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Original Research Article

An autopsy study of railway fatalities

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ABSTRACT

Introduction : Railway fatalities are not uncommon due to the wide net across the country covering diverse regions of the nation. It is essential to understand the Injuries Pattern, Manner and Cause of Death.
Aims & Objectives: To Study the Cause of Death, Manner of Death, Pattern & Nature of Injuries in Railway Fatalities.
Materials and Methods: A retrospective study conducted between 2009 to 2015. A total of 32 cases Reported. All cases referred to the Department of Forensic Medicine for Autopsy by the Railway Police.
Results: In the Present Study Railway Fatalities Contributed to 3.9% of the Autopsies. Major Age Group affect were 21-40 years contributing to 75% of cases. Mae to Female Ratio was 6.5:1. Suicidal Deaths Contributed to 75% of the cases. In Twenty Six Cases Body Parts were found in between the Railway Tracks and in thirty Cases Mutilated Parts were Found Distant to the Site of impact.

1. Introduction

Railway Accidents in India is Not Uncommon, because India has the largest railway in the world.[1] It is also one of the cheapest mode of transportation, that is spread across the Whole country. All this contributes to the Increase in Fatalities in such cases.

The increased railway traffic and its distribution over wide area of network across thousands of kilometers across the country covering, urban, rural and forest sectors pose a major contributing factor for the railway related accidents fatalities.[2,3] With railway lines crossing uninhabitated areas, has encouraged criminals to use it for committing crime and also an area to dispose of dead bodies and conceal crime.

Above all this, the easy accessibility to the network has made a prominent choice for the suicidee.

The majority of the dead bodies recovered as a result of railway accidents are in mutilated form, which needs careful evaluation of the primary, secondary impact injuries. It is also essentials to understand the disease process of the victim and its contribution and also important to differentiate ante mortem and postmortem injuries to understand the crime.

Hence the present study is one such attempt to Study the Railway Accident Fatalities.

2. Materials and Methods

The present Retrospective Study is done for the period 2009 to 2015. A total of 32 cases were Examined during this period. All the Autopsy Reports & Police Inquest Report along wihth the Photographs of the Autopsy and Crime scene were closely examined. The result thus obtained were analysed using sutiable tables and charts in the present study railway fatalities involving direct impact or run over were only analyzed. All accidents involving railway accidents or derailment or death due to accidental fall were excluded in the present study.

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3. Aims & Objectives

1. To study the cause of death in railway fatalities
2. To Study the Manner of Deaths
3. The position of the body parts at the accident scene
4. The sex & age distribution of the fatalities

4. Results

Total number of deaths due to railway fatalities reported.

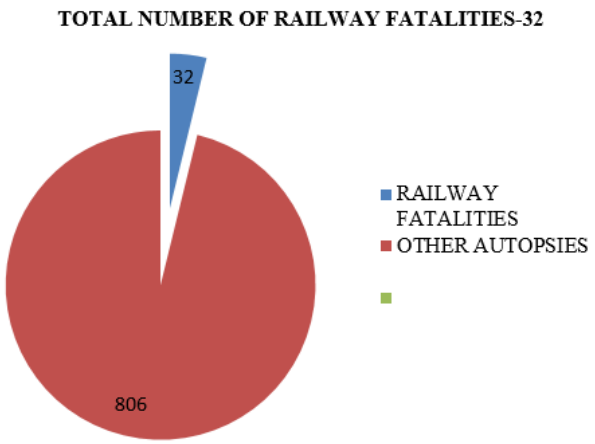

Fig. 1: Total number of railway fatalities reported during the period of study.

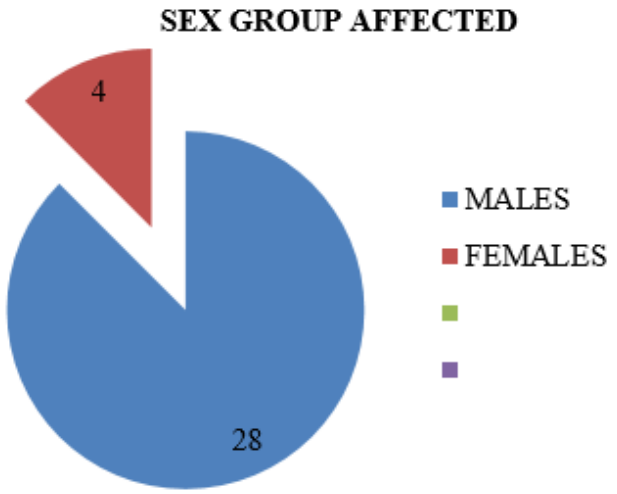

Fig. 2: Sex group affected

5. Discussion

In the Present Study out of 806 Autopsies Conducted during the Period, Railway Related Fatalities[3] contributed to only 3.97%[n-32] of the cases, This is Contrary to the Total number of Cases Conducted by Anil & Shiv Ranjan

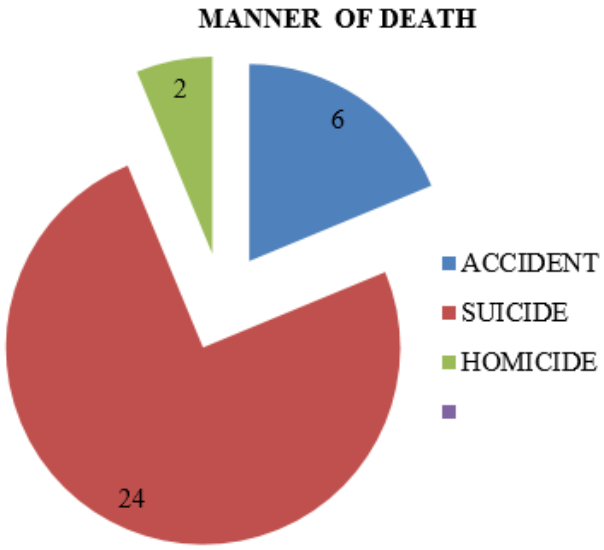

Fig. 3: Manner of death

Table 1: Age group affected

S.No.	Age Group	Total No
01	0-20	04
02	21-40	24
03	41-60	04
04	61-80	nil

Table 2: Type of bodies autopsied.

Identified bodies	Unidentified bodies
26	06

Table 3: Location of body parts in relation to railway track

Between Railway track	Away from Railway Track	Body Parts Distant to Site of Impact	Body Parts at the Site of Impact
26	06	30	02

Table 4: Cause of death

S.No.	Cause of Death	Total no
01	Traumatic Amputation of Limbs	06
02	Traumatic Transaction at Thoraco Abdomen region	08
03	Decapitation	04
04	Avulsed, Crushed and Laceration	12
05	Crush Injury to Head	02

Kumar,[4] wherein 9.35% of Railway Fatalities were reported during their Three Year Study. This Contrast is due to the Fact that that their Study was conducted in Government Medical College, whereas our study was conducted in Private Medical College. The other reason was due to the fact that jurisdictional distribution of cases limited to the Private medical College, other possible reason is the presence of Railway Traffic within the Jurisdictional Limits of the Private College Morgue.

In the Present Study, Major number of Fatalities involved Age Group 21-40, contributing 24 cases [75%], this resuls are in contrast to those made by Valsala K. et al,[5] wherein major number of the Victims belonged to 6th Decade of Life, however in the present study No Victims belonged to that age group.

However, the present study is close to observations made by Ibrahim Jibril et al[6] who recorded Maximum number of Victims in the age group of 30-39. This wide Variations between studies is possibly due to the Regional, Socio-Economical Factors and also Urban Factors involved in it.

In the present Study Male were the Major number of Victims[n-24/32], forming 7:1 Ratio, similar were the observations made by Moses et al,[7] wherein the Victims Sex Ratio was 6.5:1. The results are close to similar studies conducted by Ibrahim et al[5] and Radbo H.[8] The Majority of the Victims[n-26] were Identified Bodies in the Present Cases, however 19%[n-06] were Unidentified at the time of recovery of the mutilated remains. This is the major area of concern wherein the Identification of the Victims and necessary investigation will Delay the Autopsy of the Mutilated Remains, which may have a direct impact on understanding the Manner of Death.

In the present study twenty six of the victims remains were found in between the Railway Tracks and only in 06 cases the Mutilated parts were found away from the Railway Tracks. In Thirty cases the Victims Body parts were Located Distant to the Actual Site of Impact and in only 02 cases the body parts were close to the Site of Impact.

All this is possibly due to the position of the victim\ during the impact or run over by train, like walking head on to the rail, crossing over, running across the track or intentionally jumping in front of the track or sleeping in between the track. This study has made an attempt to understand this aspect which may help the investigator to understand the Address of the Victim, Identity and also the Manner of Death. These factors make this unique in its observation as compared to similar studies done elsewhere.

In the present Study 75% [n-24] of the victims were suicidee and only 19% [n-6] of Victims died due to Accident and only 6.25%[n-02] were due to Homicides. This is in Contrast to Study Conducted by Ibhraim Jebril,[5] Valsala K. et al,[4] Moses et al,[7] wherein their observations indicated Accidents as the common Mode of Death in 91.5, 62.5% & 63% of Accident Respectively. This Wide Variations is due to the Regional, Urban Factors, as it is widely known that Suicides are more common in Urban and Industrial Regions than in Rural Regions. The Presence of Psychiatric[9] conditions, Suicide Notes, Identifying Triggering Factors for Suicide like Marital Causes, Educational or financial Crisis etc were considered to confirm the Death as Suicidal.

In the Present study Decapitation was seen in only 2 cases, and they were designated Suicidal in Nature, the study conducted by Ibrahim Jebril[5] was Close to the present study, wherein he observed 40% of his victims showed Decapitation. Similar were his observations in terms of distribution and Nature of Injuries over Bodies. In the present study Traumatic Amputation oat the region of Thoracoabdomen region were seen in 25%[n- 08] Cases and Crushed head injury in 6.25%[02] cases. Pattern and Nature of Injuries are important to Differentiate Railway Accidents, and other Injuries.[10–13]

In the present study the importance of antemortem and postmortem differentiation of injuries played a vital role in homicide cases, as they were restrained and tortured before forcing them on the railway track, the same were made by the identification of restraint, offensive and defensive injuries.[14]

Hence, autopsy and investigation of the dead found on the railway track poses a greater challenge to the autopsy surgeon and the police officer. Meticulous examination of the dead for primary secondary injuries apart from defensive or offensive injuries, witness, technical evidence, psychiatric history of the deceased and other circumstances surrounding the dead is essential b to understand the manner and cause of death.

6. Ethical Clearance

The ethical clearance was taken from institutional ethical committee and they had cleared with a comment that it was postmortem study and no clinical trials was attempted.

7. Conflicts of Interest

The authors have no conflict of interest to declare.

8. Source of Funding

None.

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