, safe and efficient mode of travelling and are preferred by people for travelling and accidental death can be prevented by implementing simple measures both by public and railway authorities. People should be made aware by posters, banners about the hazards of boarding and deboarding from moving trains and travelling on foot boards. Over bridges and underpasses should be constructed by railway authorities where the railway lines are crossing the busy areas inside the cities. Slum around the tracks should be relocated elsewhere. Fencing should be done along the tracks in the busy areas to prevent the people from crossing the tracks as shortcuts and unnecessary walking over the tracks. Coach of the trains should have centralized system of opening the doors when the train is completely stopped, and the train should move only when the doors are completely closed and it is not possible to open it in mid journey. Helpline numbers should be printed inside the coaches to inform the authorities in case of emergency. Railway should strictly implement the laws of railway acts and the people should be penalized for breaking the rules for the safety of passengers.

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