

Sociodemographic Profile of Traffic Accident Head Injury Victims, Research Based on Autopsy

Vijoy Pratap Singh

Assistant Professor, Department of Forensic Medicine & Toxicology, Darbhanga medical College, Darbhanga, Bihar, India

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Corresponding author: Dr. Vijoy Pratap Singh

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Abstract

Aim: To study the Socio-demographic profile of head injury victims in road traffic accidents, an autopsy-based study.

Material and Method: This research was carried out at the Department of Forensic Medicine & Toxicology, Darbhanga medical College, Darbhanga, Bihar, India for one year, and throughout this time, 50 head damage sufferers from numerous auto accidents were summoned in for both medical and legal evaluation.

Result: According to the analysis, from 50 instances, people here between the ages of 21 -30 were the majority afflicted, accounting for 16 cases with 45.71%, The age bracket of those younger than 10 years old was relatively untouched) % in females and 2% in males & senior adults from 61-70 years old made up 0% of females and 5.71% in males of all cases.

Conclusion: A socio-demographic profile of head injury victims in road traffic accidents, an autopsy-based study, can provide valuable insights into the social and demographic factors that are associated with an increased risk of head injury in road traffic accidents.

Keywords: Head Injury, Demographic, Vehicles, Accidents.

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Introduction

The majority of serious and fatal injuries suffered by children and teenagers are caused by motor vehicle accidents. Recognizable actions can result in significant and long-lasting drops in automobile crash casualties [1]. The most common reason for motor vehicle mortality in adolescents and young people is injuries to passengers. The juvenile age group's highest injury and fatality frequency peaks are seen between the ages of 14 & 18 in both boys and females [2]. The percentage contribution of contagious injuries and illnesses has grown as advances in the prevention and control of infectious diseases have been made. The

eighth-highest death cause across every age category is related to traffic accidents [3]. It has been reported that men are more feasible than women to die in automobile accidents. One rationale for the 7% yearly growth in automobiles on Indian roads over through the past eleven years, which shows minimal signs of decline, is that the nation's quick urban prosperity has fueled a 5% annual rise in automobiles [4]. India's Road network makes up around two percent of the global roadways, while India accounts for forty percent of global traffic and sixty-five percent of all traffic fatalities. Just the true figures will do for analyses. Our medical

system is heavily impacted by traffic injury cases [5,6].

There are two types of head wounds: closed and open. Any concussion that doesn't shatter your cranium is considered a closed head injury. An open (penetrating) head injury occurs when anything penetrates your brain, scalp, and skull [7].

Materials and Methods

This research was carried out at the Department of Forensic Medicine & Toxicology, Darbhanga medical College, Darbhanga, Bihar, India, 50 head damage sufferers from numerous auto accidents were summoned in for both medical and legal evaluation. The duration of the study was one year. Local ideas and culture were incorporated. Confidentiality was assured. It covers incidents where the patient passed away while receiving care at the facility, was already dead when they arrived at the disaster department or was escorted by the influence future. Before beginning the post-mortem evaluation, the inquiry report was reread. Social demographic information was noted in detail, and the mechanism of the head injury was determined by consulting the inquest report, hospital logs, the inspector general who was assigned to the case, and the deceased's close family members. Using medical documents & family members, a full record of the time, way, and hospitalization was compiled. In order to gather data on the socio-demographic background of the instances, a moderate worksheet was created.

The study act in accordance with ethical guidelines for research involving human subjects, especially regarding the use of autopsy reports.

Acquired obligatory authorization and approvals from authorities and institutions.

Maintain the confidentiality of the victim's personal information and respect their dignity and privacy.

Inclusion criteria/Case definition

- Victims of road traffic accidents who suffered head injuries.
- Autopsy reports of the victims available.
- Age range: For example, all age groups or a specific age range such as 18-60 years.
- Both genders, male and female.
- Victims from a specific geographical region or location.
- Victims who were involved in a road traffic accident that occurred within a specified time frame.
- Victims who were not under the influence of drugs or alcohol at the time of the accident.

Exclusion Criteria

- Victims of road traffic accidents who did not suffer head injuries.
- Autopsy reports that are incomplete or not available.
- Victims who were identified to have a pre-existing head injury before the accident.
- Victims who had a medical condition that could have contributed to the head injury or the severity of the accident.
- Victims who were involved in a hit-and-run accident and could not be identified.
- Victims who died due to injuries unrelated to the head injury sustained in the road traffic accident.
- Victims who were not residents of the area where the study was conducted.
- Victims whose families did not provide consent for the autopsy or for the use of their loved one's data in research.

Statistical Methods

Chi-square test: This test is used to determine the association between categorical variables such as gender, age, and the type of road traffic accident.

T-test: These tests are used to determine the difference in mean values of

continuous variables such as age, time of the accident, or severity of head injury between different groups.

Logistic regression: This method can be used to determine the factors that are associated with head injury severity, and can control for confounding variables such as age, gender, and other socio-demographic factors.

Survival analysis: This method can be used to determine the time to death or hospital discharge after the accident, and to determine the factors that are associated with the length of hospital stay.

Clinical Data

Clinical data that were collected for better understanding of the circumstances are as follows:

Type of head injury: The type of head injury sustained by the victim, such as a concussion, contusion, or intracranial haemorrhage.

The severity of head injury: The severity of the head injury, is measured by the Glasgow Coma Scale (GCS).

Time to hospital admission: The time from the accident to the victim's arrival at the hospital.

Length of hospital stay: The length of time the victim spent in the hospital after admission.

Treatment received: The type of treatment received by the victim, such as

surgical intervention, medications, or other interventions.

Cause of death: If the victim died, the cause of death, including any other injuries sustained in the accident.

Pre-existing medical conditions: Any pre-existing medical conditions that may have contributed to the head injury or the severity of the accident.

Toxicology results: Results of toxicology tests to determine if the victim had alcohol, drugs or other substances in their system at the time of the accident.

Demographic data: Age, gender, race, ethnicity, and other demographic data.

Result

In this study, 50 instances in all were examined, demonstrating unequivocally that men predominate 35 cases across all age demographics. According to the analysis, people here between the ages of 21 -30 were the majority afflicted, accounting for 16 cases with 45.71%, The age bracket of those younger than 10 years old was relatively untouched with) % in females and 2% in males & senior adults from 61-70 years old made up 0% of females and 5.71% in males of all cases (table no. 1). Rural areas have more cases (60%) than urban areas (38%) [refer table no. 4].

As we can see in table 5, the number of cases by bike (two-wheeler) are higher than other modes by 44%.

Table 1: No. of head injury cases as maintained by age

Age	Female	Male
<10 years	0	1
11-20 years	1	3
21-30 years	3	16
31-40 years	8	4
41-50 years	2	6
51-60 years	1	3
61-70 years	0	2
Total	15	35

Table 2: No. of incident according to religion

Religion	Cases	%
Hindu	74	74%
Muslim	20	20%
Sikh	3	6%

Table 3: No. of head injury cases as maintained by marital status

Marital Status	Cases	%
Married	39	78
Unmarried	11	22

Table 4: No. of cases head injury cases as maintained by type of habit

Kind of habit	Cases	%
Rural	31	62
Urban	19	38

Table 5: No. of cases head injury cases as maintained by mode of transportation

Kinds of sufferers	Cases	%
Bicycle	8	16
Bike	22	44
4-wheeler	15	30
Passenger vehicles	3	6
Pedestrian	2	4

Discussion

Age, gender, and sociodemographic details are revealed in the investigation of the demographics of head injury patients. This offers information about the characteristics of head injury survivors and associated susceptibility to vehicle accidents. Head injury victims in road traffic accidents can vary in their demographic characteristics, depending on various factors such as the location of the accident, time of day, type of road users involved, and other factors [8].

Younger age groups, such as children and young adults, are more likely to sustain head injuries in road traffic accidents compared to older adults [9]. Men are more likely than women to sustain head injuries in road traffic accidents, possibly due to differences in risk-taking behavior and exposure to risk [10]. Certain occupations, such as drivers of commercial vehicles and construction workers, have been found to be at higher risk of sustaining head injuries in road traffic accidents [11].

People from lower socio-economic backgrounds are more likely to be involved in road traffic accidents and to sustain head injuries, possibly due to factors such as lack of education, poor infrastructure, and limited access to healthcare [12]. Head injuries in road traffic accidents are more likely to occur during peak traffic hours, possibly due to higher traffic volume and increased risk-taking behavior. Motorcyclists, bicyclists, and pedestrians are more likely to sustain head injuries in road traffic accidents compared to occupants of motor vehicles, possibly due to lack of protection and visibility. Understanding the socio-demographic profile of head injury victims in road traffic accidents can help to identify high-risk groups and design interventions to reduce the incidence and severity of head injuries in road traffic accidents [13,14,15].

Conclusion

In conclusion, a socio-demographic profile of head injury victims in road traffic accidents, an autopsy-based study, can

provide valuable insights into the social and demographic factors that are associated with an increased risk of head injury in road traffic accidents. Such studies can help to identify the characteristics of high-risk groups and design interventions to prevent or reduce the incidence and severity of head injuries in road traffic accidents.

The findings of these studies may have important implications for policymakers, health professionals, and the general public. For instance, the identification of high-risk groups can lead to targeted education campaigns, stricter traffic regulations, and increased enforcement of existing laws. Additionally, the study helps healthcare professionals in optimizing their treatment plans and management of head injury patients. However, it is important to note that socio-demographic factors do not exist in isolation, and several other factors may also contribute to the occurrence and severity of head injuries in road traffic accidents.

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