




The Role of Forensic Science in Criminal Acts of Murder Cases in Indonesia

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Abstract

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BACKGROUND: As a science of conducting examinations and collecting physical evidence found at the crime scene and then presented in court, forensic science has a critical role in the judicial process of examining the crime scene. As this usually occurs in large cases, a forensic expert only comes to crime scene at the request of the authorities.

AIM: This present study aims to find out the role of forensic science in uncovering the identity and causes of death of victims of murder and to find out the obstacles arise and the efforts that can be made in the process of uncovering the crime of murder.

METHODS: This study revealed that the usual forensic stages include collection, protection, analysis, and presentation. Forensic science in uncovering crimes is very necessary.

RESULTS: This aims to minimize the occurrence of wrong sentences, wrong arrests, and assist the performance of law enforcers in determining the perpetrators of crimes. In every handling of a murder incident, both in the processing of crime scene and in determining the crime scene, it does not rule out the possibility that the investigator experiences difficulties or there is something that applies in processing the crime scene of a murder case.

CONCLUSION: In the future, law enforcers must get an understanding of its importance in studying forensic medicine in uncovering crimes, mainly concerning human victims because it is related to the rights of victims whose lives have been forcibly confiscated by the perpetrator.

Introduction

Various kinds of legal problems are increasingly occurring along with the times, in conjunction with the rapid increase in science and technology. This results in the behavior patterns of the community changing to become increasingly complex. More and more patterns of human behavior are not in accordance with the norms prevailing in society. These deviant behaviors can lead to an offense and even crime. Crime will cause unrest in society in general. Therefore, efforts are always being made to overcome these crimes, even though in reality, it is very difficult to completely eradicate crime because basically crime will continue to develop along with the development of society. Legal development will always develop along with the development of society. Likewise, legal issues will also develop along with the development of problems that occur in society. One of the negative impacts arising from the development of science and technology is the emergence of an increase in the type and modus operandi of crime so that the investigation and investigation process also requires a way to use modern science and technology. One of the assistive sciences to solve this problem is forensic science [1].

In Indonesia, crime is increasingly occurring, both conventional crime and digital crime (Cybercrime). Conventional crimes are in the form of murder, theft,

assault, and robbery, while cybercrime is in the form of carding, phishing, falsifying data, and spreading fake news (*hoax*). Every criminal act that occurs will be examined to find the material truth and the complete truth as possible. In this case, law enforcers are tasked with looking for valid evidence to reveal a criminal act. The stages of the criminal offense examination process are investigation, prosecution, and trial. An important stage in disclosing a criminal act is proof because it will determine whether someone is guilty or free. Article 183 of the Criminal Procedure states that a judge may not impose a sentence on a person unless with at least two valid pieces of evidence he is convinced that a criminal act actually occurs and the defendant is proven guilty. Based on article 184 of the criminal procedure, there are 5 pieces of evidence that are valid in the eyes of the law, namely, witness testimony, expert testimony, letters, instructions, and statements of the accused. Article 184 paragraph (1) of the criminal procedure states that valid evidence is: testimony of witnesses, expert statements, letters, instructions, and statements of defendants. In a system of proof of criminal procedural law that adheres to the *stelsel negatief wettelijk*, only legal evidence according to law can be used for proof, this means that outside these provisions, valid evidence cannot be used.

The investigation process in uncovering a crime requires a scientific approach. With a scientific approach, law enforcement does not only depend on

the testimony of living witnesses or suspects in the investigation of a crime. One example of a scientific approach is forensic science. When you hear the term forensics, the first thing you think of is post-mortem, autopsy, or death. This includes a branch of forensic science, namely forensic medicine. In addition, forensic science consists of forensic biology, forensic chemistry, forensic physics, forensic entomology, ballistics, forensic metallurgy, forensic toxicology, forensic odontology, forensic anthropology, forensic psychiatry, forensic psychology, forensic pathophysiology, and digital forensics. Pathophysiology of convergence of pathology with physiology is the study of disordered physiological processes that cause, result or are associated with disease or injury. Pathology is a medical discipline that describes conditions that are normally observed during disease states, whereas physiology is a biological discipline that describes the processes or mechanisms operating in an organism. Pathology describes abnormal or unwanted conditions, whereas pathophysiology attempts to explain functional changes that occur in a person due to a disease or pathological condition.

Forensic science utilizes medical science to assist law enforcement and solve problems in the field of law. The scope of forensic medicine has evolved over time, from the beginning only to the death of crime victims, unexpected and unexpected deaths, unidentified corpses, to surviving crime victims, or even suspected skeletons, tissues, and biological materials coming from humans [2]. The types of cases also extend from murder, assault, sexual crimes, domestic violence, child abuse and neglect, disputes over divorce, fraud and abuse of insurance, to violations of human rights.

A forensic expert has a critical role in the judicial process, namely examining the crime scene. As this usually occurs in large cases, the expert only comes to the crime scene at the request of the authorities. For example, there is a case of a plane crash where there are no survivors. Most of the bodies of the victims of the plane crashed, so it is necessary to identify the victims. This is where forensic experts work. During the identification process, the forensic odontologist examines the teeth for victim identification; the forensic anthropologist identifies the victim based on the bones found, a science dealing with the teeth, their structure and development, and their diseases. Whereas in a murder case, examination by a forensic expert, especially forensic medicine, will be very important in terms of determining the type of death and to find out the cause of death, time of death, which is very useful for the authorities to determine the suspect and sentence him. Apart from working at the crime scene, a forensic expert also works in a forensic laboratory. In Indonesia, forensic laboratories only exist within the local police, and not all of the existing local police have a forensic laboratory. The forensic laboratory is a place to analyze

evidence. For example, in the case of drug abuse, determining the type of drug and whether a person is consuming drugs can be done at the crime scene or at the laboratory. In other cases, such as cases of rape, murder cases with firearms, cases of counterfeit money, cases of fire, cases of assault, and cases of murder using poison. In general, the usual forensic stages include acquisition, preservation, analysis, and presentation. Forensic science in uncovering crimes is very necessary. This aims to minimize the occurrence of wrong sentences, wrong arrests, and assist the performance of law enforcers in determining criminals. In a typical criminal investigation, a crime scene investigator (CSI), sometimes known as a CSI, will collect physical evidence from a crime scene, victim, and/or suspect. Forensic scientists then examine the collected material to provide scientific evidence to aid in police investigations and court proceedings. As such, they often work very closely with the police. If a death occurs, forensics can be used to determine when, where, and how someone died. If it is not a natural death, forensics can also prove if someone else was responsible for causing the death and what weapons were used in the crime [3].

Crime under the guise of law enforcement must be watched out for Indonesian society in a transitional period since the reform era. Currently, there is a lot of bias between law enforcement efforts and law users that are carried out for personal or group interests where Indonesia is still in a transition period toward a democratic society. There has been a lot of abuse of authority in the legal, political, and economic fields. All policies are carried out in the framework of mere formality. In fact, there are many crimes behind it that are camouflaged. The case of the former Chairman of the Corruption Eradication Commission, Antasari Azhar, in the murder of Nasrudin is one example of how the crime of Nasrudin's murder can be wrapped up as if law enforcement efforts were being carried out. A special team was formed to deal with Nasrudin on the pretext of state interests. In fact, the alleged executors of Nasrudin's murder were informed that they were on duty in the interests of the state. In this case, knowledge is needed that can be used in investigating a criminal case for the sake of law and justice.

This science is often known as Forensic Medicine. Forensic Medicine has a very important role in revealing a crime that has occurred, especially in cases that are difficult to solve or require special techniques in disclosing them. Based on the context of the study, this article aims to explore the role of forensic science in uncovering the identity and causes of death of victims of murder as well as the obstacles arise and the efforts that can be made in the process of uncovering the crime of murder.

Materials and Methods

This study employed doctrinal legal research. There were several approaches taken by the author in compiling this research, namely statutory and conceptual approaches. Primary Legal source are binding legal materials because they are issued by the government which includes; (a) Article 224, 338, and Article 522 of the Criminal Code, Code of Criminal Procedure, and regulation of the Head of the National Police of the Republic of Indonesia Number 12 of 2011 concerning Police Medicine [4]. The data collection technique carried out by researchers was through literature study by examining the rules in law, journals, or other existing legal sources that are related to the subject matter under study. This research used descriptive qualitative research by examining data that have been obtained from the literature and selecting other sources that are in accordance with the object under study, after which it can be concluded and drawn baselines objectively and systematically in the form of a narrative [5].

Result and Discussion

Forensic science and its legal basis for criminal case

As a field of science that is used to assist the law enforcement process through the application of science, forensic science is used for legal purposes by providing scientific evidence that can be used in court to solve crimes [6]. It is utilized to examine and collect physical evidence found at the crime scene and then presented in court. Important information provided by forensic science helps the justice system. By using forensic science, the information obtained is to make light of a case by examining and analyzing dead evidence [7]. With forensic science, various information must be obtained, such as information on *corpus delicti*, from examination of both crime scene and evidence can explain and prove that a criminal act has occurred and information on the modus operandi as some criminals have their own ways of committing crimes. By examining the evidence in relation to the modus operandi, it can be seen who the perpetrators are. Moreover, forensic science aims to link a suspect with a victim, examining evidence at the crime scene or the victim can result in the suspect's involvement with the victim because in a criminal act there must be material from the suspect left behind with the victim. It is also to link a person to a crime, after a criminal act has occurred, there are many possibilities for a crime scene or victim by someone other than the suspect to take advantage. Other information obtained is about

disproving or supporting a witness's testimony in which examination of evidence can provide clues as to whether the information provided by the suspect or witness is lying or not and identifying a suspect. In this regard, the best evidence that can be used to identify a suspect is fingerprints, because fingerprints have very characteristic characteristics and are very individual for each person. Finally, the information is about providing investigative leads, examination of evidence can provide clear directions.

In the crime of murder, forensic science is very much needed. The crime of murder is included in a material crime (*materiale delict*), meaning that for the perfection of a criminal act, it is not enough to commit the act, but it becomes a condition that has consequences. The criminal act of murder causes disturbance to public order and state order. Murder is an inhuman crime because murder is an act that results in the loss of the life of another person, whether it is done intentionally or unintentionally [8].

The crime of murder can be carried out by planning in advance which the legislators call *moord* or abbreviated as premeditated murder which is an act of murder with the heaviest threat of punishment of all forms of crimes against human souls, as stated in Article 340 of Criminal Code [9]. Criminal code stated that "anyone who deliberately seizes the life of another person, is threatened with premeditated murder, with the death penalty or life imprisonment or for a specified period of time, a maximum of 20 years." [10]

Forensic medicine is an interdisciplinary science which in everyday practice, applies all the knowledge that medical sciences have accepted as reliable and scientifically solid facts or processes and qualitative and quantitative definitions with the help of which accurate and reliable statements can be made [11]. The legal basis for forensics is in the Criminal Code and Law No. 8 of 1981 concerning Criminal procedure. The Criminal code states that experts who refuse to provide assistance to the police can face criminal penalties as stipulated in Article 224 and Article 522 of the Criminal Code. Article 224 Criminal Code stated that anyone who is summoned as a witness, expert or interpreter according to the law deliberately does not fulfill the obligations under the law which must be fulfilled, is threatened: (1) In a criminal case, by a maximum imprisonment of 9 months; (2) In other cases, by a maximum imprisonment of 6 months (Article 224 of the Criminal Code). Furthermore, Article 522 of the Criminal Code: Any person who, according to the law, is summoned as a witness, expert or interpreter, does not come illegally, and is punishable by a maximum fine of 900 rupiahs (Article 522 of the Criminal Code). If the police have asked for help, forensic experts are obliged to provide assistance. Then, there is no mention of forensics in the Criminal procedure. What is regulated in the procedure is related to medical

experts. Referring to various types of forensics, forensic experts can be said to be medical experts. Regarding medical experts, Article 133 paragraph (1) of the Criminal procedure authorizes investigators to submit requests for information from judicial medical experts if the investigation involves injured, poisoned, or dead victims. This request for expert information is made in writing.

The role of forensic science in uncovering the identity and causes of death of victims of murder

Forensics can be defined as the field of science that is used to assist the process of upholding justice through the process of applying science [12]. Various kinds of sciences that are related to the problem of crime, among others, criminal law, criminal procedural law, forensic medicine, forensic chemistry, forensic chemistry, and forensic psychology. A person who studies forensic science and applies it to the world of work is known as a forensic expert [13]. Based on article 184 of the Criminal procedure, there are 5 pieces of evidence that are valid in the eyes of the law, namely, witness testimony, expert testimony, letters, instructions, and statements of the defendant. In a crime, it will definitely leave a trail even though it has been planned very neatly and perfectly. We call these traces as evidence that can be examined and analyzed and then the results of the examination are obtained [14]. The results of this examination are called evidence which can be classified as expert witness testimony if the forensic expert conducting the examination is asked for information at a court. It is classified as a letter if the result of the examination is in written form or what is called an examination report [15].

However, in reality, the process of examining evidence does not always run smoothly and without difficulty, so that a forensic expert must be thorough and precise because the results of his examination play an important role in making decisions in court. Accordingly, the role of forensic science is to make a case clear by searching for and finding the complete material truth about an act or criminal act that has occurred [16]. The usual forensic stages include collection, protection, analysis, and presentation. Forensic science in uncovering crimes is very necessary. This aims to minimize the occurrence of wrong sentences, wrong arrests, and assist the performance of law enforcers in determining the perpetrators of crimes.

Forensic doctors play a very important role in law enforcement to reveal evidence that can be either a body or a part of a human body [17]. There are many examples of cases, for example, in cases of murder, cases of rape, cases of maltreatment, and even mutilation cases that require the role of a forensic doctor to assist law enforcement officials in uncovering a crime in accordance with their expertise and knowledge

of how the crime was committed by the accused of examining the victim [18]. Forensic doctors also play an important role in finding material truth in criminal cases, the fields of law and medicine cannot be separated to enforce the law, especially in the context of proving a person's guilt relating to the body or parts of the human body [19]. Seeing the growing expertise of criminals who can hide their crimes before the law, so that the role of doctors who have their own expertise in helping the process of solving cases related to the human body is increasingly needed, only doctors are able and can help reveal the mystery of the state of evidence that can be in the form of a body or part of the human body. The role of forensic doctors in proving criminal cases is to assist law enforcement officials from the investigation stage to the trial stage regarding criminal acts related to the human body or soul to make clear the criminal incident [20].

Forensic science and criminalistics laboratories generally provide the following types of information based on the scientific examination of physical evidence collected from scenes of crimes, victims, and suspects [21]. If viewed from the practice of its implementation, the role of the Forensic Laboratory, namely as an expert witness, is needed in every stage of a case examination which is closely aimed at proving the case in question, and in the end the proof must be carried out in front of the court [22]. In relation to proof of a criminal case, in general, the role of expert testimony can be given into two forms, the first is a written statement commonly called *visum et repertum* and expert statement (results of laboratory research).

The doctor, in this case, is a forensic laboratory specialist who can provide assistance in relation to the judicial process in terms of examination at the crime scene, examination of evidence, and providing testimony in court proceedings. In terms of examination at the crime scene, usually requested by the authorities in terms of uncovering the causes of death. This examination by a forensic expert will be very important in determining the causes of death, in this connection, the doctor will make a report on the criminalistics laboratory examination report. In providing testimony in court proceedings, what is said by forensic expert will be categorized as expert testimony.

Expert information is required as formulated in Article 180 paragraph (1) of the Criminal Procedure, which reads as follows (Article 180 paragraph (1) of the Criminal Procedure) stating that in the event that it is necessary to clear up issues arising in a court session, the Chief Judge of the session may ask for expert information and may also submit new materials by those concerned. The calling expert witnesses are specialists in medical science to justice is done even if the court case already has a post-mortem. However, sometimes, judges still require the presence of a doctor maker of a post mortem to testify orally as an expert or also referred to statements of experts. This information

was given by the doctor because there were still doubts about the type of psychotropic used, even though there was a *visum et repertum*, also to justify his opinion. Another reason for the information given at trial is because it cannot be given at the time of examination by the investigator or the public prosecutor.

Regarding the *visum et repertum*, although in the Criminal Procedure there is no requirement for investigators to submit requests to forensic doctors or other doctors (experts), for the sake of case examination and to make the case clearer and to support the judge's conviction, it would be better if the *visum et repertum* is requested from the doctor concerned. Settling criminal cases requires proving the incidents of the cases that occurred to prove the perpetrator who was involved in the crime. Proof of a criminal case is an attempt to prove that it is true that the criminal act in question has occurred and that the defendant is the perpetrator of the crime [23]. Proof is done by submitting valid evidence before the court. In order to obtain or at least approach the material truth, evidence (investigation and examination of physical evidence) must be proven scientifically.

Valid evidence is evidence that is in accordance with the law, namely fulfilling the principle of "admissibility" (acceptable) as regulated by the prevailing laws and regulations. Forensic and criminalistics experts play a role in evidentiary efforts by providing two valid pieces of evidence, namely expert accounts and letters (made by experts). In this case, the expert's testimony is not limited to the provisions concerning "things that the witness has experienced or heard or seen," but it is given the opportunity to give an opinion or opinion based on his expertise, as long as the applicable provisions, and then, Criminal cases can be uncovered by the police using sophisticated identification technology by taking fingerprints of victims using the Mobile Automated Multi Biometric Identification System (MAMBIS) tool [24].

Evidence is the presentation of evidentiary tools that can be used as legal evidence by a judge examining a case to provide certainty about the truth of the events presented [25]. In Article 184 paragraph (1) of the Criminal procedure, it is stated that the valid evidence is: witness statements, expert statements, letters, instructions, and statements of the accused. In a system of proof of criminal procedure law that adheres to the negative *wettelijk* system, only evidence tools that are valid according to law can be used for proof [26]. This means that outside of these provisions it cannot be used as valid evidence.

The Criminal Procedure does not clearly state what is meant by evidence. However, Article 39 paragraph (1) of the Criminal Procedure states what can be confiscated, namely objects or claims of a suspect or defendant which are wholly or partly alleged to have been obtained from a criminal act or as the result of a criminal act; objects that have been used directly to commit a criminal act or to prepare it; objects that

are used to obstruct a criminal investigation; objects specially made or intended to commit a criminal act; and other objects that have a direct relationship with the criminal act committed.

The public prosecutor is obliged to prove the events presented by submitting evidence before the trial to be judged by the panel of judges for its correctness. Then, the Public Prosecutors, Legal Counsel and Panel of Judges conducted a legal review. The public prosecutor discloses the results of the evidence in a *requisitoir*. Then, the Legal Counsel responded to the Public Prosecutor's indictment in a note of defense (*pledoi*), which would then be discussed by the Panel of Judges in the final verdict [27]. In the procedure of proof of the Public Prosecutor, the Legal Advisor and the Panel of Judges who lead the examination of criminal cases at the trial must pay attention to the provisions of the law of evidence which govern the method of proof, burden of proof, kinds of evidence, as well as the strength of the evidence, and so on.

The obstacles arise and the efforts that can be made in the process of uncovering the crime of murder

In every handling of a murder incident, both in the processing of crime scene and in determining the crime scene, it does not rule out the possibility that the investigator experiences difficulties or there is something that applies in processing the crime scene of a murder case [28], [29]. There are some obstacles faced by the investigator in determining crime scene.

The first is about changes in the authenticity of places that occurred at the crime scene, such as damage and changes in conditions at the crime scene before the investigative team arrived. These things were influenced by several factors such as natural factors, animal factor, and human factors. Natural factors can be an obstacle for investigators in the process of handling a crime scene because they can change the authenticity of a crime scene, such as rain, heat, storms, and floods. Animal factor refers to the traces or items left by the perpetrator can change due to the presence of animals entering the crime scene, so that the traces are left at the scene [30]. Finally, human factors can be found in some cases, such as the suspect tries to remove evidence, a sense of public curiosity so that it is included in the crime scene, lack of accuracy of officers handling crime scene, late reports so that the crime scene is damaged by people, witnesses, or the public, and statements of witnesses who seem closed or covered up for fear of giving testimony [31].

The second is that investigators lack experience in conducting investigations. It does not rule out that internal factors can also be an obstacle or obstacle to the crime scene investigation process, such as the inexperience of investigators, which means that investigating officers can also be an obstacle to

the course of the investigation process. Such as the lack of understanding of the crime scene handling procedure, the lack of the level of accuracy of one of the investigating officers, the lack of professionalism of the investigating officers in the crime scene handling process so that the results that the investigating officers should obtain to make disclosures at the crime scene are not optimal.

The third is the absence of equipment at the time of carrying out the investigation. In searching for and collecting evidence at the crime scene, the police as investigating officers often encounter obstacles in the field, this is due to limited facilities and infrastructure. The success of investigating officers in handling the crime scene cannot be separated from the maximum and the professionalism of the performance of the investigating officers, but this is also supported by the completeness of tools that are very functional in helping educators to handle crime scenes such as for example in the framework of examining fingerprints, tools such as laser print finger and laser print detector. For now, such tools are only used and provided at the regional police and for their staff, if needed, these tools can only send existing fingerprint samples for comparison at the regional police, this will take quite a long-time which result in the investigation process was not effective.

The fourth is unavailability of fingerprint retrieval database. Legal factors can also be a hindering factor in the processing of the crime scene. For now, there is no legal regulation that specifically regulates the implementation of the police's task of taking fingerprints as a whole, whether foreigners residing in the territory of Indonesia or Indonesian citizens themselves, the unavailability of data bases is therefore certainly an obstacle in investigation process in the event of a criminal act in which the perpetrator or victim is located in Indonesia, meaning that the investigating officer has difficulty matching the fingerprints of the victim or perpetrator which results in the processing of the crime scene being hampered due to the fingerprint tracing system manually.

The efforts made by investigators to overcome obstacles when determining the place of the crime of murder case. The Police strive to immediately respond to public reports to come to the crime scene to secure and protect the crime scene. Hence, the crime scene does not change and its authenticity is maintained. There is coordination between senior and junior investigators in order to cooperate and be trained in investigative training, especially for investigators who have just been appointed as investigators. The police for now are still trying to manually investigate the discovery of fingerprints due to the absence of comparative fingerprints.

These obstacles did not discourage investigators from continuing to investigate the case. The investigators retraced the series of events starting from the crime scene, the parents of the victims, and the

surviving witnesses. However, after several days, they still found no new clues. For this reason, the investigators decided to call in the presence of an expert, in this case a forensic doctor, to perform an exhumation [32]. An exclamation is a medical action carried out on the basis of law in the framework of proving a criminal act by re-digging a body that has been buried and based on the permission of the victim's family. Finally, by carrying out the process by experts, the investigators again received new, clearer instructions. Hence, the role of experts in the process of investigating these cases has a big role in resolving criminal cases that require such experts. Experts in handling cases are very influential, not forgetting their role when conducting crime scenes when there is a murder case. Murder criminal cases can be solved with expertise. Their presence is very helpful and even indispensable in handling criminal cases [33].

The definition of expert testimony according to Article 1 point 28 of the Criminal Procedure is information provided by a person who has special expertise on matters needed to make clear a criminal case for the purpose of examination. In criminal cases, expert statements are regulated in Article 184 paragraph (1) of the Criminal Procedure which states that one of the valid evidences in court is expert testimony (Nurhidayati, 2017). Furthermore, Article 186 of the Criminal Procedure which states that an expert's testimony is what an expert state in a court session [34].

Conclusion

Forensic medicine helps law enforcement officials to reveal acts that constitute a crime of murder such as performing identification to find the identity and causes of death of victims of crime of murder. In the event that the identity of the dead victim is not found, looking for clues related to documents that can show the identity of the victim. Tracing the victim's identity using the MAMBIS, sending the body to the hospital for an autopsy examination to find out the identity of the victim as a whole, and disseminating information related to the results of autopsy examinations to the public in order to get a response from the victim's family are also significant in this sense. Nevertheless, investigator also faces obstacles in determining the crime scene of a murder crime such as natural factor, animal factor, human factor, and the absence of equipment at the time of investigation.

In the future, law enforcers must get an understanding of its importance in studying forensic medicine in uncovering crimes, mainly concerning human victims because it is related to the rights of victims whose lives have been forcibly confiscated by the perpetrator. In addition, the issue of post-mortem is the main problem that connects doctors with

investigators or the judiciary, so the understanding of this matter must be well mastered, not only for doctors but also for investigators, public prosecutors, defenders, and court judges. The identification, investigation and examination stages are carried out by personnel who have professional competence and standards.

References

- Iskandar O, Suwanda NH. The Role of Forensic Science in Disclosure of Criminal Acts of Physical Violence in the Household Perpetrated by Wives Against Husbands: (Case Study Decision No. 1550/Pid. Sus/2015/Pn. Mks). *Krtha Bhayangkara*. 2019;13(1):39-53.
- Sampurna B, Samsu Z, Siswaja TD. *The Role of Forensic Science In Law Enforcement*, 2nd Edition. Jakarta: Faculty of Medicine, University of Indonesia; 2008.
- Maramis MR. The role of forensic science in solving sexual crimes cases in cyberspace (internet). *J Legal Stud*. 2015;2(7):42-53.
- Sunggono B. *Legal Research Methodology*, Jakarta: PT. Raja Grafindo Persada; 2007.
- Sugiyono M. *Qualitative Quantitative Research And R&D*. Bandung: Alfabeta; 2008.
- Purba O, Silalahi R. The role of forensic medicine in proving criminal acts of persecution. *Retent J*. 2020;1(2):127-33.
- Wuwung MJ. The crime of premeditated murder using poison. 2018;7(4):63-70.
- Soekanto S, Purwacaraka P. *Joints and Indonesian Law*. Bandung: Citra Aditya Bakti; 1992.
- Lamintang PA. *Special Offenses for Crimes Against Life, Body and Health*. 2nd ed. Jakarta: Sinar Grafika. 2010.
- Grafika RS. *Criminal Procedure and Criminal Code*. Jakarta: Sinar Grafika. 2013.
- Krishan K. Anthropometry in forensic medicine and forensic science-'Forensic Anthropometry'. *Internet J Forensic Sci*. 2007;2(1):95-7.
- Firth JB. Forensic science laboratories. *Med Leg Criminol Rev*. 1945;13(3):120-33.
- Lawless CJ, Williams R. Helping with inquiries or helping with profits? The trials and tribulations of a technology of forensic reasoning. *Soc Stud Sci*. 2010;40(5):731-55. <https://doi.org/10.1177/0306312710378787>
PMid:21553603
- Alexander T. DNA evidence-have we progressed in the last 10 years? *Med Leg J*. 2016;84(3):116-24. <https://doi.org/10.1177/0025817216636329>
PMid:27048762
- Faiza N. The Role of Forensic Science in Law Enforcement in Indonesia; 2019. Available from: <https://www.kompasiana.com/nrlfaiza/5dc1323ed541df6ed908f552/peran-ilmu-forensik-dalam-penegakan-hukum-di-indonesia>. [Last accessed on 2022 Mar 23].
- Lee HC, Palmbach T, Miller MT. *Henry Lee's Crime Scene Handbook*. Cambridge, Massachusetts: Academic Press; 2001.
- Mnookin JL, Cole SA, Dror IE, Fisher BA. The need for a research culture in the forensic sciences. *UCLA Law Rev*. 2010;58:725.
- Colquitt JA. The Alabama Criminal Code-25 Years and Counting. *Alabama Law Review*. 2004;56(4): 967-1008.
- Monita Y, Wahyudhi D. The role of forensic doctors in proving criminal cases. *Innov J Legal Stud*. 2013;6(7):15-26.
- Perlin ML. Supreme court, the mentally disabled criminal defendant, and symbolic values: Random decisions, hidden rationales, or doctrinal abyss. *Ariz Law Rev*. 1987;29:1-32.
- Peterson J, Sommers I, Baskin D, Johnson D. The role and impact of forensic evidence in the criminal justice process. *Natl Inst Justice*. 2010;1(1):1-51.
- Bonnie RJ, Slobogin C. The role of mental health professionals in the criminal process: The case for informed speculation. *Va Law Rev*. 1980;66:427.
- Wilkinson LB Jr. *Procedures V. proceeds: Evaluation of the commercial reasonableness of dispositions of collateral under article nine of the uniform commercial code*. *Tenn Law Rev*. 1995;63:987.
- Rifai M, Ali D, Mahfud M. (2019). The Use of Fingerprints in the Criminal Case Investigation Process To Find Out The Identity Of The Victim And Who Did The Criminal Acts. *Syiah Kuala Law Journal*, 3(3), 330-347.
- Nuzunulriyanti R. The Function of Forensic Medicine in Revealing Murder Cases Against Mother and Child. *Poenale J*. 2017;2(1):80-96.
- Martiman P. *System of Evidence and Evidence Tools*. Jakarta: Ghalia Indonesia. 2005.
- Atmasasmita R. *Human Rights and Law Enforcement*. Binacipta: Jakarta; 1997.
- Sharma M, Sharma D. Murder mystery solved with the help of forensic investigation. *Braz J Forensic Sci Med Law Bioeth*. 2020;9(3):366-72.
- Setiawan B, Mashdurohaturun A, Chalim MA. Investigation of the perpetrators of the crime of murder with a weight at the Central Java Regional Police. *J Khaira Ummah Law*. 2017;12(4):909-16
- Bakhtiar HS, Sofyan AM, Muhadar SS. The essence of autopsy in the criminal investigation process. *Int J Sci Technol Res*. 2019;8(10):9-16.
- Flora HS. Fingerprint identification Function in the Case Reveal crime of murder. *South East Asia J Contemp Bus Econ Law*. 2016;9(4):38-43.
- Gehl R, Plecas D. *Introduction to criminal investigation, processes, practices, and thinking*. Victoria: Justice Institute of British Columbia. 2017.
- Syaufi A, Zahra AF. The Existence of Customary Law: Badamai Customary Law. *Research Horizon*. 2021;1(3):94-99.
- Mukhlis R, Indarti E, Pujiono. Social and managerial aspects in policy making in criminal prosecution basis. *Int J Sci and Tech Res*. 2020;9(1):1637-1639.