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Profile of Medico-legal Cases and Body Injuries in a Tertiary Hospital in Padang, Indonesia, 2010–2020

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Abstract

Forensic medicine is a branch of medicine that examines victims for the benefit of justice. Doctors play an important role in documenting injuries or abnormalities on the victim's body in the patient's medical record. This study aimed to determine the characteristics of cases and injuries of patients at M Djamil General Hospital during the period of 2010–2020. This was a descriptive retrospective study on secondary data from the medical records of patients who were examined and consulted to the Forensic Department of Dr. M. Djamil General Hospital, Padang during 2010–2020. During this period, 11.729 patients (victims) were examined by and consulted to the Department. Most of the victims were male (70.6%) aged 10–19 years old (29.2%). Most of the victims were involved in a traffic accident, followed by persecution. Victims of traffic accident dominated the forensic pathology cases after sudden death. Abrasions and open wound injury were the most frequent types of injury, with head and neck as the body parts mostly affected. In terms of the type of wound, most victims experienced injuries caused by blunt force (87%). This study concluded that the forensic cases managed at the Dr. M. Djamil General Hospital vary with blunt forces by a traffic accident as the most frequent cause of injuries while the head and neck become the body parts that are most susceptible to injury, both for survivors and those who died.

Keywords: Forensic case, forensic examination, forensic clinic, forensic pathology, injury, victim

Introduction

Criminal cases in Indonesia, indirectly affect the number of cases examined at the Department of Forensic Medicine and Medicolegal. According to Indonesian Police's data, it is estimated that only 22.19% of crime victims reported it to the police. The province of West Sumatra was ranked 7th in terms of the highest crime rate in Indonesia in 2019.[1] Doctors play an important role in conducting medical examinations for the benefit of the judiciary.[2]

Medico-legal case is clinical or medical case which have legal implications.[3] Medico-legal cases, especially those involving injured victims, are often encountered by medical officers working in the emergency department.[4] Medical examinations carried out by forensic doctors include examinations of living victims and deceased victims (corpses), where a report on the results of the examination will be poured by the doctor in the form of a visum et repertum.[5] The results of the examination conducted by the doctor on the victim are needed to guide the medicolegal investigation process.[6] for example, documentation of the type of violence that caused it would be helpful in concluding the weapon or the causative agent.[3] The types of cases that are requested for a visum et repertum by investigators are cases of traffic accidents, work accidents, abuse, attempted murder, violence against women, violence against children, and alleged malpractice.[7]

This study aims to determine the characteristics of cases and injuries of patients at General Hospital M Djamil during 2010–2020.

Methods

This was a descriptive retrospective study that uses secondary data from all the medical records of patients who were examined and consulted to the Forensic Department of Dr. M. Djamil General Hospital (RSMDJ), Padang from January 1st, 2010–December 31, 2020. Data collection was carried out by total sampling

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Table 1 Distribution of Victims of Crime who were Examined by the Forensic Department of Dr. M. Djamil General Hospital during 2010-2020 by Gender

Number of Victims who were Examined	Forensic Clinic	Forensic Pathology	Total
Male	7.766	3.308	8.278 (70.6%)
Female	512	143	3451 (29.4%)
Total	11.074	655	11.729 (100%)

including medical records of forensic clinic patients (living victims) and medical records of forensic pathology (corpses). The data is grouped into data on living victims and corpses. The data taken included gender, group age, type of case, area of the body that was injured and the type of injury to the body. The body parts are grouped into the head and neck area, thorax, abdomen, upper extremities, and lower extremities. Types of wounds are grouped into abrasions, bruises, open wounds and fractures.

This research has received ethical approval from Health Research Ethics Committee RSUP Dr. M. Djamil Padang No. 382/KEPK/2021. The data collected in Microsoft excel was then analyzed statistically with SPSS 10.

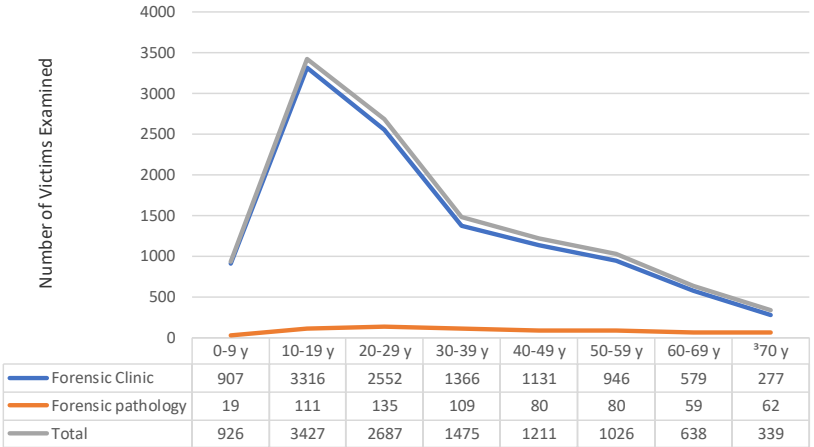
Results

During the research period, it was found that 11,729 victims were examined by the Forensic Department of RSMDJ, which consisted of 8,278 male victims (70.6%) and 3,451 (29.4%) female victims. The sex distribution is shown in Table 1.

Based on age, the victim of a crime who was examined by the forensic department of RSMDJ was dominated by the age group 10–19 years with 3,427 victims (29.2%), followed by the age group 20–29 years (22.9%) and the age group 30–39 years (12.6%). The age distribution is described in more detail in Figure 1.

From all the victims examined in this period of study, there were 11,074 clinical forensic cases (living victims) and 655 pathological forensic cases (corpses). The most clinical forensic case examinations were in 2014 as many as 1,972 cases (17.8%), followed by 2018 (17.6%) and 2019 (15.9%), and had a significant decline in 2020 (3,8%). The highest number of forensic pathological cases was examined in 2014 as many as 165 cases (25%), with the lowest number of cases in 2020 being 10 cases (1.5%).

Traffic accidents are the most common type of case in clinical forensic examinations, reaching 72% of clinical forensic cases, followed by cases of persecution (13.8%). In forensic pathology's case, traffic accidents are second-ranked (42.4%), after sudden death cases (45.3%). Most of the pathological forensic examinations were dominated by external examinations (91.6%), while the remaining 8.4% were



	0-9 y	10-19 y	20-29 y	30-39 y	40-49 y	50-59 y	60-69 y	³70 y
Forensic Clinic	907	3316	2552	1366	1131	946	579	277
Forensic pathology	19	111	135	109	80	80	59	62
Total	926	3427	2687	1475	1211	1026	638	339

Figure 1 Age Distribution of the Victims of Crime who were Examined by the Forensic Section of Dr. M. Djamil General Hospital 2010–2020

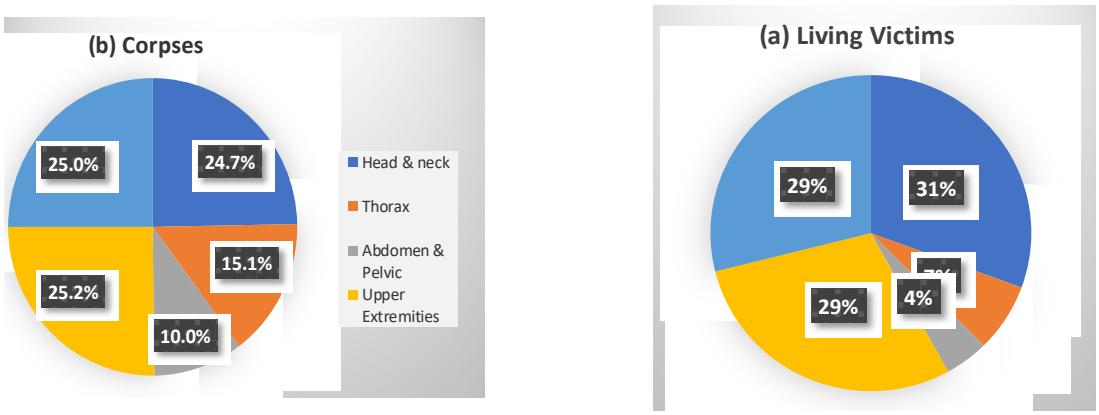


Figure 2 Distribution of Injuries to Victims Based on Body Region in: (a) Clinical Forensics/Living Victims; (b) Forensic Pathology/Corpses

carried out external and internal examinations (autopsies). Based on Figure 2, it can be seen the distribution of the body parts of the victims who were injured/injured, both for living and dead victims. The figure shows that the head, neck and extremities are the most frequently injured body parts. In addition, the percentage of injuries in the thoracic and abdominal areas was higher on post-mortem than in living victims.

Based on the type of wound, abrasions are the most common type of injury in all areas of the victim's body, both living and dead victims. Details of the percentage of injuries on the victim's body based on the type of wound are presented in Table 2 and Table 3.

If analyzed from the type of violence found on the victim's body, more than three-fourths of criminal cases examined by the forensic department of RSMDJ were caused by blunt force injury.

Discussion

In this study period, 11,074 were clinical forensic

Table 2 Distribution of Wounds on Clinical Forensic Examination (Living Victims) based on the Type of Wound at Dr. M. Djamil General Hospital 2010–2020

Types of Wound	Head and Neck	Thorax	Abdomen & Pelvic	Upper Extremities	Lower Extremities
Abrassion	38%	57%	63%	64%	57%
Bruises	26%	22%	19%	13%	11%
Open wound	30%	10%	13%	15%	22%
Fracture	5%	11%	5%	7%	10%

Table 3 Distribution of Wounds on Forensic Pathology Examination (Corpses) based on the Type of Wound at Dr. M. Djamil General Hospital 2010–2020

Types of Wound	Head and Neck	Thorax	Abdomen & Pelvic	Upper Extremities	Lower Extremities
Abrassion	40%	52%	60%	52%	52%
Bruises	29%	27%	24%	24%	22%
Open wound	19%	10%	13%	16%	18%
Fracture	12%	11%	3%	9%	8%

cases (living victims) and 655 pathological forensic cases (corpses) were examined in RSMDJ. Most clinical forensic case examinations were in 2014, and the lowest decline was in 2020. This is thought to be related to the COVID-19 pandemic, so people are afraid to come to health services.[8]

From this study, it was known that the majority of victims are men, with the highest age group being 10–19 years old, followed by the 20–29 years old and 30–39 years old age group. This is in accordance with criminal data from the Indonesian Central Statistics Agency where 63.52% of crime victims in 2019 were male, with most of the victims coming from adults (93.14%).[1] Aktas et al.[4] and Brahmankar and Sharma study showed that almost three-fourths of the victims were male, with the highest group of victims aged 21–30 years.[9] both the highest age group in this study, as well as from several other studies, showed that most of the victims were in the productive age group with high activity and mobility levels.[10]

In this study, traffic accidents were the most common type of case in clinical forensic examinations, whereas forensic pathology cases were dominated by sudden death. This is in accordance with the study of medicolegal cases in a hospital in Turkey, India and Rawalpindi (Pakistan) where the most cases were traffic accidents.[9,11,12] Even though the sex of most of the victims is the same, in a study in Bahawalpur, Pakistan, it turned out that the variation in cases was more dominated by blunt and sharp object violence than traffic accidents.[13] In Saudi Arabia, medico-legal cases were dominated by fights or physical assault.[3] Lumente et al.[14] stated that the clinical forensic cases examined at the Bhayangkara Menado Hospital were dominated by sexual assault cases and cases of domestic violence.

Forensic pathology cases in Bandung were dominated by dead on arrival (DOA) 28%, followed by traffic accidents 26%, sudden death 22%, infanticide 7%, train accidents 5%, and murder 5%.[15] Likewise, more than half of the medico-legal examinations of dead body in India were accidents, followed by suicides and homicides.[16]

The most frequently injured body parts in this study were the head, neck, and extremities; which was dominated by abrasions and the most common cause of injury was blunt force trauma. This is in accordance with Ratu,et al study, where 50% of traffic accident victims suffered abrasions, especially in the head and lower limbs.[17] According to Kepel et al. most victims of traffic accidents are motorcycle riders. Scratches most often occur to drivers, motorcycle passengers, and pedestrians, while injuries to car passengers are more common in the form of bruising to the head.[18]

Most of criminal cases examined by the forensic department of RSMDJ were caused by blunt force injury. This is supported by Madadinet al.[3] study in Saudi Arabia and Zaheen's[6] study in a region in Pakistan where three quarters of medicolegal cases examined were due to blunt force trauma. Head and hands are the most injured body parts in Pakistan.

Based on this study, it can be concluded that there are several variations of medicolegal cases in various regions in Indonesia and abroad, including in Dr. M. Djamil General Hospital, Padang. Further research is needed to identify the pattern of injuries from each existing case group, so it is hoped that the data obtained can contribute to policymaking and knowledge to prevent criminal acts that cause human victims in the future. The limitation of this study related to the long data collection period so some medical records were not found when collecting research data.

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