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Profile of Medicolegal Cases at Department of Forensics and Legal Medicine of Dr. Hasan Sadikin General Hospital Bandung

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Abstract

The increasing number of criminal cases in Indonesia indirectly affects the number of cases handled in the Department of Forensics and Legal medicine. Forensic specialists play an important role in criminal investigation process by conducting medical examination of the corpse. This study aimed to present the profile of the corpses examined in the Department Forensic and Legal Medicine of Dr. Hasan Sadikin General Hospital Bandung, Indonesia, during 2013-2017. This was a descriptive retrospective study based on data of the corpses examined at the Department of Forensics and Legal Medicine of Dr. Hasan Sadikin General Hospital Bandung, Indonesia, in 2013–2017. During the period of study, 1,692 corpses were handled with 1,258 males (74%), 430 females (25%), and 4 with unidentified sex (1%). most of the corpses were 46–65 years old (30%) and 26–45 years old (29%) when they died. There were 24 corpses with multiple cases, making a total number of cases of 1,716 cases with an average number of cases handled each month of 29 cases. From these cases, 1,303 cases (76%) only involved external examination and 413 cases (24%) underwent autopsy (external and internal examinations). The highest number of cases was seen in 2014 (432 cases, 25%). Regarding the type of cases, Death on Arrival (DOA) cases was the most frequently seen (28%), followed by traffic accidents (26%), sudden death (22%), infanticide (7%), train accident (5%), and murders (5%). The most frequent cause of death in murder cases was sharp trauma. In conclusions, DOA and traffic accident are the dominant cases handled at the Forensics and Legal Medicine Department of Dr. Hasan Sadikin General Hospital. The high number of DOA indicates the high number of patients who come late for treatment. This needs further studies to clarify the situation in order to avoid future DOA cases. In addition, the risk factors related to the death due to traffic accidents in Indonesia need to be determined to reduce the number of fatalities in traffic accidents.

Key words: Autopsy, case profile, corpse, dominant case

Profil Kasus Medikolegal di Departemen Ilmu Kedokteran Forensik dan Medikolegal RSUP Dr. Hasan Sadikin Bandung

Abstrak

Maraknya kasus kriminal di Indonesia secara tidak langsung berefek pada jumlah kasus yang diperiksa di Departemen Ilmu Kedokteran Forensik dan Medikolegal. Dokter forensik berperan penting dalam mengungkap kasus kematian dengan melakukan pemeriksaan medik untuk kepentingan peradilanMengetahui profil kasus jenazah di Departemen Forensik dan Medikolegal RSUP Dr. Hasan Sadikin Bandung yang diperiksa selama tahun 2013–2017. Penelitian ini bersifat dekskriptif retrospektif berdasarkan data kasus jenazah yang diperiksa di Departemen Ilmu Kedokteran Forensik dan Medikolegal RSUP Dr. Hasan Sadikin Bandung tahun 2013–2017. Selama periode penelitian, terdapat 1.692 jenazah yang ditangani, terdiri dari 1.258 jenazah laki-laki (74%), 430 perempuan (25%), dan 4 jenazah (1%) tidak teridentifikasi jenis kelaminnya. Kelompok usia terbanyak adalah usia 46–65 tahun (30%) dan usia 26–45 tahun (29%). Terdapat 24 jenazah dengan kasus ganda, sehingga didapatkan total 1716 kasus, dengan rata-rata jumlah kasus setiap bulan adalah 29 kasus. Dari total kasus tersebut, yang dilakukan pemeriksaan luar saja 1.303 kasus (76%) dan yang dilakukanotopsi (pemeriksaan luar dan dalam)413 kasus (24%). Jumlah kasus terbanyak pada tahun 2014, 432 kasus (25%). Jenis kasus terbanyak adalah kasus *death on arrival* (DOA) 28%, diikuti secara berturut-turut kasus kecelakaan lalu lintas 26%, mati mendadak 22%, infantisid 7%, kecelakaan kereta api 5%, dan pembunuhan 5%. Kasus pembunuhan terbanyak diakibatkan oleh trauma tajam. Simpulan**,** hasil penelitian didapatkan kasus terbanyak pada tahun 2014 (25%), jenazah terbanyak berjenis kelamin laki-laki (76%), kelompok usia terbanyak adalah usia 46–65 tahun (30%), jenis kasus terbanyak adalah kasus DOA (28%), dan hanya 24% kasus yang dilakukan otopsi.

Kata kunci: Kasus terbanyak, otopsi, profil kasus jenazah

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Introduction

During the 2014–2016 period, the number of incidents of crime or criminal acts in Indonesia showed a tendency to increase. Data from Statistics Indonesia (*Biro Pusat Statistik,* BPS) show that the estimated rate of crime victims is 131 people in 100,000 people in 2014. This number increases to around 140 people in 2015 and 2016. West Java is ranked fourth among the provinces with the highest fatal crime rate in Indonesia after North Sumatra, South Sumatra, and North Sulawesi.[1]

Based on data from the West Java Provincial Prosecutor's Office, in 2015, the rate of crimes with human victims in West Java has reached 12,300 cases. This number is dominated by theft and robbery, psychotropic use, murder, and moral-related crimes. Furthermore, West Java Regional Police data show that there are 8,092 traffic accident victims in 2015 with most of them are motorcycle riders.[2]

The rise of criminal cases in Indonesia indirectly affects the number of cases examined at the Department of Forensic Medicine. Forensic doctors play an important role in uncovering cases of death by conducting medical examinations for the benefit of the court. These doctors can obtain evidence on the body of the victim, estimate the time of death, and determine the cause of death through autopsy.[3,4,5.] This authority is referred to in Article 133 and 184 in the Indonesian's Criminal Code Procedure. The types of cases that can trigger a request for postmortem studies by investigators include, among others, traffic accidents, workplace accidents, persecution, attempted murder, violence against women, violence against children, and suspected malpractice.[6-8]

This study aimed to determine the profile of medicolegal cases examined in the Forensics and Legal Medicine Department of Dr. Hasan Sadikin General Hospital Bandung, Indonesia. Secondary data from 2013 to 2017 were collected in 2018 from medical records. Thus, the number of fatal criminal cases was consistent with the number of examined bodies.

Methods

This was a retrospective descriptive study based on data on corpse examined at the Department of Forensics and Legal Medicine of Dr. Hasan Sadikin General Hospital Bandung, Indonesia during the period of 5 years, starting from January 1, 2013 to December 31, 2017. Cases were categorized according to information from family or investigator on the Request for Post-Mortem Examination. Age was categorized based on the age groups defined by the Ministry of Health of the Republic of Indonesia in 2009: 0–5 years, 6-11 years, 12–25 years, 26–45 years, 46–65 years, and >65 years.

This study was performed after receiving ethical clearance from the Health Research Ethics Committee of Dr. Hasan Sadikin General Hospital Bandung, Indonesia with the issuance of the Ethical Clearance No. LB.04.01/A05/EC/143/V/2018.

Data were processed to obtain the following information: number of bodies, number of cases, distribution of cases by age and gender, number of external and internal examinations, distribution of parties requesting examinations, distribution of murder cases by trauma type and sex.

Results

In this study, the number of bodies investigated in the study was 1,692 bodies, consisting of 1,258 males (74%), 430 females (25%), and 4 bodies with unidentified gender (1%).

During this time, 21 types of cases were identified: suicide, Death on Arrival (DOA), homicide, infanticide, train accident, workplace accident, skeleton, traffic accident, burns, electric wounds, gunshot wounds, sudden death, intoxication, falls, falls in ravines, mutilation, murder, persecution, excavation of graves, drowning, and buried by landslides.

Of all bodies examined, it was revealed that several bodies had experienced a combination of cases. The combination occurred when the victim first arrived as a DOA to the Emergency Room of Dr. Hasan Sadikin General Hospital Bandung but it was considered to have died due to an unnatural cause; thus, requiring an external examination again. The combinations identified were DOA and traffic accidents combination (n=17), DOA and sudden death combination (n=4), and DOA and workplace accident (n=3).

A body might carry several cases, leading to a higher number cases when compared to the number of bodies. Each combination case contributed a double counting. For example, a body with DOA and traffic accident combination would be counted as 2 cases. Thus, the total number cases during the 5-year period were 1,716 cases. Table 1 provides an overview of the

Table 1 Number of bodies by cases from January 1 to December 31, 2017

Year	Body with a Single Case	Body with Combination Case					Examination	
		DOA and traffic accident	DOA and sudden death	DOA and workplace accident	Total Body	Total Cass	External only	External and Internal
2013	292	0	0	0	292	292	191	101
2014	432	0	0	0	432	432	308	124
2015	375	8	4	3	390	405	330	75
2016	322	7	0	0	329	336	284	52
2017	247	2	0	0	249	251	190	61
Total	1,668	17	4	3	1,692	1716	1,303	413

Table 2 Number of External and Internal Examinations by Age Group

Age Group (years)	Male			Female		
	External Examination Only	External and Internal Examinations	Total	External Examination Only	External and Internal Examinations	Total
0–5	66	85	151	34	27	61
6–11	4	0	4	5	0	5
12–25	196	38	234	48	16	64
26–45	282	87	369	87	35	122
46–65	308	68	376	109	25	134
>65	99	25	124	39	5	44
Total	955	303	1258	322	108	430
Percentage (%)	56%	18%	74%	19%	6%	25%

number of bodies by case in an annual basis.

In the period of January 1, 2013 to December 31, 2017, the number of cases in the same month was accumulated to see the trend and frequency of cases in 12 months. The majority of cases were found in September, while the lowest total number of cases was seen in February. The average number of cases per month was 29 cases. However, when observed by year, it was revealed that highest number of cases was seen in 2014, then it relatively declined until 2017.

Of the total number of cases, only 1,303 cases were examined (76%) and only 413 cases underwent autopsy (external and internal examinations) (24%).

Of the total 1,692 bodies examined, there were 4 bodies with unknown sex. Of the 1,688 bodies with known sex, when categorized by age group, it was revealed that most victims were in the adult group (30%), both for males and females. This was then followed by 26–45 years (29%), 12–25 years (18%), 0–5 years (12%), >65 years (10%) and 6–11 years (1%) age groups.

Overall, the three most dominant cases were

Table 3 Distribution of Six Most Frequent Cases in 2013 to 2017

2013		2014		2015		2016		2017	
Traffic accident	30%	DOA	28%	DOA	37%	DOA	38%	DOA	35%
Sudden death	29%	Traffic accident	26%	Traffic accident	23%	Traffic accident	24%	Traffic accident	26%
Infanticide	11%	Sudden death	22%	Suddent death	20%	Sudden death	21%	Sudden death	21%
Murder	9%	Infanticide	8%	Train accident	5%	Train accident	5%	Infanticide	7%
Train accident	8%	Murder	6%	Infanticide	4%	Infanticide	4%	Train accident	4%
Drowning	4%	Drowning	3%	Murder	4%	Murder	2%	Drowning	4%

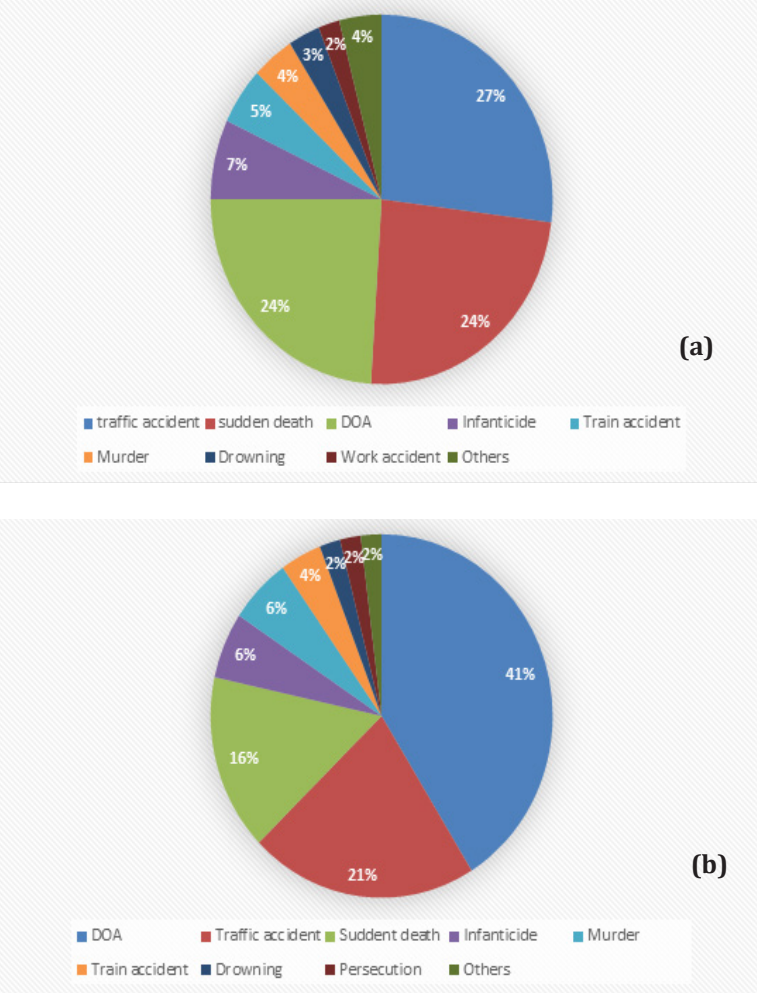

Figure 1 Case Composition by Sex (a) Male; (b) Female

DOA, traffic accidents, and sudden death, as shown in Table 3. In 2013, there was no data on DOA because DOA examination has just started to be performed at the Department of Forensics and Legal Medicine of Dr. Hasan Sadikin General Hospital since December 2013. Cases of DOA were very dominant with an average of 34.5% during the period of 2014 to 2017 with a total number of 484 cases. The number of traffic accident cases was higher when compared compared to other cases in 2013. Although it ranked under DOA since 2014, the traffic accident cases in Dr. Hasan Sadikin General Hospital comprised almost 25% of the cases. This shows the high fatality of traffic accidents in the working area of Dr. Hasan Sadikin General Hospital, Bandung. The third most dominant case in was sudden death. No less than 21% of these cases occur every year since 2014. The composition of other cases, namely infanticide, murder, train accidents, and drowning, varied slightly among different years..

When analyzed by the sex of the victim, the three top cases that involved men presented a similar distribution: 27% for traffic accidents, 24% for sudden death, and 24% for f DOA. Whereas in women, the three dominant cases were DOA (42%), traffic accident (22%) and sudden death (16%). The composition of cases by sex is presented in Figure 1.

For murder cases, specifically, the number of cases in 2013, 2014, and 2015 was quite high, i.e. 26, 26, and 16 cases, respectively with a drastic decline in 2016 and 2017 to 7 and 4 cases, respectively. In percentage, these number continued to decline from 9% to 6%, 3%, 2%, and 1% from 2013 to 2017, respectively.

Of the total murder or homicide cases, the

Table 4 Most Frequent Cases by Age Group

	0–5 years		6–11 years		12–25 years		26–45 years		46–65 years		>65 years	
First	Infanticide	53%	DOA	44%	Traffic Accident	52%	Traffic Accident	32%	Sudden Death	35%	DOA	2%
Second	DOA	42%	Traffic Accident	44%	DOA	15%	Sudden Death	23%	DOA	35%	Sudden Death	0%
Total victims (100%)	212		9		307		501		514		169	

Table 5 Most Frequent Cases by Age Group and Sex

	0–5 years	6–11 years	12–25 years	26–45 years	46–65 years	>65 years
Male	Infanticide (58%)	Traffic Accident (75%)	Traffic Accident (54%)	Traffic Accident (31%)	Sudden death (38%)	Sudden death (41%)
Female	DOA (51%)	DOA (60%)	Traffic Accident (38%)	DOA (30%)	DOA (51%)	DOA (59%)

type of trauma was dominated by sharp trauma (46%), followed by blunt trauma (36%), and only about 8% were due to blunt and sharp trauma at the same time. In addition, there were also 10% of the cases with gunshot wound as the trauma found on the body. Murder cases were mainly experienced by productive age groups, namely adolescents and young adult groups. Figure 2 provides a comprehensive data on murder cases.

The cases handled at the Department of Forensics and Legal Medicine of Dr. Hasan Sadikin General Hospital Bandung generally came from 8 types of senders, namely Emergency Rooms (ER), Jasa Marga, Family, Regional Police (Polda), Military Police, City Police (Polrestabes), Resort Police (Polres) from 8 locations, and Sectoral Police (Polsek) from 81 locations. Figure 5 listed the distribution of the senders with the Sectoral Police sent the majority of bodies to be examined (44%), which was much higher than the bodies sent by emergency rooms (27%). This reflects the trust of these institutions towards Dr. Hasan Sadikin General Hospital in managing forensic cases in West Java.

Discussion

DOA is a new type of case to be examined by the Forensics and Legal Medicine Departement

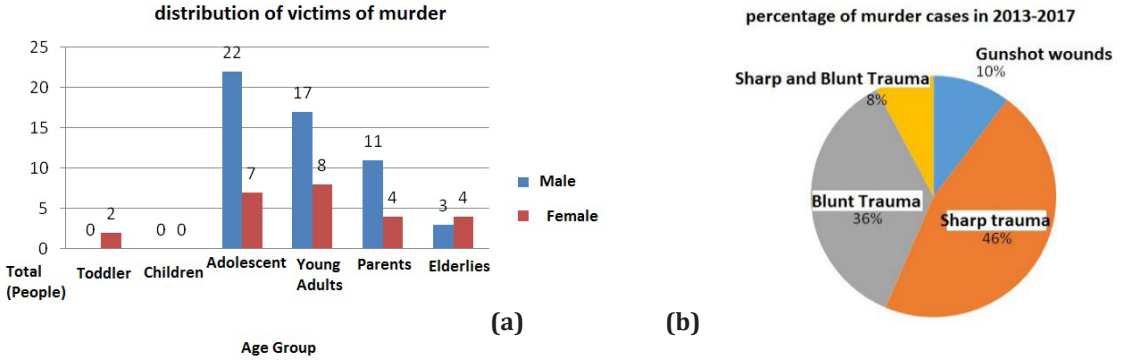

Figure 2 Distribution of Murder Cases (a)Distribution of murder victims by on age and sex, (b) Percentage of Type of Trauma in Homicides

of Dr. Hasan Sadikin General Hospital Bandung since December 2013. Nevertheless, this type of case became the most frequent legal medicine cases handled from 2014 to 2017. Most of DOA cases involved 46 to 65 years old. This is thought to be related to the position of this hospital as a Type A referral hospital that many patients with terminal illness were referred to this hospital.

Traffic accident was the second most frequent cases seen in this hospital. The high number of cases that involve unnatural deaths, especially traffic accidents, is also seen in other areas. In a study by Solano, et al. on autopsy pattern a hospital in Ethiopia in 2014 showed that unnatural deaths were the most frequent cases compared to natural deaths and that traffic accident cases was the most dominant case with 38.4%, followed by natural deaths of 27.5%, murder of 16.6%, and suicide of 12%. Of the total homicides, 61.4% were due to blunt trauma and 15.4% were due to gunshot wounds.[9]

Meng He's study in 2000-2009 in Shanghai, China showed that the highest number of cases in the area were traffic accident cases, followed by murders, suicides, natural deaths, and undetermined causes. Murder cases were dominated by sharp trauma, while in Western countries the main cause was firearms. Suicide cases were dominated by suicide by hanging .[10]

Hence, the findings of this study are similar to those of Meng He in China with the domination of sharp trauma.

There was also a high number of infanticide with victims ranging from 0–5 years old. This shows that there is a high number of babies who were born from unwanted pregnancy.. The DOA cases in this group were dominated by premature births or respiratory distress cases that were referred to Dr. Hasan Sadikin General Hospital.

Among the years studied, 2014 had the highest number of cases with 432 cases. This number significantly increases compared to the number of cases in 2013 because of DOA was just started to be examined in 2014. After that year, the number of cases continually decreases up to 2017. This decrease is allegedly related to the increasing number of forensic specialists distributed in West Java. Option to do autopsy becomes available more due to this increased number of specialists.

There were 1,716 cases from 2013 to 2017, and only 24% of those cases were examined externally and internally through an autopsy. Autopsy is performed based on the request from the investigators and autopsy may be cancelled if family members state their objection. In this case, only external examination will be performed.

This study describes the profile of medicolegal cases in Dr. Hasan Sadikin General Hospital from 2013 to 2017. DOA and traffic accident are the dominant cases handled at the Forensics and Legal Medicine Department of the hospital. The high number of DOA indicates that many patients come late to the hospital to get treatment. The reason for this delay should be clarified in order to be able to avoid it. Strategies should also be developed to reduce fatal traffic accidents in Indonesia because traffic accidents have been the second highest cause of death based on the findings of this study.

Although Indonesian suffers from the increasing number of fatal crimes, there is no direct correlation identified between the actual number of fatal crime and the number of bodies sent to the Forensics and Legal Medicine Department of Dr. Hasan Sadikin General Hospital in the past five years. One of the factors contributing to the decreased number of cases might be the higher availability of forensic services in other health care facilities. Support from investigators and family members become a very important factor for performing autopsy in medicolegal cases.

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