

Knowledge, Attitude, and Perception about Autopsy among Community in Bandung

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Abstract

Background: Autopsy is a comprehensive evaluation of the body and the circumstances surrounding an individual's death. Currently, autopsy rates in various countries have been decreased in recent years. This decrease was due to the rejection by people who had inadequate knowledge, attitudes, and perceptions about autopsies. This study aimed to determine the knowledge, attitudes, and perceptions of Bandung residents about autopsies.

Methods: This cross-sectional descriptive observational study involved people in the Bandung City who were over the age of 20 years during the period August to September 2020. The sample was obtained using a snowball system. Research subjects filled out a questionnaire through a Google form containing questions about knowledge, attitudes, and perceptions. The results were categorized based on the median for each variable.

Results: Subjects with questionnaire data obtained were 378 people with an average age of 30.30±13.48 years, and most (66.9%) were female. A total of 259 people had adequate knowledge (68.5%), 254 people (67.2%) had a positive attitude, and 249 people (65.9%) had a positive perception, with a median value of 7, 6, and 12, respectively. However, 95 people did not agree to do an autopsy on their relatives or family to determine the cause of death.

Conclusion: The subject as a whole shows adequate knowledge, positive attitude, and perception. However, there are still some people who show inadequate knowledge and poor attitudes and perceptions about autopsies.

Keywords: Attitudes, autopsy, community, knowledge, perception

Introduction

An autopsy is a comprehensive evaluation of the body and circumstances surrounding an individual's death to find the cause of death.¹ In general, there are two types of autopsy, namely clinical autopsy, also known as a hospital or academic autopsy, and medicolegal or forensic autopsy. A clinical or academic autopsy is conducted by the medical officer who has been permitted by the family. A forensic autopsy is performed according to legal systems; some can be conducted without the deceased's next of kin's permission. This autopsy is performed on the legal authorities' instructions responsible for investigations of sudden, suspicious, obscure, morbid, litigation, or criminal death.^{2,3}

Several studies found that there has been a drastic decrease in the rate of the autopsy performed by hospitals around the world in the last few decades.^{4,5} The autopsy rate is calculated by the total number of autopsies performed by hospitals expressed as a percentage of the country's total number of deaths.⁴ The hospital autopsy (clinical autopsy) rate in the United States was 41% in 1946, 34.9% in 1972, and 21.7% in 1975. In 1981, the United States' autopsy rate was 15.7%, and in 2003 it had fallen to 11%.⁶ Subsequently, the decline continued until 2007, the rate of the autopsy performed by hospitals in the United States reached 4.3%.⁷

The decline in clinical autopsy also occurred in England and Wales. The hospital autopsy rate decreased from 8.9% in 1966 to 1.7% in

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1991.⁶ In 2013, the average hospital autopsy rate in the United Kingdom was 0.69%, with details of the autopsy rate in England at 0.51%, in Poland at 2.13%, 0.65% in Wales and 0.46% in Northern Ireland.⁴ Similar circumstances were found in China, Zambia, and the Netherlands.^{6,8}

The data above shows that the reduction is particularly pronounced only in the autopsy performed by the hospital (clinical autopsy). The decrease in the clinical autopsy rate is due to the refusal to perform an autopsy.⁶ Unlike clinical autopsy, the medicolegal autopsy does not require family consent. In Indonesia, a forensic autopsy is performed for some suspicious death or needs more investigation purposes. However, once an investigator decides on the need for an autopsy, even the deceased's next of kin cannot hinder its implementation (article 134 Indonesia's Code of Criminal Procedure and Article 222 Indonesia's Penal Code). An autopsy report performed by a forensic pathologist is considered valid evidence.⁹

A forensic pathologist who will perform a clinical autopsy needs permission from the deceased's next of kin.^{10,11} However, getting permission can be difficult because the deceased's next of kin considers the autopsy differently from the forensic pathologist.¹⁰ This rejection can be caused by several factors such as lack of knowledge and inadequate perception of the autopsy.^{6,12}

Wrong perceptions circulating in the community, such as organs or tissues are taken and sold, or medical students use their organs and remain for practice. Apart from that, other factors also affect humanitarian reasons, religious differences, and administrative costs, which cause the next of kin to refuse to perform an autopsy.^{6,13}

The negative perception is caused by several factors such as lack of knowledge about autopsy among people, religious and cultural reasons, and the use of other techniques or procedures to make a conclusive diagnosis, which causes autopsy to be considered an unnecessary procedure.^{6,12} Therefore, this study was conducted to investigate people's knowledge, attitude, and perceptions about autopsy in Bandung.

Methods

This research was descriptive survey research with a cross-sectional research design on Bandung citizens. This study's inclusion criteria were the Bandung citizens who were

over 20 years of age. The exclusion criteria in this study were people not willing to fill out the questionnaire. The sampling technique used was the snowball system on subjects that met the inclusion and exclusion criteria. Researchers obtained subjects based on family or friend relations. Furthermore, those subjects were asked to select friends or family to be the subject.

The questionnaire used was a modified questionnaire from a research questionnaire conducted by Kaoje AU (2016).¹⁴ Researchers made modifications based on different environmental conditions. The questionnaire includes three parts such as knowledge, attitudes, perceptions (KAP) about the autopsy. The questionnaires were distributed online using the Google form.

The knowledge in this study referred to either facts or information about the autopsy known to the respondent. Respondents' attitudes and perceptions were categorized as negative and positive. The variables of this study were knowledge, attitudes, and perceptions of respondents. The normality test was carried out using the Kolmogorov-Smirnov test. The median value obtained from the respondent's score data was used as the reference value for the knowledge, attitude, and perception variables based on the test results. This median value was used as a cutoff point to interpret the results of the respondents' scores. For knowledge and attitude variables, scores above the median were considered good and positive. Values below the median were considered inadequate and negative. However, for the perception variable, the value category is reversed. Values above the median are considered to have negative perceptions. Values below the median mean that in the category of positive perception, the questionnaire's statements are wrong statements about the autopsy.

This research has received a research permit from the Research Ethics Committee of Universitas Padjadjaran with number 703/UN6.KEP/EC / 2020.

Results

Four hundred and twenty-three people accessed the internet link containing the Google form questionnaire. However, only 387 people were Bandung citizens and proceeded to the informed consent section. Of the 387 people, 386 of them were willing to take part in the research. Then only 378 met the inclusion and exclusion criteria.

Table 1 Characteristics of Research Subjects

Characteristics	n=378	
	Frequency (n)	Percentage (%)
Age (years)		
20–29	242	64.0
30–39	34	9.0
40–49	38	10.1
50–59	59	15.6
>60	5	1.3
Gender		
Male	125	33.1
Female	253	66.9
Occupation		
College student	194	51.3
Government employees	71	18.8
Private employees	66	17.5
Entrepreneur	27	7.1
Housewife	13	3.4
Retired	3	0.8
Unemployment	2	0.5
Police officer	2	0.5
Education level		
High school	196	51.9
Diploma	14	3.7
Undergraduate	126	33.3
Postgraduate	42	11.1
Religion		
Muslim	358	94.7
Christian	10	2.7
Catholic	10	2.7

Most of the research subjects were in the age range of 20 to more than 30 years, most of them were female, and more than half had high school education. Most of the occupations were students, and the majority of respondents were Muslim (Table 1).

The average value obtained from the results of the questionnaire containing the variables of knowledge, attitudes, and perceptions based on the socio-demographic characteristics of respondents was depicted in Table 2. There were differences in the mean scores of knowledges, attitudes, and perceptions based on gender, age group, occupation, education level, and religion of the respondents. As a reference, the median value for knowledge was 7, 6 for attitude, and 12 for the perception variable. Based on this reference, 243 respondents under the age of 30 years had the lowest average knowledge about autopsy but

tended to have a good perception of autopsy (Table 2).

Only 36 (9.5%) respondents were aware that a medicolegal autopsy had been performed and did not require their next of kin's consent. A total of 217 (57.4%) respondents incorrectly answered the clinical autopsy (P5). Then 245 respondents incorrectly answered the question about the purpose of the autopsy (P8). Meanwhile almost all of the respondents knew that autopsies were performed by forensic doctors (P11) and answered one of the objectives of the autopsy which was to help research and teaching (P9) correctly, more than 50% of the respondents answered correctly for other knowledge questions (Table 3).

The distribution of community responses to the proposed attitude statements was shown in Table 4. The assessment of a positive

Table 2 Value of Knowledge, Attitudes, and Perceptions of Research Subjects (n=378)

	Knowledge	Attitude	Perception
General characteristic			
Mean \pm SD	7.1 \pm 1.87	5.88 \pm 1.36	11.57 \pm 2.76
Median (Cut off)	7	6	12
Based on gender			
Male (n=125)	7.04 \pm 1.86	6.09 \pm 1.30	11.71 \pm 3.04
Female (n=253)	7.13 \pm 1.87	5.77 \pm 1.38	11.50 \pm 2.62
Based on age			
20-29 years old (n=243)	6.89 \pm 1.94	6.00 \pm 1.34	10.98 \pm 2.57
30-39 years old (n=34)	7.29 \pm 1.64	5.85 \pm 1.10	13.21 \pm 2.36
40-49 years old (n=38)	7.39 \pm 1.63	5.63 \pm 1.30	12.21 \pm 2.97
50-59 Years old (n=59)	7.66 \pm 1.69	5.56 \pm 1.50	12.53 \pm 2.73
>60 years old (n=5)	7.40 \pm 2.30	5.60 \pm 2.19	12.80 \pm 5.02
Based on occupation			
College student (n=194)	7.02 \pm 1.86	5.94 \pm 1.35	10.77 \pm 2.55
Government employees (n=71)	7.68 \pm 1.46	5.51 \pm 1.49	12.56 \pm 3.03
Private employees (n=64)	6.74 \pm 1.94	6.03 \pm 1.22	12.15 \pm 2.33
Not working (n=46)	6.92 \pm 2.15	5.61 \pm 1.21	12.13 \pm 2.49
Police officer (n=2)	8.00 \pm 2.82	7.00 \pm 0.00	17.50 \pm 3.53
Based on education level			
High School (n=196)	6.87 \pm 2.01	6.01 \pm 1.32	11.08 \pm 2.64
Diploma (n=14)	7.57 \pm 1.99	5.43 \pm 1.50	11.64 \pm 2.49
Undergraduate (n=126)	7.14 \pm 1.71	5.73 \pm 1.34	12.06 \pm 3.14
Postgraduate (n=42)	7.93 \pm 1.31	5.86 \pm 1.49	12.36 \pm 3.14
Based on religion			
Muslims (n=358)	7.12 \pm 1.87	5.85 \pm 1.37	11.68 \pm 2.74
Christians (n=10)	6.40 \pm 2.01	6.80 \pm 0.79	9.70 \pm 2.75
Catholics (n=9)	7.30 \pm 1.41	6.00 \pm 0.81	9.70 \pm 2.36

Note: Numbers in bold mean that the value is above the median or cut-off that consider as good scores

Table 3 Knowledge about Autopsy

Questions	Correct Answer n(%)
A medicolegal autopsy is an examination performed on bodies with unnatural deaths	232 (61.4)
An autopsy is done not only for legal purposes	313 (82.8)
A medicolegal autopsy is a form of autopsy	290 (76.7)
A medicolegal autopsy is an autopsy that requires permission from family/relatives	36 (9.5)
A clinical autopsy is an autopsy that does not require family/next of kin's permission	161 (42.6)
Knowing the cause of a person's death is not the goal of an autopsy	293 (77.5)
An autopsy can help determine whether pre-death medical care (medication) is appropriate	306 (80.9)
An autopsy is performed to provide for a tissue or organ transplant	133 (35.2)
Autopsies can aid medical teaching or research	342 (90.5)
The autopsy was done to reveal the mistakes that hospitals and doctors made	232 (61.4)
An autopsy is usually performed by a forensic specialist	347 (91.8)

Table 4 Attitudes towards Autopsy

Questions	Very Important n (%)	Urgent n (%)	Not Important n (%)	Yes n (%)	No n (%)
What does the respondent think about clinical autopsy?	105 (27.8)	263(69.6)	10(2.7)	-	-
What does the respondent think about medicolegal autopsy?	131 (34.7)	237 (62.7)	10 (2.65)	-	-
Does the respondent think the information regarding the purpose of the autopsy is insufficient?	-	-	-	299 (79.1)	79 (20.9)
Does the respondent support autopsy practice?	-	-	-	349 (92.3)	29 (7.6)
Does the respondent feel the need to know the cause of death of a family member/relative who died?	-	-	-	318 (84.1)	60 (15.9)
Would the respondent agree to carry out autopsy examinations on the family members or relatives' bodies to determine the cause of death?	-	-	-	283 (74.9)	95 (25.1)

attitude was if the respondent agreed by answering "Yes" to the question. A total of 105 (27.8%) respondents felt the need for a clinical autopsy, especially in the medicolegal autopsy, 131 (34.7%) respondents felt it was very important to do it. In general, research subjects had a positive attitude towards autopsy (Table 4).

Table 5 assessed the respondents' perceptions by looking at the answers to the respondent's agreement on a statement. Perception was inadequate if the respondent agreed with the statement and vice versa. There was a relatively close difference in

perception, but it could be seen that the frequency of respondents choosing to disagree showed a better perceptions. In addition, most of the respondents had chosen to be neutral about the statement.

Table 6 has shown the knowledge, attitudes, and perceptions of Bandung City residents after being divided into good and poor by using the reference value of each variable. A total of 259 people had adequate knowledge (68.5%), 254 people (67.2%) had a positive attitude, and 249 people (65.9%) had a positive perception, with median values of 7, 6, and 12, respectively.

Table 5 Perceptions of Autopsy

Questions	Strongly Agree n(%)	Agree n(%)	Neutral n(%)	Disagree n(%)	Strongly Disagree n(%)
An autopsy is against the respondent's religion	11 (2.9)	22 (5.8)	246 (65.1)	84 (22.2)	15 (3.9)
The body of the corpse must not be tampered with for any reason	31 (8.2)	66 (17.4)	178 (47.0)	87 (23.0)	16 (4.2)
Autopsy examinations have no benefit to those who are still alive	44 (11.6)	54 (14.2)	129 (34.1)	108 (28.5)	43 (11.3)
The autopsy examination caused further difficulty and suffering for the bereaved family	17 (4.5)	54 (14.3)	185 (48.9)	107 (28.3)	15 (3.9)

Table 6 Perceptions of Autopsy

Variable	Good n(%)	Poor n(%)
Knowledge (Median=7)	259 (68.5)	119 (31.4)
Attitude (Median=6)	254 (67.2)	124 (32.8)
Perception (Median=12)	249 (65.8)	129 (34.1)

Discussion

The research subjects had an average age of 30.30 ± 13.48 , with the youngest being 20 years old and the oldest 68 years old. In this study, the results showed that the average value of knowledge increases with age. These results are in accordance with the theory which states that the older one gets, the level of maturity and strength of a person will be more mature in thinking and working. In the elderly group or above 60 years old, it can be seen that their average knowledge score is lower than the 50–59 year age group. The elderly will choose information that is only relevant to them because they begin to experience difficulty understanding new information, especially in large amounts. This also confirms that the elderly will also experience a decline in learning new things.¹⁵

When viewed from the type of work the research subjects have, there are differences in the value of knowledge of each working group. This is in accordance with a research, which stated that one's work can affect knowledge and experience.¹⁶ It was found that the police obtained the highest level of knowledge. This could be based on the duties of the police related to the autopsy implementation, especially medicolegal autopsy. In addition, the lowest value of knowledge was achieved by respondents who did not work. The reason might be that they do not have the benefits they received in the work environment. One of the advantages is that it can increase self-development, usually obtained from light activities such as sharing knowledge between colleagues.¹⁷ Knowledge of the subject seems to be sufficient by looking at the subjects who already know the definition and purpose of an autopsy. However, there are still many mistakes in answering the permission of family or relatives for medicolegal and clinical autopsies. It can be seen that the public does not fully understand the autopsy classification and prerequisite documents for autopsy.

Judging from the characteristics of the

respondent's age, it turns out that the attitude has a pattern as the age increases, the attitude value will decrease. This can be seen in the age group of 20–29 years who achieved an average attitude score of 6.00, and this value continued to decline until the age group of 50–59 years which had an average attitude score of 5.56. This is consistent with a meta-analysis review conducted, showing that the attitudes of older respondents are more negative than that of younger people.¹⁸ On the other hand, there is no significant relationship between age and perception because it does not have a meaningful pattern from the table section, which is also stated by one of the descriptive studies.¹⁹

Table 6 of this study shows that Bandung residents tend to already have good knowledge, attitudes, and perceptions. However, there are still 1 in 3 people who have poor knowledge of attitudes and perceptions about the autopsy, which is consistent with previous studies.^{12,14} This study showed that most people answered at least the importance of an autopsy in both clinical autopsy and medicolegal autopsy, and only ten people said that autopsy was not important. As many as 92% supported the practice of autopsy, and 78.8% agreed to perform an autopsy on their family or relatives. This is also in accordance with a similar study, conducted at the University College Hospital, Ibadan, Nigeria.⁶

Most of the public has known that a medicolegal autopsy is generally carried out in suspicious deaths seen in the first statement of knowledge. People are aware that a medicolegal autopsy is more important than a clinical autopsy. These are why medicolegal autopsy rates have remained stable. A study in Northern Ireland²⁰ found that the medicolegal autopsy rate has remained fairly stable despite the decline in clinical autopsy rates. Attitudes can be influenced by the experiences they have.

This study has limitations, one of which is the sampling system used is a snowball. As a result, variations in the characteristics

of respondents are not well distributed, so they do not represent the population. Results and interpretations can be different if more samples are taken and it is better to get a comparison of samples that are in accordance with the characteristics of the population. In addition, this study did not ask about the experiences of the respondents regarding the implementation of the autopsy. Therefore, the results could be different if the research was conducted again by asking about the experience and conclusions can be made about the experiences and attitudes obtained.

In conclusion, community's knowledge, attitudes, and perceptions tend to be good. However, some people have poor knowledge, attitudes, and perceptions about autopsies, which leads to a lower rate of clinical autopsies than medicolegal autopsies. The factors that influence the knowledge, attitudes, and perceptions of the Bandung residents' are age, education level, occupation, and religion.

It is recommended that further research on autopsy knowledge in the community in order to increase their perception or understanding of autopsies as well as research on conventional autopsies, such as virtual autopsies or imaging of corpses.

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