

## ORIGINAL ARTICLE

# Medico-legal autopsies of homicidal deaths: A five-year retrospective study in Hospital Sungai Buloh

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### Abstract

**Introduction:** Homicide is the act of killing one human being by another, encompassing death as a result of criminal act including justifiable homicide such as judicial killing and self-defence. This study aimed to ascertain the epidemiology and patterns of injury of homicide victims. **Materials and Methods:** We reviewed records of medico-legal autopsy cases performed at the Department of Forensic Medicine, Hospital Sungai Buloh, for a period of five years, from January 2012 until December 2016. Subjects' demographic data such as age, gender, nationality, ethnicity and cause of death were recorded. **Results:** A total of 122 homicide cases were documented. 90% of the victims were 18 to 65 years old. Males contributed 80% of the subjects. An alarming 42% of the subjects comprised of non-Malaysians. Indonesian subjects contributed one-third of the non-citizen category, followed by Bangladeshis at 20.4%. Other nationalities were Burmese, Nepalese, Pakistani, Vietnamese and unspecified. Among Malaysians, 50% of the subjects were Indians, followed by Malay (31.5%) and Chinese (17.8%). Sharp and blunt force traumas were the most common injuries found, contributing 33% and 32% respectively. Asphyxiation and firearm injuries recorded an almost similar frequency, contributing 25% in combination. Other patterns included combined sharp and blunt objects (4.9%) and burns (3%). **Conclusions:** A large number of immigrants in the country have significantly increased the forensic casework. Sharp and blunt objects continue to be the weapon of choice due to its easy accessibility. As domestic violence including fatal spousal and child abuse continue to rise, in-depth study in the area is warranted.

**Keywords:** homicidal death, medico-legal autopsy, cause of death, fatal injury

## INTRODUCTION

Homicide is generally defined as an act of killing a human being by another. Homicidal acts tend to occur with criminal intent but do not necessarily involve procurement of act. To a lesser extent, it may result from any act of omission, with or without criminal intention.<sup>1</sup> Information on homicide statistics has long been proven to be beneficial to the general public as well as to various law-enforcement agencies. In Malaysia, there is still a scarcity of information focusing on data from autopsy practice. Previous studies have concentrated on the demography of cosmopolitan areas like Kuala Lumpur and Penang which by themselves may not represent other areas.<sup>1,2,3</sup> Hence, in this study, we sought

to determine the epidemiology and pattern of injury sustained by homicide victims within Sungai Buloh district, in the state of Selangor, Malaysia. This is a semi-urban population comprised of mixed working-class citizens with multi-ethnicity and multi-religious background, to the north of Kuala Lumpur. A sizeable number of non-citizens also exist as part of workers of businesses and factories within this industrialised region.

Significant differences in characteristics of homicide victims exist regionally within the same country depending on local demography. Specific homicide injurious patterns have also been documented to reflect the accessibility of offending objects and mental capacity of

perpetrators.<sup>4</sup> Understanding such variations and patterns helps to educate the public and formulate relevant preventive programs and policies to reduce future deaths. It also contributes significantly towards appropriate navigation in the investigation direction of homicide cases by law-enforcement agencies.

**MATERIALS AND METHODS**

The study sample comprised all homicidal deaths which were brought to the Department of Forensic Medicine, Hospital Sungai Buloh Selangor, Malaysia from January 2012 until December 2016. Data pertaining to autopsy findings, the cause and manner of death were obtained. Epidemiology data including nationality, ethnicity, gender, age, cause of death and patterns of injury were acquired for every decedent. National Medical Research Register with ID no NMRR-17-3480-36298.

**RESULTS**

*Age and gender profile*

A total number of 122 homicidal deaths were recorded for the five-year period. The cases contributed 8.5% of all autopsies performed in the department within the time frame. They were categorized into four groups according to age range (Fig. 1). Young adults contributed 45% of the cases and followed closely by an adult age group between 36 until 65 years old. Child homicide contributed 10% of the cases

referring to those below twelve years old. In terms of gender distribution, almost 80% of the subjects were males and the remaining 20% were females. Interestingly, within the younger age group of less than 17 years old, female victims contributed 9 cases, compared to 6 male victims respectively.

*Nationality and ethnicity profile*

Malaysia is a multiracial country with main ethnicities comprised of Malays, Chinese and Indians in the Peninsular. Progressive developments in the country have been attracting millions of economic immigrants from the neighbouring countries for the past decade. As such, their presence is also well-reflected in the statistics of death at the mortuary. While Malaysians contributed 71 cases (58.2%), non-citizens made up approximately 40% of the total subjects. Among the Malaysian citizens, the majority of the victims were from the Indian population, contributing approximately 50% of the subjects within the category. It was followed by Malays and Chinese at 31.5% and 17.8% respectively. Among the foreigners, approximately one-third of the subjects were Indonesians, followed by Bangladeshi, contributing 20% of the victims. Smaller numbers of victims were Burmese, Indian, Myanmar, Nepal, Pakistan, Sudanese and Vietnamese. In six subjects, neither identity nor nationality could be determined and categorised as ‘Unknown’. Further police investigations concluded that these

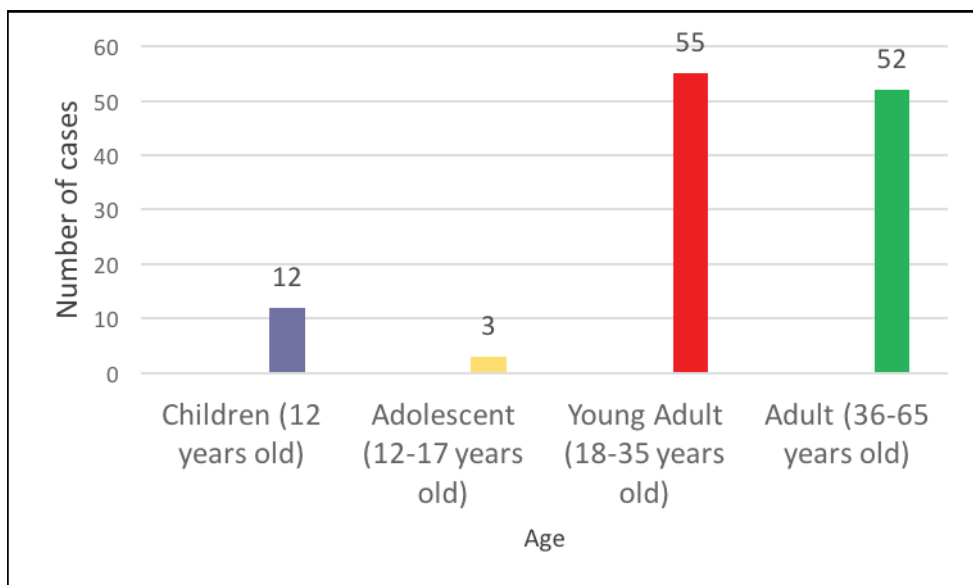


FIG. 1: Distribution of subjects according to age group.

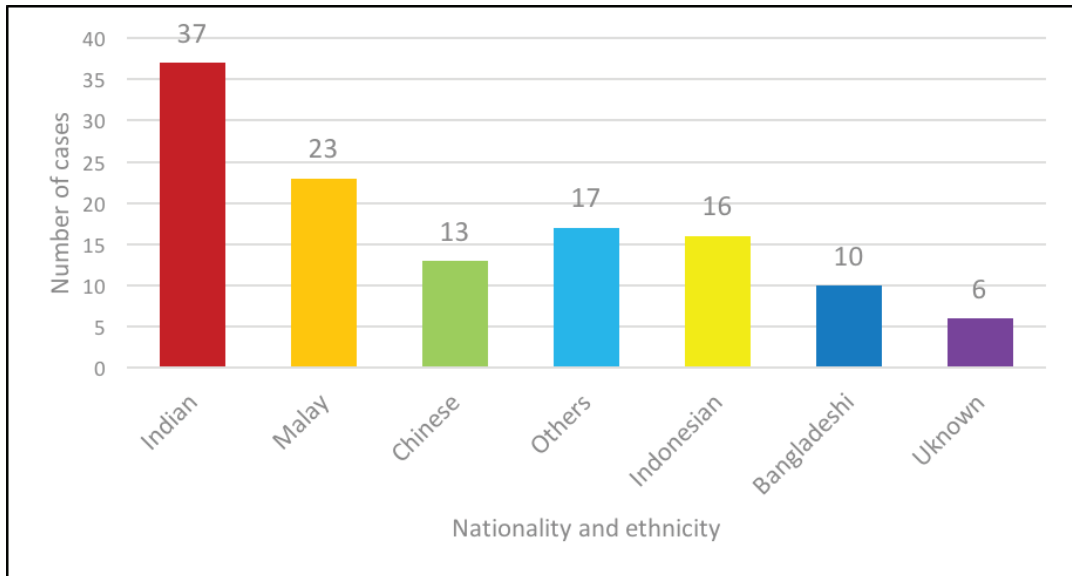


FIG. 2: Distribution of subjects according to nationality and ethnicity.

‘Unknown’ individuals were non-Malaysians. Distribution of subjects according to nationality and ethnicity is shown in Figure 2.

*Patterns of injury*

Injury patterns of the study subjects were categorised into six groups (Fig. 3). Sharp and blunt force trauma were the most common injuries observed, contributing approximately two-thirds of the total cases. The remaining injuries were asphyxia and gunshot wounds, contributing 13.1% and 12.3% respectively. In less than 10% of the cases, causes of death were attributed to more than one fatal injury and burns.

There were interesting findings in terms of injury patterns and different categories of age group. In child homicide, almost 70% of deaths were attributed to blunt force trauma. The percentage was also similar in the adolescent group. In young adults, almost 50% of the subjects died as a result of sharp weapon injuries. It was followed by blunt trauma, contributing approximately one-fifth of the subjects. In the older adult population, blunt force trauma predominated and contributed one-third of the cases. Other common injury patterns included sharp force trauma and gunshot wounds at the lesser account (Table 1).

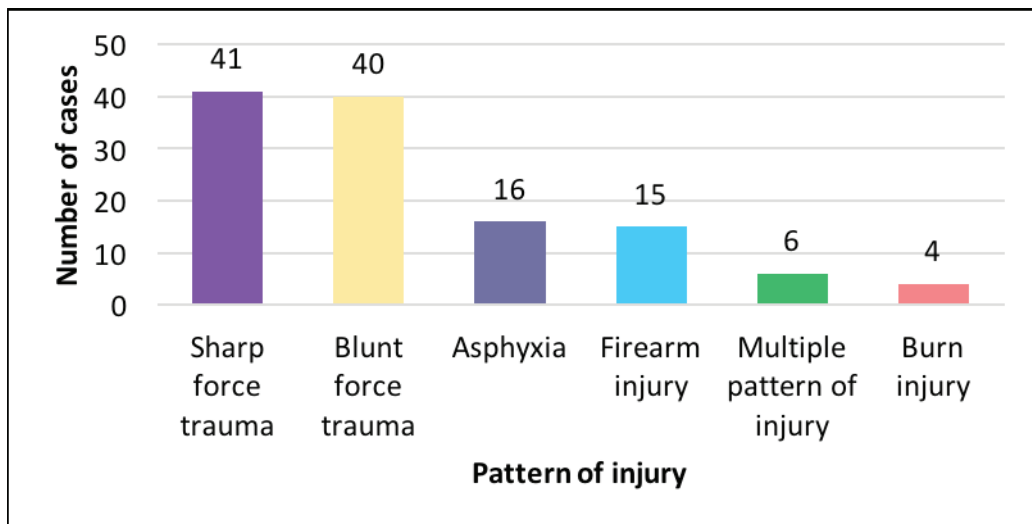


FIG. 3: Frequency of subjects according to the patterns of injury.

**TABLE 1: Cross tabulation between age and patterns of injury of homicide cases**

	Patterns of Injury						Total
	Blunt force trauma	Sharp force trauma	Firearm Injury	Burn Injury	Asphyxia	Multiple injuries	
<b>Children (&lt; 12 years old)</b>							
Frequency (n)	8	1	0	1	2	0	12
% within this population	66.7%	8.3%	0.0%	8.3%	16.7%	0.0%	100.0%
% of Total population	6.6%	0.8%	0.0%	0.8%	1.6%	0.0%	9.8%
<b>Adolescents (12 - 17 years old)</b>							
Frequency (n)	2	1	0	0	0	0	3
% within this population	66.7%	33.3%	0.0%	0.0%	0.0%	0.0%	100.0%
% of Total population	1.6%	0.8%	0.0%	0.0%	0.0%	0.0%	2.5%
<b>Young Adults (18 - 35 years old)</b>							
Frequency (n)	12	25	5	1	9	3	55
% within this population	21.8%	45.5%	9.1%	1.8%	16.4%	5.5%	100.0%
% of Total population	9.8%	20.5%	4.1%	0.8%	7.4%	2.5%	45.1%
<b>Adults (36 - 65 years old)</b>							
Frequency (n)	18	14	10	2	5	3	52
% within this population	34.6%	26.9%	19.2%	3.8%	9.6%	5.8%	100.0%
% of Total population	14.8%	11.5%	8.2%	1.6%	4.1%	2.5%	42.6%
<b>Total</b>	40	41	15	4	16	6	122
Frequency (n)							
% of Total population	32.8%	33.6%	12.3%	3.3%	13.1%	4.9%	100.0%

## DISCUSSION

Comparable with studies elsewhere, homicides and violence predominantly involve adult men. In our study, almost 90% of the subjects were those between 18 to 65 years. A study by Bhupinder *et al.* in Penang Island, Malaysia showed that majority of the victims aged 20-39 years, contributing almost 40% of the subjects.<sup>1</sup> Our study showed that 18 to 35 years old adults made up 45% of the subjects, showing relatively similar age group identified as prone to becoming homicide victims. However, the figure was much higher and close to 65% as observed by a study by Kumar *et al.* at UMMC for 5 years in the early 2000s. In a neighbouring country Thailand, the figures are distinctly higher, hovering between 70% to 95% every year.<sup>5</sup>

Throughout the five-year study, we noticed that the percentage of homicide in children was low as compared with other studies.<sup>1,6</sup> In those below 18 years old, female to male ratio was 3:2, presenting more female victims than male. According to UNICEF Malaysia, child abuse victims were higher among girls where 2 out of 3 abused victims were girls below the age of sixteen.<sup>7</sup> As the large majority of the victims were male, coupled with the age factor, perhaps a plausible explanation is that young men are socially active and involvement in substance abuse as well as criminal activities may make them prone to commit crime as well as becoming a victim of crime themselves.<sup>2,5</sup> Men also generally work outdoors and more exposed to external environment which could lead to physical and fatal confrontations.<sup>6</sup> On the other hand, females are likely to become a homicide victim due to direct assaults associated with rape, robbery or even domestic disputes. Studies in Italy and Taiwan have both shown that at least half of the femicides case were related to intimate partner killing.<sup>8,9</sup>

Malaysia has approximately 32 million in population and an additional 4.6 million of immigrants, contributing slightly more than 10% of the population. However, this study showed that homicides among the foreigners were disproportionately high, contributing 40% of the total subjects. Around 6% of the subjects were of unknown identity and undetermined nationality, they were classified by police investigators as foreigners. In Penang, only 17% of the subjects were foreigners and 15% belonged to the unknown category. Another study for the peninsular Malaysia population also showed up

to one-third of the victims were foreigners and belonged to the unknown category of nationality,<sup>6</sup> thus confirming the consistently high number of murder victims involving this population. Among the foreigners, almost one-third of the homicide victims were Indonesians, followed by Bangladeshis at one-fifth of the total foreign subjects. This is correlating well with the number of immigrants in the country where Indonesians and Bangladeshis are the majorities.<sup>10</sup>

Among locals, Indian was the highest ethnic group involved, contributing 50% of the total Malaysian victims. According to statistics from the Royal Police of Malaysia, 70% of gang members in the country are Indians. Chinese and Malays make up the remaining 25% and 4.77% respectively.<sup>11</sup> Perhaps, this explained the high number of homicide cases involving Indians as it could be directly related to the increase in gangland criminal activities and rivalries. While the underworld activities are not restricted to the locals, immigrants are also known to have their own groups involved in racketeering as well as inter-ethnic fatal competitions.<sup>12,13</sup>

Patterns of injuries in homicide cases vary from one country to another, depending on the availability of weapons as well as the victims' demography. In recent years, mass shootings have made headlines in the United States, making firearm injuries high on the list with adolescents or school children being the principal targets.<sup>14,15</sup> In Malaysia, firearms would be obtained illegally from the northern border and its use is associated with the underworlds. Therefore, other than extrajudicial killings of criminals by police, fatal firearm injuries are associated with gangland activities. These cases contributed only 12.3% of the total subjects. In contrast, the majority of the victims died of fatal sharp and blunt force trauma, which in combination, contributing more than two-thirds of the subjects. Items such as kitchen knives, machetes, samurai sword and sickle were among those mostly recovered during the police investigations associated with fatal stab or slashed wounds. On the other hand, victims died of blunt trauma mostly resulted from beatings by punching, kicking and stomping by the assailants. On lesser count, objects such as wooden planks, metal pipes and helmets were identified as the objects used to inflict fatal injuries, based on police investigations.

Almost 5% of the subjects died as a result of a combination of fatal injuries. These included asphyxia by strangulation with blunt trauma and sharp force trauma with firearm injuries.

Burn injuries had the lowest frequency of cases, contributing 3% of the total subjects. An unfortunate woman had died from an acid attack involving a former intimate partner and three other cases were related to flame burns.

#### *Study limitations*

Study subjects included homicide victims in an advanced degree of decomposition or skeletonisation. Although the manner and cause of death were established, the identity of the victims remained unknown. Based on police investigations, these victims were believed to be of foreign nationals. Therefore, the demographic profile might be slightly compromised.

#### **CONCLUSION**

A high number of non-citizen victims in the study warrants for further insights into this population. A staggering figure of 80% of the victims sustained blunt and sharp force trauma, sanctioning that easy accessibility is one of the key factors in obtaining a weapon of choice for the crimes.

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