

# Study on Occurrence of Autopsies in a Tertiary Level Hospital in Western Nepal

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## ABSTRACT

This study aims to explore the occurrence of autopsies in different death cases in a tertiary-level referral public hospital located in western Nepal. Western Regional Hospital (WRH) under the Pokhara Academy of Health Sciences, located in Gandaki Province of western Nepal, was taken as a representative public referral hospital for this study. This study also aims to analyze the frequency of respective death cases and its possible causes, impacts and role of authorities to minimize unusual deaths. Medical records maintained by the hospital in two full English calendar years, 2023 AD and 2024 AD, were analyzed for this study. It was found that suicidal death, accidental deaths and metabolic deaths were the major types of death found after autopsy. Higher numbers of male autopsies were found than females. Higher numbers of autopsy cases were in the age group of 25–40 years. Most of the cases were different forms and types of suicide, i.e. 47 percent and 50 percent in 2023 and 2024 respectively. Nearly half of the suicidal deaths, i.e. 49 percent, were caused by hanging in both years and were followed by poisoning, drowning and suicidal fall respectively. Accidental death: 43 percent and 36 percent in 2023 and 2024 respectively were found following suicidal death. Blunt force injuries, i.e. 47 percent and 65 percent in 2023 and 2024 caused by accidental falling, were found higher in accidental death. It was found that Road Traffic Accident (RTA)-related death and head injury-induced death were caused by any type of accidental hit or blunt force injury to the head. The Government of Nepal and its concerned ministries and agencies have been recommended to develop policies and strategies of minimizing unusual deaths related to road traffic accidents, different types and forms of suicide or suicide attempt, different forms of murder and the unnatural mortality of people.

**Keywords:** Western Regional Hospital, Autopsy, Medico-Legal Case, Suicidal Death, Accidental Death, Metabolic Death, Road Traffic Accident, Hanging, Poisoning, Drowning, Blunt Force Injury.

## INTRODUCTION

Autopsy is an examination of a dead body to analyze and find the cause of death and the extent of related matters. It is the cutting open examination of a dead body to discover the cause of death (Cambridge Dictionary). An examination of the body after death to determine the cause of death or the character and extent of changes produced by disease is an autopsy (Merriam-Webster dictionary). It is a surgical procedure that consists of a thorough examination of a corpse by dissection to determine the cause, mode and manner of death or to evaluate any disease of injury that may be present for research or educational purposes, (Wikipedia). Based on the purpose, there are four types of autopsies;

- a. Medico-legal autopsy
- b. Clinical Autopsy
- c. Academic Autopsy
- d. Virtual Autopsy

Basically, hospital autopsies are performed for Medico-legal purposes. Primarily, finding the exact cause of death is one of the major purposes and to determine if the death is natural or unnatural, to find the injury source as well as the extent of dead body and manner of death. Basically, there are different manners of death which are given below.

- a. Natural                                      b. Accident                                      c. Suicide  
d. Homicide                                      e. Undetermined

When the medical cause of death is not known or suspicious, they are subjected to an inquest. The objective of an inquest is to ascertain facts pertaining to the death. This is achieved by inquiry and at the conclusion of the inquest an initial verdict is made on whether the death was due to a natural, accidental, suicidal or a homicidal cause. A postmortem examination may become necessary in the deaths that come up for inquests. In these situations, the authority which conducts the inquest will order a doctor to perform a postmortem examination (medico-legal autopsy). To perform a medico-legal autopsy, consent from the relatives of the deceased is not required<sup>1</sup>. There are generally two types of autopsies: forensic or medico-legal autopsies and hospital or medical autopsies. Medico-legal autopsies differ from hospital autopsies in that they fall under the jurisdiction of a local governmental death investigation office (typically a coroner or a medical examiner). A coroner or medical examiner may legally order an autopsy and does not require consent from the legal next-of-kin<sup>2</sup>. In the broadest sense, a medico-legal autopsy generates an evidentiary document that forms the basis for opinions rendered in a criminal trial, deposition, wrongful death civil suit, medical malpractice civil suit, administrative hearing, or workers' compensation hearing.

The cause of death is the disease or injury that sets in motion the physiologic train of events culminating in cerebral and cardiac electrical silence. The manner of death is a pseudo-judicial classification of deaths. The mechanism of death is the physiological derangement set in motion by the causes of death that leads to the cessation of cellular electrical activity<sup>3</sup>. In Nepal, the post-mortem examination is carried out at the request of an investigative authority, i.e. Police. In each type of sudden, violent or unexpected death, or if the death is suspected or the cause of which is unknown, in such cases, first the police are informed, then the investigation starts with the preparation of an inquiry and the authorities request to perform the post-mortem investigation to a government hospital. Medico-legal autopsy is performed, as part of the inquest procedure, when ordered by the investigating authority. The inquisition authority is usually the police.

In the developing phase of each country, due to the poor physical infrastructure like road, bridges etc., many road traffic injuries leading to death might occur. People might have suffered negatively by facing frequent violent movements, struggles between and among the group of people. In such circumstances, disputes may be prolonged and some types of violent activities may occur, which might be the root cause of accidental, suicidal as well as any other type of unnatural death. Many suicide cases might be linked to the socio-economic condition, family and relationship problems and psychiatric status too.

About one person in 5,000–15,000 dies by suicide every year (1.4 percent of all deaths), with a reported global rate of 10.7 per 100,000 population in 2015 (it was 11.6 in 2008). Around 30 percent of global suicides are due to pesticide self-poisoning, most of which occur in rural agricultural areas in low- and middle-income countries. In high-income countries, consisting of the remaining 20 percent of the world's population, the most common methods are firearms, hanging and other self-poisoning. Europe is the most suicidal region in the entire world, while the Eastern Mediterranean is the top<sup>4</sup>.

According to a World Health Organization report for 2017, Nepal has an estimated 6,840 suicides annually, or 8.2 suicides per 100,000 people. Suicide is currently the leading cause of death for Nepalese women aged 15–49. Suicide was the leading cause of death for women of reproductive age (15-49). According to the report, "analysis of verbal autopsy data indicates mental health problems, relationships, marriage and family issues are key factors" with 21 percent of suicides among women of reproductive age consisting of women 18 or younger<sup>5</sup>. According to the WHO data Published in 2017, road traffic accident deaths in Nepal reached 4,921 or 3.01 percent of total deaths. The age-adjusted death rate was 20.13 per 100,000 of the population and Nepal ranks 79 in the world<sup>6</sup>.

According to the age-adjusted death rate estimates 2017, In the list of leading causes of death in Nepal, Road Traffic Accident (RTA) lies in 11th position (20.13 per 1,00,000 population), Falls in 24th (7.13 per 1,00,000 population), suicide in 25th (7.12 per 1,00,000 population), fires in 33rd (3.52 per 1,00,000 population) and

drowning in 45th position(1.43 per 1,00,000 population) respectively. Globally, RTA is in 79th place; fall in 63rd place, suicide in 127th place and drowning in 138th place respectively. RTA has covered 3.01 percent of total deaths occurring in Nepal. Similarly, suicide fell 1.05 percent, 0.97 percent, fires 0.54 percent and drowning fell 0.22 percent, respectively<sup>7</sup>.

Even though the development of better means of transportation, the RTA is one of the leading causes of death in Nepal, along with suicide, falls and drowning etc. respectively. According to the world happiness datasheet of 2018, the happiness index of Nepalese people is 4.880 and lies in 101th place in the world happiness ranking, whereas Finland was the happiest country in the world in 2018, securing a 7.632 score. China is in 86th place and India is in 133rd place in the same report<sup>8</sup>. This report has also reflected some information about people's sadness, so that suicide could be one of the leading causes of death in Nepal and in such types of deaths autopsies, specifically medical autopsies, have been performed in order to find the cause of death. Finding the cause of deaths in every medico-legal case might input the planning of related matters for minimizing such deaths. Therefore, it has been rational to carry out an empirical study of medico-legal autopsies performed in hospitals.

## METHODOLOGY

### Selection of a Tertiary Level Public Referral Hospital for this Study

Western Regional Hospital, one of the tertiary-level public referral hospitals located in Gandaki province in western Nepal, was selected as a representative public hospital for this study. It is a 500-bedded general hospital. The overall bed occupancy rate in hospital inpatient wards was 74.28 percent in the fiscal year 2018/019, which was rated as efficient management by the study using single criteria of bed occupancy rate<sup>9</sup>. In Nepal, autopsies are generally performed in government hospitals. Most of the medico-legal autopsy cases from neighboring districts like Tanahun, Syangja, Parbat, Baglung, Myagdi, Lamjung and Manang etc. are referred to this hospital because of the lack of experts, and mortuary building and equipment too. It is one of the most crowded tertiary-level public referral hospitals in Nepal where more than 10,000 medico-legal activities and, on average, more than 400 autopsies are performed annually<sup>10</sup>.

### Data Collection

Required data for this study were collected from the available hospital records maintained by the Medical Records Department and autopsy registers maintained by the Medical Records Department of the hospital. Two full English calendar years, 2023 AD and 2024 AD, were taken as the reference period for data collection and analysis. In the study of the autopsy report along with the filled inquisition form provided by the Nepal Police asking for autopsies, 322 cases were recorded in 2023 AD and 426 cases in 2024 in the hospital. Data for the separate years were transferred onto Excel sheets as well as SPSS to the necessary frequency tables, and graphs were generated for analysis.

### Limitation of this Study

This study was only based on data from Western Regional Hospital. It was fully based on the recorded autopsy cases in the corresponding department of hospital. The causes of death in some autopsies were not confirmed due to the timely unavailability of blood and viscera reports, which were not included in the study. A kind of verbal autopsy by asking the cause of death to the families and neighbors of the deceased could not be kept in the study. Due to time constraints and limited resources, this study was narrowed to a retrospective single-hospital-based study of the western region of Nepal, which was the major limitation of the study.

### Ethical Issues

Autopsy-related records maintained by the Medical Records Department of the hospital were collected and analyzed with due permission of the hospital authorities. A Senior Medical Record Officer employed by the same hospital collected and analyzed the information, maintaining the privacy of all records. Any personal information has not been disclosed for any reason, so it is declared that there are no ethical issues.

## MAJOR FEATURES OF THE DECEASED

### District wise Autopsy

The autopsies of deceased people residing in 38 and 37 different districts were observed in 2023 AD and 2024 AD respectively. Moreover, deceased of 4 and 8 foreign countries were also observed in the same years respectively. On an average monthly 27 and 36 autopsies were performed in 2023 AD and 2024 AD respectively. Out of the total autopsies in 2023, 54 percent of the cases were from Kaski district, where the hospital is located, 11 percent from Tanahun district 7 percent from Syangja district and so on. Similarly, in 2024 AD, 51 percent of cases were from Kaski, 10 percent from Tanahun and 6 percent from Syangja respectively. Interestingly, in both years, 3 percent autopsies of foreign bodies were performed. The overall sex ratio of the deceased performing autopsy was found to be 219 in 2023 AD and 244 in 2024 AD respectively. In the study, 69 percent and 71 percent of the total autopsies were male in 2023 AD and 2024 AD respectively. Similarly 31 percent and 29 percent of the autopsies were female in 2023 AD and 2024 AD respectively.

### Age Composition of Deceased

Age analysis showed that 8 percent and 10 percent of the total autopsy cases were children or pre-adolescents, i.e. below 15 years age group in 2023 AD and 2024 AD respectively. 26 percent and 23 percent of the cases were adolescent and young, i.e. between 15 and 24 years in 2023 and 2024 respectively. A high proportion of adult autopsies between 25 and 59 years, i.e. 55 percent, were observed in both the years. And 11 percent and 12 percent of those aged i.e. 60 and above years, autopsies were also observed in these consecutive years, respectively. In this regard, autopsies of the deceased of ages 93 years and 86 years were also found to be performed in 2023 and 2024 respectively. Female autopsies were found slightly higher in age groups 15 to 19 in 2023 AD, but in all other age groups in both years, male dominance was observed strongly (Table 1).

Table 1: Age Wise Classification of Deceased

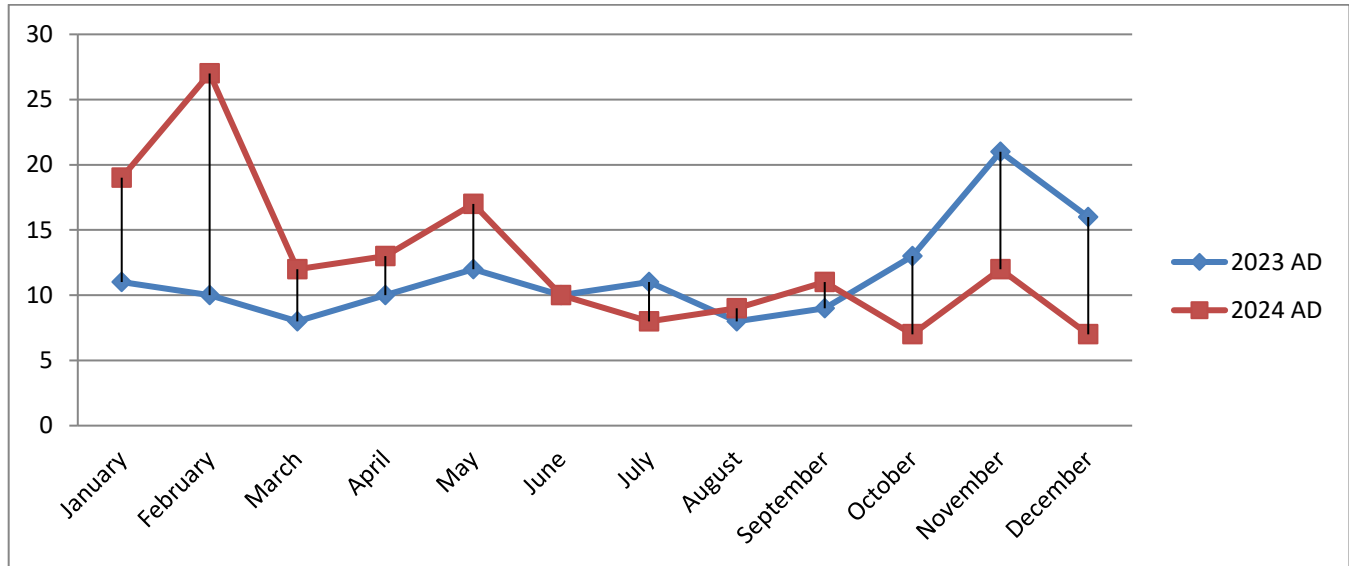
Age Group	2023 AD				2024 AD			
	F	M	Total	%	F	M	Total	%
<b>0-14</b>	11	16	27	8	15	27	42	10
<b>15-19</b>	19	16	35	11	22	24	46	11
<b>20-24</b>	10	38	48	15	13	38	51	12
<b>25-40</b>	27	73	100	31	32	104	136	32
<b>41-59</b>	18	58	76	24	27	73	100	23
<b>60 and More</b>	16	20	36	11	15	36	51	12
<b>Total</b>	101	221	322	100	124	302	426	100

Source: WRH Autopsy Records 2023, 2024

### Monthly Autopsies

The number of autopsies performed in the month of January was found higher in 2023, but it was found higher in May 2024. The highest frequency of autopsies was recorded in the month of May 2024, which was followed by February and June of the same year. Except in the months of January, October and December, the autopsies were found to be higher in 2024 than in 2023 AD. (Figure-1)

Figure-1: Monthly Autopsy Cases

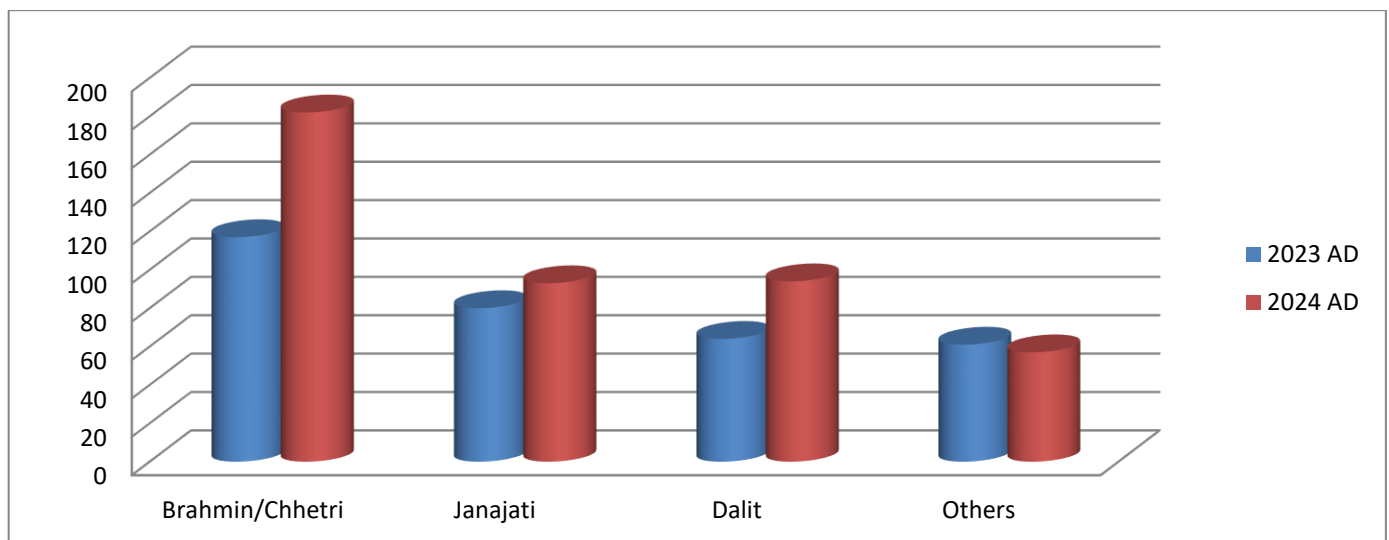


Source: WRH Autopsy Records 2023, 2024

### Ethnicity of Deceased

Studies showed that there was a dominance of Brahmin/ Chhetri autopsy cases, which was followed by Janajati and Dalit respectively. The autopsy cases of Brahmin/Chhetri community were found 36 percent and 43 percent, Janajati community 25 percent and 22 percent in the years 2023 and 2024 respectively. Similarly the autopsy cases of Dalit community were found 20 percent and 22 percent respectively. Similarly others and undefined ethnicity cases were also observed as 19 percent and 13 percent in both the years. The deceased of more than 25 ethnic groups were found in both the years. (Figure-2)

Figure-2: Autopsies on their Ethnicity Type

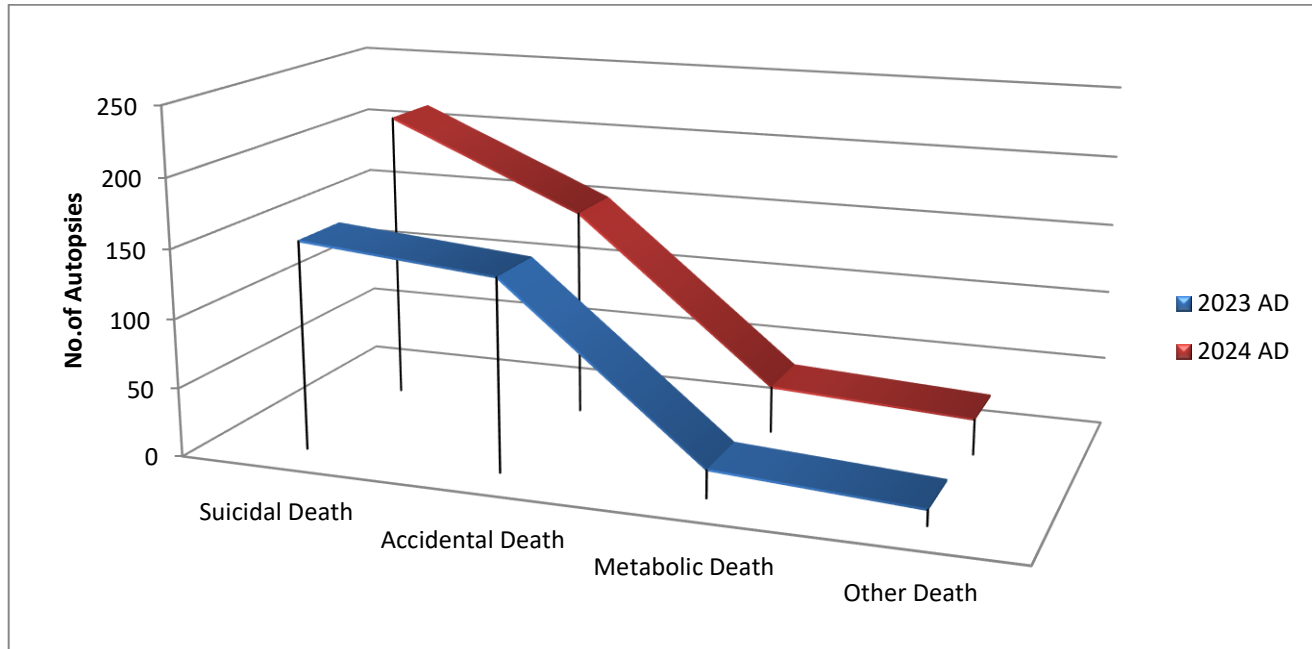


Source: WRH Autopsy Records 2023, 2024

### Autopsies on Their Type of Death

In the study, it was found that most of the autopsy cases belonged to suicidal deaths like hanging, poisoning etc. which was followed by accidental death like RTA, accidental falling etc. Other deaths were related to body metabolism, disease, body organ failure, etc. As the number of autopsy cases in 2024 was more than 2023 so that in almost all types there were higher cases in 2024 than in the previous year (Figure-3).

Figure- 3: Autopsies on Their type of Death



Source: WRH Autopsy records 2023, 2024

## SUICIDAL DEATH

In the study, four different types of suicidal practices were observed, which were Hanging, Poisoning, Suicidal Drowning and suicidal falls. Nearly half of the suicidal cases were hanging, which were followed by poisoning, Falls and Drowning respectively in 2023 AD and Hanging was followed by Drowning, Poisoning and Falls in 2024 AD. The sex ratio of the suicidal cases was found 162 and 215 in the years 2023 and 2024 respectively. (Table-2)

Table-2: Suicidal Death Statistics

Suicidal Death Statistics								
Type	2023 AD				2024 AD			
	F	M	Total	%	F	M	Total	%
Hanging	28	46	74	49	40	64	104	49
Poisoning	17	21	38	25	9	27	36	17
Drowning	9	10	19	13	14	38	52	24
Suicidal Fall	4	17	21	14	5	17	22	10
Total	58	94	152	100	68	146	214	100

Source: Analysis WRH Autopsy records 2023, 2024

## Age-wise Suicidal Autopsies

Studies showed that there was the highest suicidal death in the youth age group, i.e. 25-40, which was followed by the adults of age group of 41-59 in both years. In the pre-adolescent age group, it was found to be the least

suicidal death in both years. It was also found that more than 10 percent of aged people were committed to suicidal death in both years. (Table-3)

Table-3: Age-wise Suicidal Death

Age	2023 AD				2024 AD			
	F	M	Total	%	F	M	Total	%
0-14	5	7	12	8	5	13	18	8
15-19	16	5	21	14	17	15	32	15
20-24	6	17	23	15	9	17	26	12
25-40	18	34	52	34	18	43	61	29
41-59	8	24	32	21	15	39	54	25
60 and more	5	7	12	8	4	19	23	11
<b>Total</b>	<b>58</b>	<b>94</b>	<b>152</b>	<b>100</b>	<b>68</b>	<b>146</b>	<b>214</b>	<b>100</b>

Source: Analysis WRH Autopsy records 2023, 2024

## ACCIDENTAL DEATHS

One of the significant causes of death is accidents and related activities. In the study, it was found that mainly Road Traffic Accidents (RTA), blunt force injury cases caused by falling, head injury cases etc. were some of the significant causes of accidental death related to direct or indirect accidents. Among the types of accidental deaths in 2023 AD, nearly half of the cases belonged to blunt force injury cases caused by falling or such types of accidents, but in 2024 these types of cases were found to have increased. Blunt force injury cases were followed by RTA and head injury in both years. The sex ratio of accidental death cases was found to be 309 and 311 in 2023 and 2024 respectively. Based on the data of ethnicity, almost half of the cases in both years were found to belong to the Brahmin/Chhetri Community, which were followed by Janajati and Dalit respectively. (Table-4)

Table-4: Accidental death

Type	2023 AD				2024 AD			
	F	M	Total	%	F	M	Total	%
Blunt Force Injury	16	50	66	47	25	74	99	65
RTA	14	40	54	39	8	23	31	20
Head Injury	1	9	10	7	3	9	12	8
others	3	6	9	6	1	9	10	7
<b>Total</b>	<b>34</b>	<b>105</b>	<b>139</b>	<b>100</b>	<b>37</b>	<b>115</b>	<b>152</b>	<b>100</b>

Source: Analysis WRH Autopsy records 2023, 2024

## Age-wise Accidental Death

Accidental death was found to be highest in the age group 25 to 40 and was followed by the age group 41 to 59 in both years. 12 percent and 16 percent of the total accidental deaths were found belonging to aged people and adolescents in both years. (Table-5)

Table -5: Age-wise Accidental Deaths

Age wise Accidental Death								
Age Group	2023 AD				2024 AD			
	F	M	Total	%	F	M	Total	%
0-14	3	8	11	8	7	7	14	9
15-19	3	9	12	9	3	9	12	8
20-24	4	18	22	16	4	20	24	16
25-40	6	37	43	31	8	49	57	38
41-59	10	24	34	24	9	18	27	18
60 and more	8	9	17	12	6	12	18	12
Total	34	105	139	100	37	115	152	100

Source: Analysis WRH Autopsy records 2023, 2024

Similarly in the study, different types of metabolic diseases like various types of cancer, chronic kidney disease, liver disease, cardiac diseases, multi-organ failure due to various chronic conditions etc. were observed in the autopsy report. The number of cases in the metabolic death was found in the third position among the above-mentioned type of cause of death recorded in the autopsy report. The cause of death of some deceased was found unknown because of the complete decaying of the body and due to the unavailability of final cause of death due to the delay in blood and viscera report too, such type of deaths were kept in the title other death in the study.

## RESULTS

From the study, the overall sex ratio of the deceased was found to be 219 and 244 in 2023 and 2024 respectively. More than half of the cases were from Kaski district where the hospital was located. The highest numbers of deceased were in the youth age group, i.e. 25-40 in both years. The number of cases found increased by 32 percent in 2024 than the previous year when the male increment was 37 percent and females 23 percent. Almost half of the cases, i.e. 47 percent and 50 percent, were suicidal in both years respectively, which were followed by accidental death, 43 percent and 36 percent. Here, the number of accidental deaths increased, but in proportion it was found to be decreased in 2024 than 2023. Suicidal death cases were found increased by 41 percent; i.e. male 55 percent, female 17 percent where accidental death cases increased by only 9 percent; i.e. male 10 percent, female 9 percent, metabolic death increased by 70 percent; i.e. male 47 percent, female 140 percent and other deaths increased by 32 percent; i.e. male 171 percent and female 75 percent.

Based on ethnicity, the highest numbers of Brahmin/Chhetri death cases were found which was followed by Janajati and Dalit, respectively. The number of Brahmin/Chhetri death cases found increased by 56 percent; Janajati; 17 percent; Dalit; and 47 percent from 2024 to 2023. On average, a higher number of cases were found in November, June, February and January respectively, where cases were found in the least number of cases were found in September in both years. In both years, suicide cases were found highest in the age group of 25-40.



Nearly half of the suicide cases, i.e. 49 percent, were hanging in both years, which was followed by poisoning, i.e. 25 percent in 2023 and 17 percent in 2024; Drowning; 13 percent in 2023 and 24 percent in 2024; AD Suicidal fall; 14 percent in 2023 and 10 percent in 2024 respectively. It was also found that hanging cases increased by 41 percent. Drowning cases increased by 171 percent from 2024 to 2023, but poisoning and suicidal fall cases were almost constant in both years.

In the study, accidental deaths were mainly blunt force injury, RTA cases, head injury and others. Most of the cases were related to blunt force injury caused by general falling or accidental falling, i.e. 47 percent in 2023 and 65 percent in 2024. Similarly, it was found, followed by 39 percent RTA deaths in 2023 and 20 percent in 2024 and head injury 7 percent in 2023 and 8 percent in 2024, respectively. Blunt force injury cases were increased by 50 percent whereas RTA death cases were decreased by 43 percent. On the basis of ethnicity, Brahmin/Chhetri was found in the highest number of victims, i.e. 43 percent in 2023 and 49 percent in 2024, which was followed by Janajati and Dalit respectively. These types of accidental deaths were found highest in November 2023 and February 2024. Similarly, these types of deaths were highest in the same age group, 25-40, in both years.

## DISCUSSION

In this study, 47 percent and 50 percent of cases belonged to suicidal death. In 2023 and 2024, respectively, similar accidental deaths were 43 percent and 36 percent, and metabolic deaths 6 percent and 8 percent respectively, in both years. In the same study, the sex ratio was found to be 214 and 244 in 2023 and 2024 respectively. In a similar type of study, the mean age of the victims was 33.87 years and there was a male: female ratio of 3.6:1. Injuries resulted from blunt trauma in 41 (89.1 percent) cases, the most common of which were road traffic accidents, constituting 37(80.4 percent) cases. Laceration of the liver was the most frequent finding that was evident in 34 (73.9 percent) cases. The right lobe of the liver was injured in 30 (74 percent) cases<sup>11</sup>. In a study, a total of 4383 autopsies were conducted by the Department of Forensic Medicine in Kathmandu. There were 1072 (25 percent) cases of suicide, 380 (9 percent) homicides, 1399 (32 percent) accidental, 598 (14 percent) deaths as a result of natural diseases and 923 (21 percent) undetermined causes of death. The number of males was almost twice that of females (sex ratio 2.2:1). Persons aged 15 to 44 years comprised about two-thirds of the total reported fatalities (65.4 percent). Suicides were mostly reported due to hanging, homicides mostly due to firearms and explosives, and accidents mostly due to road traffic injuries. More than 60 percent of road traffic injuries resulted among pedestrians<sup>12</sup>.

In this study, 30 percent and 20 percent of accidental deaths were due to road traffic accidents (RTA). In both the years, the number of males due to RTA was found to be almost three times more than females. In a similar hospital-based study in eastern Nepal, 38 percent were due to RTI. There were also more RTI cases in males and in the age group of 20–40 years. Moreover, autopsies conducted in hospitals revealed that a road accident was a major cause of death. The mortality rate increased from 4/1,00,000 in 2001–2002 to 7/1,00,000 in 2011–2012<sup>13</sup>. Similarly, in another study, most of the victims, i.e. 147 (40.83 percent), were young (15 to 30 years). Severe accidents leading to fatal outcomes were associated with personal problems, recent or on-day conflicts and some evidence of alcohol consumption. Increased prevalence of RTA was also noticed at the beginning i.e. 198 (55 percent) and end i.e. 69 (19.16 percent) of the journey; in rainy and cloudy conditions (269 i.e. 74.72 percent) and in evening hours (3 to 7 p.m. 159 i.e. 44.16 percent). Out of 246 vehicles involved, 162 (65.85 percent) were old and ill-maintained. The contribution of old vehicles to fatal injuries was 33 (50 percent). Head injury was found in 156 (43.33 percent) cases and its associated case fatality rate was 90.90 percent<sup>14</sup>. Similarly, the highest number (17 or 21.3 percent) of fatalities occurred in the 41-50-year age group, followed by the age group of 31–40 years (15 or 18.7 percent). Male victims outnumbered females, resulting in a male to female ratio of 1.8:1. In nearly half of the cases (38 or 47.5 percent), four or more wheelers, heavy vehicles were involved. Fractures were the most common type of injury (55 or 28.9 percent), followed by lacerations (50 or 26.3 percent). More than one-fourth (22 or 27.5 percent) of the deaths were due to pelvic and extremity injuries<sup>15</sup>.

In this study, the majority were males in both years. The sex ratio was found to be 162 and 215 in 2023 and 2024 respectively. Where almost half of the cases belonged to Brahmin/Chhetri and were followed by Janajati and Dalits respectively. In a similar study, there were a total of 2172 documented cases of completed suicide in the

age group between 4 and 21 years. The majority were female and belonged to the adolescent age group. A monthly breakdown of the cases revealed that the incidence of suicide was lowest in January and February and peaked from April to October. Hanging was the most common mode of suicide, followed by poisoning and drowning. The reason for suicide could be ascertained in only 25.5 percent of cases. Domestic violence (35 percent), mental illness (24 percent), failure in academic achievement (15.8 percent) and end of a romantic relationship (8.7 percent) were found to be common causes of committing suicide. Of the 87 cases found who committed suicide because of academic failure, 46.6 percent were at a grade ten level<sup>16</sup>. In this study, it was found that the drowning in total suicide cases was 13 percent and 24 percent in 2023 and 2024 respectively, where the sex ratio in drowning cases was found to be 111 and 271 in 2023 and 2024 respectively. In a similar study, the rate of drowning was 1.9 per 100,000 (2.95 for males and 0.92 for females). The majority of drowning occurred among males (76 percent) and more than half were (53 percent) under 20 years of age<sup>17</sup>.

In this study, the highest suicidal death was found in the age group 25-40, which was followed by age group 41-59. Similarly, hanging was also found highest in age group 25-40. In Norway from 1990-1992, the suicide rate was 18.6 per 100,000 individuals per year for boys 15-19 years old and 6.3 for girls, and for 10-14-year-olds the rate was 2.7 for boys and 0.5 for girls<sup>18</sup>. Suicides take a great toll. Over 8,00,000 people die due to suicide every year, and it is the second leading cause of death in 15-29-year-olds. There are indications that for each adult who died of suicide there may have been more than 20 others attempting suicide<sup>19</sup>. In the study carried out between 2010 and 2013, a total of 7968 autopsies were conducted, of which 3.31 percent (n – 264) cases were deaths due to hanging. The major age group affected by both sexes was in the range of 31-40, contributing to 50.76 percent (n – 136) of the self-suspension. The age group preferred for self-suspension was between 21 and 30 years, contributing to 31.06 percent (n – 82) of the cases. The least affected ages were children less than 10 years (n – 01). There were no incidents reported above 60 years of age<sup>20</sup>. On the basis of type of suicide, almost three-quarters (72.3 percent) were found to have committed hanging, which was followed by poisoning (19.3 percent) and suicidal fall (8.4 percent) respectively. The suicide rate was seen as higher between 12 am to 12 pm (56.9 percent). Specifically, at 12 am to 6 am (30.8 percent) it was found a high incidence of suicidal activity was found. Similarly, on the basis of day in the week, a high incidence was found on Friday (23.1 percent), which was followed by Thursday (18.5 percent) and Monday (15.4 percent), where it was found the least on Saturday (6.1 percent)<sup>21</sup>.

## CONCLUSION AND POLICY IMPLICATION

The study showed that the medico-legal autopsy cases have been increased so that suicidal deaths as well as accidental deaths have also been increased rapidly. This study has also showed the youth age group has been becoming the victim by unnatural deaths due to road traffic accidents, falls, along with different types of suicide; hanging, poisoning, drowning, suicidal falls etc. To avoid different types of unnatural deaths, the quality of physical infrastructures like roads, bridges etc. should be made improved. Road traffic education should be provided to all focusing the adolescent and youths in order to control the possible RTA-induced deaths and injuries too. National policies for the effective traffic management system should be endorsed and implemented by the government. Screen time and loneliness have also increased the psychiatric illness in the Nepalese societies too so that mental health education should be included in the school level and in all academic courses too. As suicides are preventable, for its prevention, the interlocking socio-economic and other core cause behind them should be identified and controlled as far as possible. A comprehensive multi-sectorial national suicide prevention strategy should be adopted. To develop the positive attitude and fitness, yoga as well as other alternative and traditional medicine should be promoted. To promote the health awareness and timely prevention of diseases, a strong public health intervention strategy should be launched and implemented effectively. Opportunities to quality employment with dignity and self-respect should be guaranteed by the nation. To make the nation prosperous, human capital should be preserved and used effectively. For this, all types of unnatural and preventable deaths should be controlled by nation by implementing the fundamental and other rights of people enshrined in the constitution too.

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## Conflict of Interest

The author declares no conflict of interest.

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