

# Retrospective analysis of pattern of injuries and cause of death in unclaimed dead bodies brought to Mortuary of Private Medical Institute

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## Abstract

**Introduction:** Establishment of identity is required both in living and dead bodies and in both civil and criminal cases. Unclaimed body is defined as dead person who had no next of kin or no relative or no authorized representative willing to make final disposition of the remains.

**Aims and objective:** The aim of this study was to determine the pattern and distribution of injuries and to find out the cause of the death in unclaimed bodies.

**Material and methods:** In this retrospective study all the autopsies of unclaimed body from September 2018 to August 2022 were included.

**Results:** A total 75 unclaimed body were brought to mortuary for autopsy. Out of 75 cases, 65 (87%) were male and 10 (13 %) were female. Majority of unclaimed bodies in this study belonged to age group 40-50. Contusion on the body was most common type of external injury. Lower limb was most common body part for external injuries. Skull was most common site for fracture. Temporal and temporoparietal were most common cranial bone fractured. Mandible was most common facial bone fractured. Liver laceration was most common internal organ injured in unclaimed bodies. Subarachnoid haemorrhage was most common intracranial haemorrhage. Most common cause of death in the present study was haemorrhage and shock due to antemortem injury.

**Conclusions:** Identification of unclaimed dead body need to be increased by police workforce. Bodies which are unclaimed should be brought to mortuary just after prompt investigation so that autopsy should be started before decomposition which may interfere with autopsy finding and even in identification of the unclaimed body. Colour photography, DNA sampling, finger printing and maintaining dental records should be done for every unclaimed body.

**Keywords:** Unclaimed bodies; Pattern; Distribution; Autopsy; Identification.

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## Introduction

Identification of an individual is one of the important medicolegal aspects of forensic medicine<sup>1</sup>. Identification means fixing the identity of an individual. Establishment of identity is required both in living and dead bodies and in both civil and criminal cases<sup>2</sup>. Unknown or unclaimed or unidentified body is defined as dead person who had no next of kin or no relative or no authorized representative willing to make final disposition of the remains<sup>3</sup>. There are various reasons when the body become unidentified or unclaimed which includes intentional mutilation, decomposition or natural or man-made incidences such as fire, building collapse, earthquakes, railways accidents, aeroplane crash or mass firing or road traffic accident or bomb explosion etc<sup>4</sup>. Purpose of the postmortem examinations is to identification of dead bodies, manner of death, cause of death, time since death<sup>5</sup>. Purpose of autopsy also includes especially in case of unclaimed bodies is to identify the sex, religion, race, age, dental formula, weight and height<sup>2</sup>. The unclaimed body brought for autopsy is placed in deep freezer of mortuary for 72 hours and if it is still unclaimed or unidentified the police officers have legal authority to dispose of the dead body<sup>6,7</sup>.

The aim of this study was to determine the pattern and distribution of injuries and to find out the cause of the death in unclaimed bodies brought to mortuary of Hind Institute of Medical Sciences (Private Medical Institute), Barabanki.

## Material and Methods

The present study is retrospective type of study. The unclaimed bodies brought to mortuary of department of Forensic Medicine and Toxicology, Hind Institute of Medical Sciences (HIMS), Barabanki for postmortem examination during the period of September 2018 to August 2022 (total 4 years period). During this period total 75 unclaimed bodies brought to mortuary for autopsy and all these were included in this study. Hind Institute of Medical Sciences (HIMS) is non-government/private medical institute, and its mortuary is authorized for autopsy of unclaimed bodies only. Data regarding unclaimed bodies such as sex, age,

cause of death, manner of death, pattern of injuries etc. was obtained from inquest papers, postmortem reports and detailed information provided by inquest officer at time of autopsy.

**Study periods:** 4 years duration from September 2018 to August 2022

**Sample size:** 75 cases

**Inclusion criteria:** Total autopsy done for unclaimed bodies.

**Exclusion criteria:** Unclaimed bodies which became identified.

## Results

A total 75 unclaimed body were brought to mortuary for autopsy during the study period. Data was collected and filled and analysed in excel sheet. Out of 75 cases, 65 (87%) were male and 10 (13%) were female (Figure 1). Majority of unclaimed bodies in this study belonged to age group 40-50 which included 23 cases (30.66%) followed by 30-40 age group which included 20 cases (26.66%) (Figure 2). Out of 75 cases, 8 cases didn't have any external injury (Figure 3). Contusion on the body (41.33% cases) was most common type of external injury followed by abrasion and laceration on the body (each constitute 34.66% of cases) (Table 1, Figure 4). Lower limb (44% of cases) was most common body parts sustaining external injuries (Table 2). Upper limb and finger were most common body part to be amputated (Table 3). Skull was most common bone fractured followed by ribs (Table 4, Figure 5). Temporal and temporoparietal bone were most common cranial bone fractured (Figure 6). Mandible was most common facial bone fractured followed by maxilla (Figure 7). Liver laceration was most common internal organ injured in unclaimed bodies followed by laceration of lung (Figure 8). Subarachnoid haemorrhage was most common intracranial haemorrhage followed by subdural haemorrhage (Figure 9). Most common cause of death in present study was haemorrhage and shock due to antemortem injuries followed by coma due to antemortem head injury (Table 5, Figure 10).

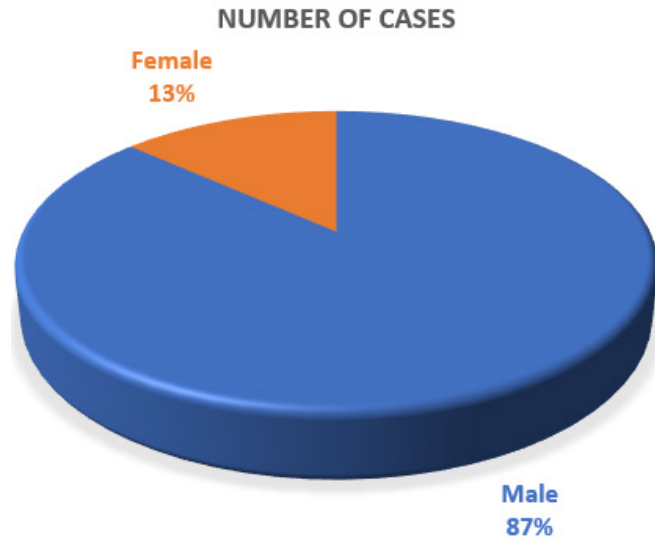


Figure 1. Distribution of sex

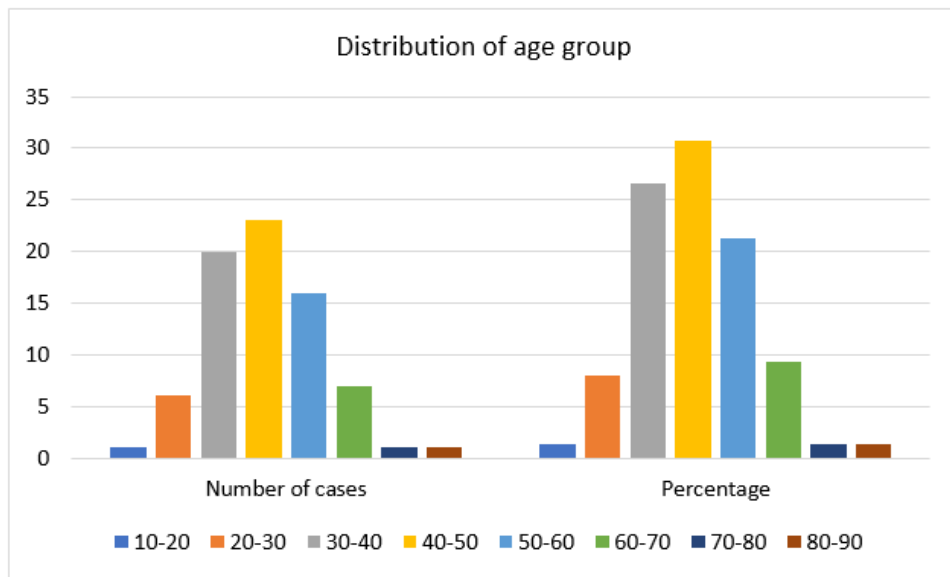


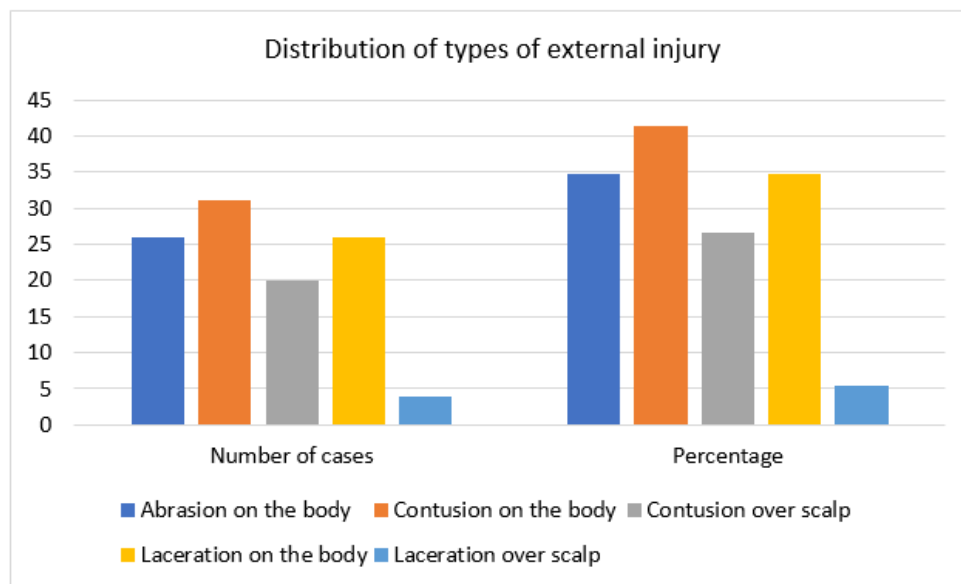
Figure 2. Distribution of age groups



Figure 3. Showing Distribution of external injury

**Table 1. Showing distribution of types of external injuries**

Types of external injuries	Number of cases	Percentage
Abrasion on the body	26	34.66
Contusion on the body	31	41.33
Contusion over scalp	20	26.66
Laceration on the body	26	34.66
Laceration over scalp	4	5.33

**Figure 4. Showing distribution of types of external injuries****Table 2. Showing distribution of injuries on various part of the body**

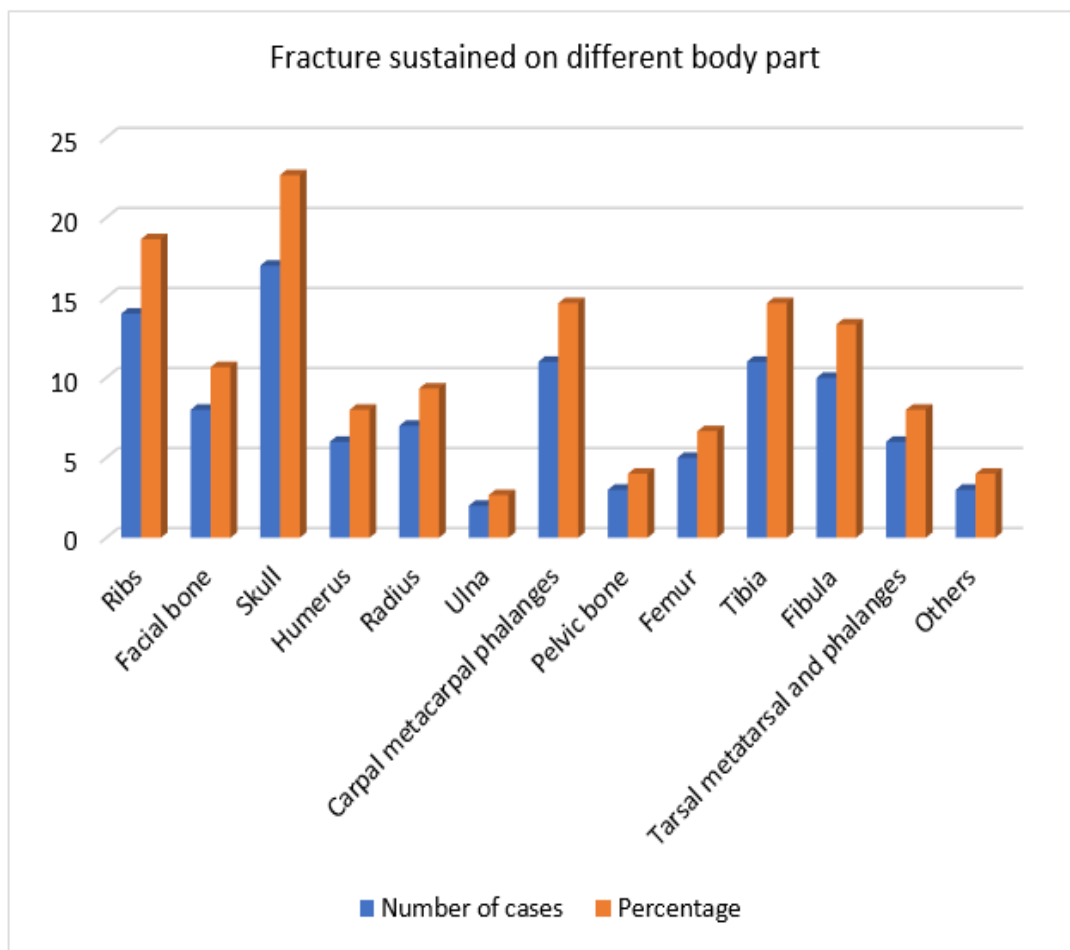
Distribution of injuries	Number of cases	Percentage
Head	26	34.66
Face	14	18.6
Chest	26	34.66
Abdomen	28	37.33
Buttock	12	16
Upper limb	28	37.33
Lower limb	33	44

**Table 3. Showing amputation of various part of the body**

Amputation	Number of cases	Percentage
Upper limb	2	2.66
Lower limb	1	1.33
Finger	2	2.66
Abdomen from thorax	1	1.33

**Table 4. Showing distribution of various fractures**

Distribution of fractures	Number of cases	Percentage
Ribs	14	18.66
Facial bone	8	10.66
Skull	17	22.66
Humerus	6	8
Radius	7	9.33
Ulna	2	2.66
Carpal metacarpal phalanges	11	14.66
Pelvic bone	3	4
Femur	5	6.66
Tibia	11	14.66
Fibula	10	13.33
Tarsal metatarsal and phalanges	6	8
Others	3	4

**Figure 5. Showing distribution of various fractures**

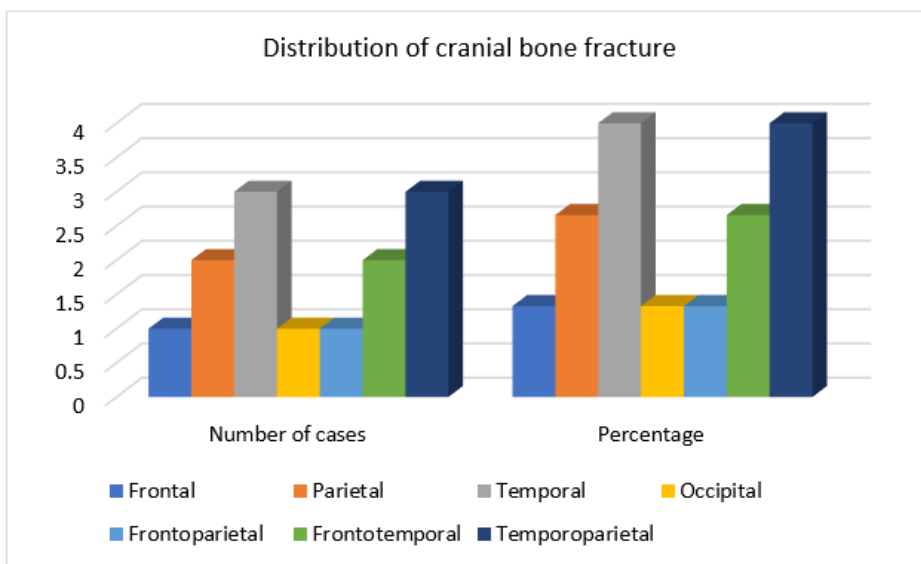


Figure 6. Showing distribution of various fractures of cranial bone

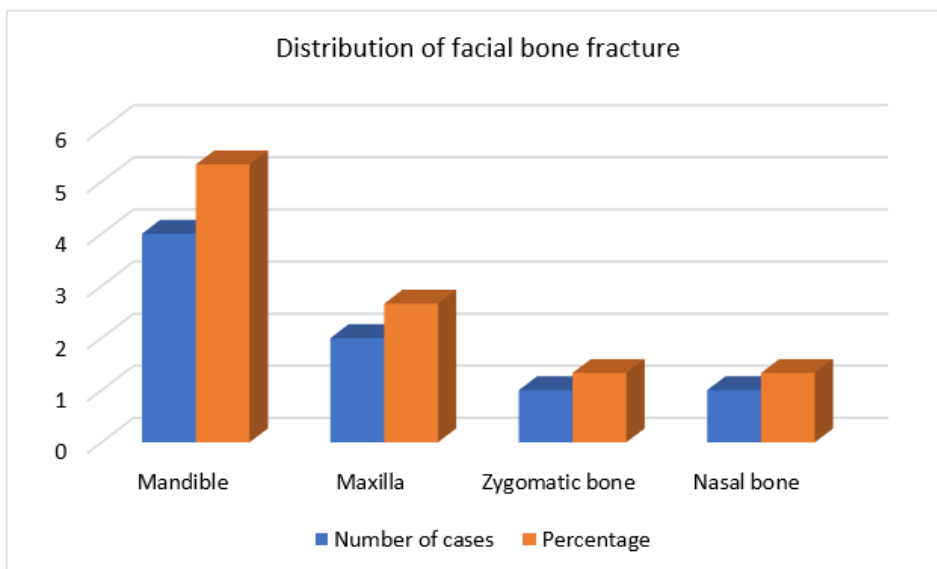


Figure 7. Showing distribution of various fracture of facial bone

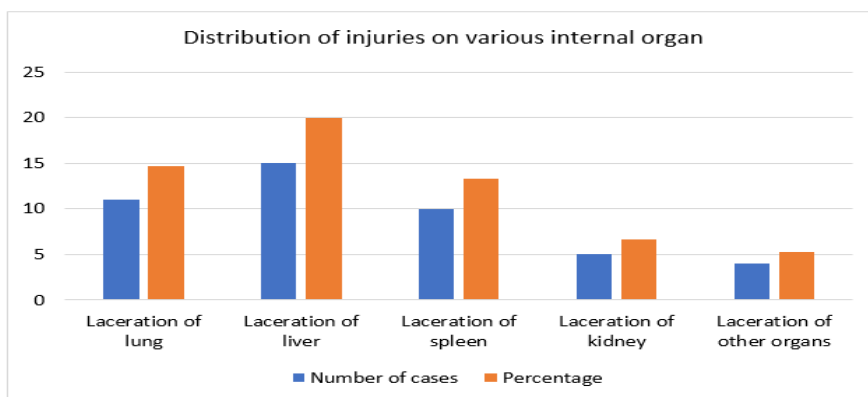


Figure 8. Showing injuries on various internal organs

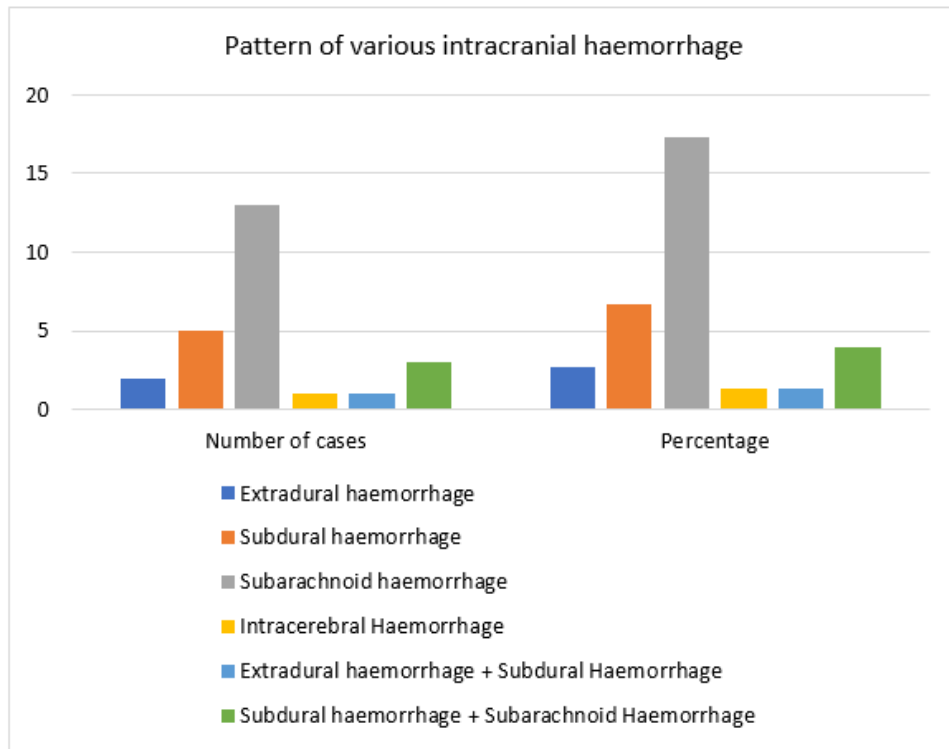


Figure 9. Showing distribution of various intracranial haemorrhages

Table 5. Showing cause of death

Cause of death	Number of cases	Percentage
Haemorrhage and shock due to antemortem injury	43	57.33
Coma due to Antemortem head injury	19	25.33
Septicaemia due to antemortem injury	4	5.33
Coma due to Cerebrovascular accident	2	2.66
Cause of death could not be ascertained	7	9.33

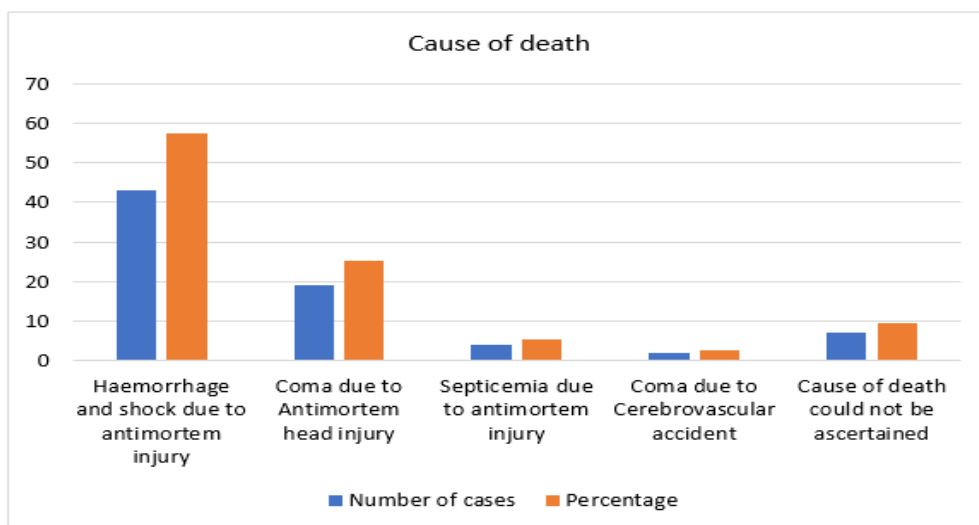


Figure 10. Showing cause of death

## Discussion

Identification of dead body is one of the important aspect of postmortem examination for several reasons such as humanitarian, ethical and generous need to know which person had died, especially for providing information to surviving family members or relatives to established the truth of death with regard to that person for legal, official and statistical purposes, to documents the identity of person died for administrative and ceremonial purpose, show to be true for life insurance contract claims and dependent's pension or any other financial matters<sup>8,9</sup>. Unclaimed bodies brought for autopsy comprises important, significant and challenging cases for every postmortem examiner's carrier<sup>10,11</sup>. These cases assess the skill of the concerned specialist and investigating agencies. These cases require vast time spending formalities such as 72 hours waiting periods, details of deceased person and photograph publication in leading newspapers etc. An autopsy surgeon plays vital roles not only by collecting data through examination and dissection of the dead body but also by giving opinion concerning manner, nature and cause of death<sup>2</sup>.

In our study there was male predominance which account for 87% of total cases which was exactly similar with study done in Kolkata (87% male)<sup>12</sup> and almost similar with study done in US (80% male)<sup>13</sup> as well as in Maharashtra<sup>11</sup> whereas higher value of male dominance found in the study done by Kumar et al in Chandigarh (97% male)<sup>14</sup> and was lower in comparison with the study done in Patna (78.07%)<sup>15</sup>. These finding correlates with the fact that male predominance patriarchal society where men leave home in search of livelihood earning, search for job etc. Some time family members are unaware of the employment place of the person and in case of death of such person his body remained as unidentified or unclaimed<sup>14</sup>. Most common age group of death in our study was 40-50 years followed by age group 30-40 years which was similar with study done in Chandigarh<sup>2</sup>. Reason for this age group to be most common is because of most active and mobile age group respect with socioeconomic point of view and hence vulnerable to unnatural death such as accidental, suicidal and homicidal. In our study 11% cases didn't have any external injury. Most common

type of external injury present in our study was contusion on body (41.33% of cases) followed by abrasion and laceration on the body (each account for 34.66%). Body part having highest distribution of external injury was lower limb (44% cases) followed by external injury on both upper limb and abdomen (each constitute 34.66% of cases) which was similar with study done by Md Jasim Uddin et al.<sup>16</sup> and Mandal et al<sup>17</sup> who in their study found that lower limb was most common site for external injury whereas Ranjan et al<sup>18</sup> in their study found that head and neck was most common site of external injury followed by lower limbs.

In our study common site of fracture was skull (22.66% of cases) followed by fracture of ribs (18.66% of cases). Most common cranial bone fractured in our study was temporal bone and temporoparietal bone followed by parietal bone and frontotemporal bone whereas study done by Mohan et al who found frontal bone as most common cranial bone fracture followed by parietal and temporal bone<sup>19</sup>. Most common facial bone fracture in our study was mandible (total 4 cases) followed by maxilla (total 2 cases). In the present study most common injury in vital organ was laceration of liver followed by laceration of lung followed by laceration of spleen which was similar with study done in Belagavi<sup>20</sup>. Most common intracranial haemorrhage in our study was subarachnoid haemorrhage followed by subdural haemorrhage which was similar with study of Mohan et al<sup>19</sup> and Nair et al<sup>21</sup>. Most common cause of death in present study was haemorrhage and shock due to antemortem injury (57.33% of cases) followed by coma due to antemortem head injury (25.33%) which was against with many studies<sup>18,21,22,23,24</sup> who in their study found that most common cause of death was coma due to head injury followed abdominal or chest injuries.

## Conclusions

Identification of unclaimed dead body need to be increased by police workforce. Investigation should be prompt with all up-to-date investigation approach. Police manpower should be increased. Bodies which are unclaimed should be brought to mortuary just after prompt investigation so that autopsy should be started before decomposition or before setting any artefact which may interfere with autopsy finding and even in identification of the unclaimed body. Colour photography, DNA sampling, fingerprinting and maintaining dental records should be done for

every unclaimed body. A universal online portal regarding missing person with all details like photographs, fingerprints, DNA profile, dental records, anthropometric data etc. should be started in India.

**Conflict of Interest:** Nil

**Source of Funding:** Nil

**Ethical Clearance:** Has been taken from the institutional ethical committee, Hind Institute of Medical Sciences, Barabanki.

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