THE INFLUENCE OF AUDIO VISUAL HEALTH EDUCATION ON THE ABILITY OF UKS MEMBERS IN EMERGENCY HANDLING

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ABSTRACT
Medical emergencies are caused by various things such as cardiac arrest and traffic accidents. Assistance provided at the scene before medical personnel arrive is part of prehospital care. Providing appropriate prehospital care can reduce deaths due to trauma. The results of a preliminary study at Dwi Putri Husada Health Vocational School, Bogor, out of 15 students, there were 2 students who were able to know about emergency handling, 4 students were quite able to know about emergency handling, and 9 other students were less able to know about emergency handling. To determine the analysis of the effect of health education using Audio Visual (video) media on the ability of UKS members in handling emergencies at Dwi Putri Husada Health Vocational School, Bogor. Randomized control group pretest-posttest design and sampling technique in this study used simple random sampling with a lottery method. The population was 61 students and the sample amounted to 32 respondents for the experimental group and the control group, the data collection technique used a questionnaire. Using the Wilcoxon Signed Rank Test statistic to determine the effect of each variable with the p-value results for The intervention group was $0.002 \leq 0.05$ and the control group was $0.046 \leq 0.05$. The Mann Whitney statistical test in this study was to determine the effect of audio-visual health education on the ability of UKS members in handling emergencies with a p-value of 0.000 ($\alpha \leq 0.05$). There was an effect of audio-visual health education on the ability of UKS members in handling emergencies. The researcher's recommendation is for students to maintain and improve the ability of UKS members in handling emergencies.
Keywords :Audio Visual, Emergency, UKS Member Skills

INTRODUCTION

The World Health Organization (WHO) states that 1.35 million people die each year from road accidents. The WHO's Global Report on Road Safety, using data from 2016, shows a worsening situation. In the latest report, which used data from 2013, the number of deaths from road accidents worldwide reached 1.25 million.1

In just three years, road fatalities have increased by 100,000, making traffic accidents a leading killer. Every second, someone around the world loses their life on the road. To reduce the death toll, first aid simulations and training are needed for emergency victims.

According to 2017 Land Transportation Statistics data, the number of traffic accidents in Indonesia increased by 103,228 cases compared to 98,970 in 2015. The number of people who died in traffic accidents in 2017 was 30,568, compared to 26,495 in 2015.2

The number of road accidents by province in 2016-2017 (units) in West Java was 7,378. The number of fatalities increased by 3,895 compared to 3,704 in 2015.2

Data obtained from the Bogor Police in 2017 showed that there were 529 accidents, with 419 fatalities, 200 serious injuries, and 230 minor injuries. 3 The death toll in Bogor was higher than the number of serious and minor injuries. This could be due to a lack of knowledge among local residents about how to provide appropriate assistance at the scene.

Besides traffic accidents, heart disease is also known to be very deadly. The latest WHO data shows that heart attacks remain the number one killer in both developed and developing countries, accounting for 60% of all deaths.4 Accidents resulting in cardiac arrest are a public health problem for non-communicable diseases.

Each year, more than 36 million people die from non-communicable diseases (NCDs) (63% of all deaths). More than 9 million deaths from NCDs occur before the age of 60, and 90% of these premature deaths occur in low- and middle-income countries. Cardiovascular disease is a disease caused by impaired heart and blood vessel function, such as coronary heart disease, heart failure, and hypertension.5

During a traffic accident, victims experiencing shock, blunt force trauma, or sharp force trauma can experience irregular heart rhythms. Therefore, traffic accident victims with a history of heart disease are at greater risk of cardiac arrest. This can be characterized by loss of consciousness, no pulse, and cessation of breathing, which can result in the heart pumping and blood flow to the entire body being interrupted. This leads to oxygen deprivation and can lead to death.

*Sudden cardiac arrest*Cardiac arrest remains one of the leading causes of death worldwide. Seventy percent of cardiac arrests occur at home, while approximately half of out-of-hospital cardiac arrests go unwitnessed. Management of out-of-hospital cardiac arrests is still considered inadequate. Only about 10% of adult patients experiencing non-traumatic cardiac arrest survive after receiving pre-hospital medical care.6

Emergency situations can occur anywhere and at any time. When an emergency situation, such as an accident resulting in loss of life, occurs, many parties will be involved in the handling process. 8 The general public, local residents, local government officials, school children, police officers, and witnesses to the incident must be familiar with and aware of medical emergencies that frequently occur in their environment to facilitate the provision of initial treatment to victims.

Medical emergencies are caused by a variety of factors, such as cardiac arrest and traffic accidents. Prehospital care is provided at the scene before medical personnel arrive. Proper prehospital care can reduce trauma-related deaths.5 To address the causes of high mortality, improving first aid knowledge and skills is crucial to reduce morbidity and mortality.

*Pre-Hospital*This means that emergency conditions can be treated in a pre-hospital setting. This can be done by: securing the emergency victim, providing basic life support until the victim is safe, or splinting the emergency victim.9

Emergency situations can occur anywhere, at any time, and it is the responsibility of health workers to handle these situations. However, it is possible for emergency situations to occur in areas that are difficult for health workers to reach.9 Before the victim is found by health workers, community participation is crucial in helping the victim.

Starting in 2017, many states required schools to train students in cardiopulmonary resuscitation before graduating from high school. Most states in the United States require basic life support competency for high school students, as a requirement for high school graduation. In Germany, basic life support competency is a mandatory requirement for obtaining a driver's license.10

Ability refers to an individual's capacity to perform various tasks within a job. This is the current assessment of what a person can do. An individual's overall abilities are essentially composed of two factors: intellectual ability and physical ability.11

To improve students' skills in handling emergencies, schools will provide emergency education and training by holding a School Health Unit (UKS). School Health Efforts (UKS) are an effort to foster and improve healthy living habits and behaviors in students, carried out in a comprehensive and integrated manner through health education and service programs at school.12

One of the UKS programs is providing health education on emergency management in schools and their surrounding areas. Education is a process of acquiring knowledge, skills, attitudes, and social behavior. This process requires a series of stages designed to help achieve a goal. Learning is a crucial part of education, and students are expected to navigate the learning process, which is related to stress and motivation.13

Health education is a combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes.14

One way to provide health education to improve students' abilities in schools is through health promotion. Health promotion in schools, coupled with appropriate promotional methods for implementation and implementation, is a strategic step in improving the skills of school health unit members. This is based on the premise that schools are institutions established to foster and improve the quality of human resources, both physically, mentally, and spiritually.15

The right promotional method in providing health education is a strategic step in improving the skills of UKS members through media. Health promotion media is one means or effort that can be used to present health messages or information to students of Health Vocational Schools, thereby increasing knowledge that is ultimately expected to change their behavior and abilities in a positive direction or support health. According to Edgar Dale, media is an integration in the learning system. However, the effectiveness of media is not seen from how sophisticated the media is in its use. To avoid this

misperception, audio-visual media was created as a learning medium, which in its development utilizes concrete experiences as a learning model.16

The use of audio visual media (video) is in accordance with the learning concept according to the experience pyramid written by Edgar Dale, that people learn more than 50% from what they have seen and heard.16

Ervina Sandra Devi and Warsitipada (2013) showed that audiovisual media influences the extension of video to the conscious knowledge level. The level of knowledge before the guidance was in the insufficient category (53.3%) and increased to the sufficient category (46.7%) after counseling with audiovisual media videos.16

According to Munadi 2012, using video media has a better impact because it relies on hearing and sight, the material delivered is fast and easy to remember and can develop the minds and imagination of young women, and is demonstrated through demonstrations, so that respondents can directly absorb the information.17

RESEARCH METHODS

This type of research uses a Quasi Experimental design with Equivalent Control Group or often called Randomized Control Group Pretest Posttest Design, namely an Experimental design conducted with a pretest before treatment and a posttest after treatment. In this design, the grouping of sample members in the intervention group and the control group is done randomly. The research was conducted on August 14, 2025, at the Dwi Putri Husada Health Vocational School, Bogor.

The population in this study was all 61 students in grades 10 and 11 who were members of the UKS. The sampling technique used was random sampling, a lottery method, with 32 respondents, including 16 students in the intervention group and 16 students in the control group.

The study was conducted simultaneously to determine the abilities of students in the health unit (UKS) in the intervention group, who received audiovisual health education on emergency management, and in the control group, who received no treatment. The researcher was not alone in carrying out the study; instead, the researcher was assisted by a teacher in charge who supervised the control group.

The ability of UKS members in the intervention group who were given a questionnaire before and after being given health education using audio visuals to help emergency victims, and the results of the questionnaire filled out by the control group before and after not being given treatment.

The data obtained from this study was processed manually by grouping the results from the distributed questionnaires and then analyzing them using a statistical test processing program. After that, it was processed using a computerized system, with the stages being editing, coding, processing, cleaning, and tabulating.

Data analysis in this study used the Wilcoxon test with a significance level of 95% (α 0.05). In conducting the research, researchers paid attention to research ethics issues which include: Right to self-determination, Right to privacy and dignity, Right to anonymity and confidentiality, Right to treatment.

RESEARCH RESULT

Table 1. Characteristics of Research Subjects Based on Gender in the Intervention Group and Control Group

Gender	Intervention Group		Group Control	
	N	%	N	%
15 years	3	18.8%	2	12.6%
16 years	5	31.25%	5	31.2%
17 years	5	31.25%	5	31.2%
18 years	3	18.8%	4	25.0%
Total	16	100%	16	100%

Based on the results above, according to gender characteristics, the majority of respondents were women, namely 11 respondents with a percentage of 68.8% in the intervention group and 10 respondents with a percentage of 62.5% in the control group.

Table 2. Characteristics of Research Subjects Based on Age in the Intervention Group and Control Group

Gender	ntervention Group		Group Control	
	N	%	N	%
Man	5	31.2%	6	37.5%
Woman	11	68.8%	10	62.5%
Total	16	100%	16	100%

Based on the results above, the majority of respondents in the intervention group and the control group were aged 16-17 years, namely 10 people with a percentage of 31.25%.

Table 3. Analysis of the Results of the Normality Test for Respondents in the Intervention Group and the Control Group

No.	Treatment	*Shapiro Wilk Test*		
		Statistics	**Df**	**Sig.**
1	Intervention Pre-Test	.484	16	.000
2	Post-Test Intervention	.484	16	.000
3	Pre-Test Control	.546	16	.000
	Post-Test Control	.644	16	.000

Based on the table above, the significance value for the pretest and posttest in the intervention and control groups was 0.000 < 0.05. Therefore, based on the results of the data analysis using the SPSS program, it can be concluded that the research data is not normally distributed. The type of test that will be used is non-parametric statistics.

Table 4. Frequency Distribution of Research Subjects Based on the Ability of UKS Members in the Intervention Group

Ability	Before		After	
	N	%	N	%
Unable	12	75.0%	7	43.8%
Capable	4	25.0%	9	56.2%
Total	16	100%	16	100%

Based on the results of the table above, it shows the ability of UKS members in the control group before being given treatment to 16 respondents, seen from the completed questionnaire data, only 4 respondents with a percentage of 25.0% were able to handle emergencies. Meanwhile, the ability of UKS members after not being given audio-visual health education about emergencies was 9 respondents with a percentage of 56.2% able to handle emergencies.

Table 5. Frequency distribution of research subjects based on the abilities of UKS members in the control group

Ability	Before		After	
	N	%	N	%
Unable	13	81.2%	3	18.8%
Capable	3	18.8%	13	81.2%
Total	16	100%	16	100%

Based on the results of the table above, it shows the ability of UKS members in the control group before being given treatment to 16 respondents, seen from the completed questionnaire data, only 4 respondents with a percentage of 25.0% were able to handle emergencies. Meanwhile, the ability of UKS members after not being given audio-visual health education about emergencies was 9 respondents with a percentage of 56.2% able to handle emergencies.

Table 6. Level of Ability of UKS Members Before and After in the Intervention Group and Control Group Using the Wilcoxon Test

	: Intervention – Pre Intervention	Post Control – Pre-Control
Asymp. Sig. (2-tailed)	0.002	0.046

Based on the data above, it is known that the Asymp. Sig (2-tailed) value or significance value for the intervention group is $0.002 \leq 0.05$ and the control group is $0.046 \leq 0.05$, so Ho is rejected, so it can be concluded that there is an influence of audio-visual health education on the ability of UKS members in handling emergencies at Dwi Putri Husada Health Vocational School, Bogor City in 2025.

Table 7. The effect of audio-visual health education on the abilities of the Intervention Group and Control Group with Mann Whitney

No.	**Treatment**	**N**	**Mean±SD**	**Different**	***P***
1.	Intervention Group	16	21.91 ±504.00	16.21	0.000
2.	Control Group	16	5.70 ± 57.00		
Total		32			

Based on the table above, it can be seen that based on the mean value between the intervention group and the control group, the difference in value is 16.21 times. After being tested using the Mann-Whitney Test, the Asymp. Sig (2-tailed) value or P Value is 0.000 ≤ 0.05, so Ha is accepted and Ho is rejected. Thus, it can be said that there is an influence of health education.*audio visual*on the ability of UKS members in handling emergencies at Dwi Putri Husada Health Vocational School, Bogor City in 2025.

DISCUSSION

1. Distribution of UKS members' abilities regarding emergency handling before being given treatment in the intervention group and control group

   Based on the results of tables 5 and 6, it shows the ability of UKS members before being given health education with audio-visual methods about handling emergencies to 16 respondents in the intervention group, seen from the completed questionnaire data, only 3 respondents with a percentage of 18.8% were able to handle emergencies. The ability of UKS members in the control group before being given treatment to 16 respondents seen from the completed questionnaire data, only 4 respondents with a percentage of 25.0% were able to handle emergencies. According to the research conducted by Mira Utami Ningsih (2019), the results of the study showed that before being given the educational video method, the majority of respondents had insufficient skills in performing BHD, namely 11 people (55%). Only two respondents (10%) had good skills in performing BHD. The results of the Wilcoxon Signed Ranks Test statistical test showed a significant difference between the respondents' skills before and after being given the educational video (p = 0.001). This indicates that the educational video has an effect on improving respondents' skills in performing BHD.19

   One way to provide health education to improve students' abilities in schools is through health promotion. Health promotion in schools, coupled with appropriate promotional methods for implementation and implementation, is a strategic step in improving the skills of school health unit members. This is based on the premise that schools are institutions established to foster and improve the quality of human resources, both physically, mentally, and spiritually.15

   Using video media has a better impact because it relies on hearing and sight, the material delivered is fast and easy to remember and can develop the minds and imagination of young women, and is demonstrated through demonstrations, so that respondents can directly absorb the information.17

   In this study, only a small proportion of respondents who were members of the health unit (UKS) before receiving health education using audiovisual media, based on the completed questionnaire, were able to handle emergencies. Therefore, health education on emergency management is essential to improve skills, one of which is through audiovisual media.

2. Distribution of UKS members' abilities regarding emergency handling after being given treatment in the intervention group and control group.

Based on the results of tables 5 and 6, it shows the ability of UKS members after being given audio-visual health education about emergencies in the intervention group, as many as 13 respondents with a percentage of 81.2% were able to handle emergencies. Meanwhile, the ability of UKS members after not being given audio-visual health education about emergencies in the control group, as many as 9 respondents with a percentage of 56.2% were able to handle emergencies.

In accordance with the results of research conducted by Eka Dwi Yanti (2015), the results of the study showed that the results of statistical tests obtained an average of adolescent knowledge and attitudes after being given health education using audiovisual media regarding efforts to prevent sexually transmitted diseases, there was an increase in knowledge and attitudes in adolescents, where the results of the pre-test knowledge were 7.77 and the pre-test attitude 40.88 with SD knowledge 2.90 and attitude 3.16 increased during the post-test knowledge to 10.56 and post-test attitude 46.02 with SD knowledge 2.78 and attitude 4.14. The mean difference in knowledge was 2.79 and attitude 5.14. Based on the statistical test obtained p value knowledge 0.000 $p < \alpha$ (0.05) and attitude 0.000 $p < \alpha$ (0.05), these results mean that there is a significant difference between the average knowledge and attitudes before and after being given intervention in the experimental group.20

The use of audio visual media (video) is in accordance with the learning concept according to the experience pyramid written by Edgar Dale, that people learn more than 50% from what they have seen and heard.16

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Learning about emergency management will be effective if it uses audio-visual learning methods. This method presents emergency management material from beginning to end through clear visualizations and images, ensuring students' memory recall is well-received.21

In this study, the provision of health education significantly impacted students' ability to improve their understanding of a lesson. With this learning, curiosity grew and the motivation to obtain new information was very strong. Learning methods using audio-visuals were highly recommended to improve the skills of UKS members of the Dwi Putri Husada Health Vocational School in Bogor City. This can be seen from the increase in the number of students who were able to handle emergencies after being given audio-visual health education on emergency handling.

3. Analysis of the influence of audio-visual health education on the ability of UKS members in handling emergencies at Dwi Putri Husada Health Vocational School, Bogor City in 2025.

   From table 8, it can be seen that based on the mean value between the intervention group and the control group, the difference in value is 16.21 times, after being tested using the Mann-Whitney Test, the Asymp. Sig (2-tailed) value or P Value is 0.000 ≤ 0.05, so Ha is accepted and Ho is rejected, thus it can be said that there is an influence of audio-visual health education on the ability of UKS members in handling emergencies at Dwi Putri Husada Health Vocational School, Bogor City in 2025.

   In accordance with the results of research conducted by Novelia Wulan Dari (2013), the results of the study showed that from the results of the Mann Whitney statistical test, the mean rank of knowledge of implementing leg exercises in type 2 DM patients in the experimental group after being given health education through audio-visual media was higher than the control group after being given intervention, namely 19.73. Based on the results of the Mann Whitney test, a p value of 0.006 was obtained, meaning there was an influence so it was concluded that health education through audio-visual media was effective on knowledge of implementing leg exercises in type 2 DM patients.22

   Providing health education on emergency management using audio-visual methods is highly effective in improving the skills of UKS students in handling emergencies. Factors that can improve a person's skills or ability to perform an action can be enhanced and made successful if the person has seen and heard the lesson.

CONCLUSION

1. It is known that the ability of UKS members regarding emergency handling before being given treatment in the intervention group and the control group is seen from the questionnaire data that has been completed, only 3 respondents with a percentage of 18.8% are able to handle emergencies.
2. It is known that the ability of UKS members regarding emergency handling after being given treatment in the intervention group and the control group, in the intervention group as many as 13 respondents with a percentage of 81.2% were able to handle emergencies. Meanwhile, the ability of UKS members after not being given audio-visual health education about emergencies in the control group as many as 9 respondents with a percentage of 56.2% were able to handle emergencies.
3. There is an influence of audio-visual health education on the ability of UKS members in handling emergencies at Dwi Putri Husada Health Vocational School, Bogor City in 2025 with a P Value of 0.000 ≤ 0.05.

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