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"DEMOGRAPHIC AND INJURIES PATTERNS OF PHYSICAL ASSAULT CASES BY BLUNT FORCE: A RETROSPECTIVE STUDY IN NEW DELHI"

Forensic Medicine

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ABSTRACT

This study investigates the demographic and injuries aspects of physical assault autopsy cases presented at MAMC & Associated Hospital in New Delhi. Analyzing data from January 2018 to December 2022, the study reveals that the 21-30 age group, particularly males, is most affected. Evening hours witness a peak in incidents, potentially influenced by social gatherings and alcohol consumption. Injuries vary, with bruises, lacerations, and abrasions being common, and head and neck injuries prevalent. These findings emphasize the importance of targeted preventive measures, especially for young males, and suggest ways for further research into underlying causes and risk factors associated with physical assaults.

KEYWORDS

Physical Assault; Demographic Patterns; Temporal Distribution; Retrospective Study

INTRODUCTION

Violence contributes significantly to disability, psychosocial issues, loss of life, and various health-related morbidities. Violence is characterized by the deliberate application of physical force or power, either in a threatened or actual manner, directed towards oneself, another individual, or a collective group. This conduct significantly raises the risk of causing injury, death, psychological harm, maldevelopment, or deprivation. Violence is categorized into three types: self-directed, interpersonal, and collective. [1]It plays a substantial role in the global burden of disease and death, causing an estimated 1.6 million deaths in 2002, with one-third attributed to interpersonal violence. [2]Addressing physical assault, a component of interpersonal violence, could significantly reduce violence-related health events. Developed nations have implemented programs to control violence in communities, following guidelines from the World Health Organization (WHO). [1]The WHO recommends initiating violence prevention activities, starting with the surveillance of violence-related deaths and injuries.[1]

MATERIAL AND METHODS

The current retrospective observational and descriptive study focuses on autopsy cases presented at the forensic medicine department of MAMC & Associated Hospital, New Delhi, spanning from January 1, 2018, to December 31, 2022. Autopsy report sheets were the primary source of data. The study encompassed all cases of alleged physical assault brought to the hospital's Forensic Medicine Department during the specified period. Additionally, available injury reports, radiological findings, and specialist opinions were considered for each case.

For every case, pertinent information, including general details, demographic data, a concise history of the alleged incident, mode of injuries, types of injuries, and relevant investigations related to injuries, were meticulously recorded. Parameters such as age, gender, residence, and the rationale for medico-legal involvement were taken into account during data collection. Subsequently, the collected data underwent analysis and was presented through tables, graphs, and pie charts, utilizing various parameters. A comparative analysis with similar studies was also conducted.

OBSERVATIONS AND RESULTS

Table 1 illustrates the distribution of cases based on age and sex. In the age group of 1-10 years, there was one female case, constituting 8.33% of the total cases in that age range. The 11-20 age group comprised 9 male cases (11.68%) and 1 female case (8.33%), making a total of 10 cases (11.23%). In the 21-30 age group, 30 male cases (38.96%) and 3 female cases (25%) were recorded, resulting in a total of 33 cases (37.07%). For the 31-40 age range, there were 16 male cases (20.77%) and 4 female cases (33.34%), totaling 20 cases (22.47%). The 41-50 age group had 12 male cases (15.58%) and 1 female case (8.33%), amounting to 13 cases (14.60%). In the 51-60 age group, there were 8 male cases (10.38%), while the >61 age group had 2 male cases (2.59%) and 2 female cases (16.67%), contributing to a total of 4 cases (4.49%). The overall distribution included 77 male cases (100%) and 12 female cases (100%), summing up to a total of 89 cases (100%).

Table 1: Age and sex wise distribution of cases

Age	Male		Female		Total	
	NO	(%)	NO	(%)	NO	(%)
1-10	00	0	01	8.33	01	1.12
11-20	09	11.68	01	8.33	10	11.23
21-30	30	38.96	03	25	33	37.07
31-40	16	20.77	04	33.34	20	22.47
41-50	12	15.58	01	8.33	13	14.60
51-60	08	10.38	00	00	08	8.98
>61	02	2.59	02	16.67	04	4.49
Total	77	100	12	100	89	100

Table 2 provides a breakdown of cases based on the time of occurrence. During the period from 12 am to 8 am, there were 6 cases, constituting 6.74% of the total. From 8 am to 2 pm, 12 cases were reported, making up 13.48% of the overall distribution. The time frame between 2 pm and 8 pm accounted for the highest number of cases, with 42 instances, representing 47.19%. In the 8 pm to 12 am slot, there were 29 cases, making up 32.58% of the total cases. The comprehensive analysis of these time slots revealed a total of 89 cases, providing a comprehensive overview of the temporal distribution of incidents.

Table 2: Time of occurrence

Time of day	No of cases	%
12 am to 8 am	06	06.74
8 am to 2 pm	12	13.48
2 pm to 8 pm	42	47.19
8 pm to 12am	29	32.58
Total	89	100.0

Table 3 presents an overview of the types of injuries observed in physical assault cases. The most prevalent type of injury was multiple injuries, accounting for 39 cases and representing 43.82% of the total. Contusions were the second most common, with 34 cases, constituting 38.20%. Lacerations were recorded in 32 cases, making up 35.95% of the overall distribution. Abrasions, another category of injuries, were

observed in 16 cases, representing 17.97%. A less frequent type, fractured tooth, was noted in 2 cases, contributing to 2.24% of the total cases. This detailed breakdown provides valuable insights into the diverse range and prevalence of injuries observed in the examined cases.

Table 3: Types of injury

Type of injury	No. of cases	%
Multiple injuries	39	43.82
Contusion	34	38.20
Laceration	32	35.95
Abrasion	16	17.97
Fractured tooth	02	2.24

Table 4 delineates the involvement of different body parts in the documented cases. The head and neck region emerged as the most commonly affected, with 35 cases, constituting 39.32% of the total. Following closely, the lower limbs were involved in 29 cases, representing 32.58%. Cases with injuries spanning multiple regions accounted for 27 instances, contributing to 30.33% of the overall distribution. The upper limbs were affected in 22 cases, representing 24.71%. Specific to anatomical regions, injuries to the anterior chest were observed in 21 cases, comprising 23.59%, while the posterior chest was involved in 13 cases, accounting for 14.60%. Injuries to the posterior abdomen were documented in 9 cases (10.11%), whereas the anterior abdomen and pelvic region were affected in 5 cases (5.61%) and 4 cases (4.49%), respectively. The genitalia were involved in 2 cases, representing 2.24% of the total cases. This comprehensive breakdown offers a detailed understanding of the distribution of injuries across various anatomical regions.

Table 4: Part of body involved

Part of body	Number of Cases	%
Head and neck	35	39.32
Lower limbs	29	32.58
Multiple region	27	30.33
Upper limbs	22	24.71
Anterior chest	21	23.59
Posterior chest	13	14.60
Posterior abdomen	9	10.11
Anterior abdomen	5	5.61
Pelvic region	4	4.49
Genitalia	2	2.24

DISCUSSION

In the current investigation, the age group most frequently impacted was 21-30 years, aligning with findings from prior studies (Reference No. 3, 4). This age bracket corresponds to a highly active phase marked by physical and social engagement, particularly in outdoor, sports, and recreational activities. Increased interaction and a higher likelihood of conflicts leading to physical assaults are attributed to this lifestyle. Contributing factors include risk-taking behavior and a certain degree of mental immaturity coupled with limited life experience. The majority of cases involved males (86.51%), with females constituting only 13.48% of the total cases, consistent with previous research (Reference No. 5, 6, 7, 8).

The cases distribution revealed that a significant portion (47.19%) of physical assault incidents occurred between 2 pm and 8 pm, while the least number of incidents (6.74%) took place between 12 am and 8 am. These patterns align with earlier studies (Reference No. 9-14), where evening hours witnessed increased gatherings and potential for conflicts, with alcohol consumption emerging as a contributing factor.

Various types of injuries were observed, with multiple injuries noted in 43.82% of cases. Bruises were the most prevalent injury type, seen in 38.20% of cases, consistent with findings in other studies (Reference No. 3, 4, 11, 16, 17). Lacerations were the next common injury, observed in 35.95% of cases, followed by abrasions in 17.97%. This contrasts with the results of Tomar et al.'s study (Reference No. 7) and Thube HR et al.'s study (Reference No. 18), where lacerations were reported as the most common injury type.

In line with numerous previous studies (Reference No. 3-5, 10, 11, 19), the head and neck were the primary body regions involved (39.32%). Lower extremities were the next commonly affected region (32.58%), differing from the study by Subba et al. (Reference No. 4), where the upper limbs were the second most commonly affected site. The pelvic region (4.49%) and genitalia (2.24%) were the least commonly involved body parts. Notably, the head is often the most affected region in physical assault cases due to its vital nature, as injuries to the head not only yield desired results but also disorient the victim, limiting their ability to resist effectively.

CONCLUSION

In conclusion, this study offers valuable insights into the demographic and temporal characteristics of physical assault cases. The most affected age group was 21-30 years, predominantly involving males. Evening hours emerged as a peak time for incidents, possibly linked to social gatherings and alcohol consumption. Various injuries, notably bruises, lacerations, and abrasions, were observed, with head and neck injuries being prominent. These findings underscore the need for targeted preventive measures, especially among young males, and highlight areas for further research on underlying causes and risk factors.

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