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Effectiveness of Video Method Training with Demonstration on the Competency of Basic Life Support Training Participants in the Gucialit Work Area

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ABSTRACT

Background: Basic Life Support (BLS) competency is critical for improving survival rates in cardiac arrest emergencies. However, the optimal instructional method for training public service employees remains a subject of debate. **Objective:** This study aimed to evaluate and compare the effectiveness of video-based training versus demonstration methods on BLS competency among public service employees. **Methods:** A quasi-experimental study with a pre-post test design was conducted in the Gucialit Community Health Center work area in July 2025. A total of 52 participants were selected using a total sampling technique and divided into two groups: video method (n=26) and demonstration method (n=26). Competency was assessed using a structured questionnaire before and after the intervention. Data were analyzed using the Wilcoxon signed-rank test with a significance level of α=0.05. **Results:** Both training methods significantly improved BLS competency. In the video group, competent participants increased from 10 (38.5%) to 24 (92.3%) (p=0.000). In the demonstration group, competency rose from 14 (53.8%) to 23 (88.5%) (p=0.003). Descriptively, the video method yielded a slightly higher post-training competence rate compared to the demonstration method. **Conclusion:** Both video and demonstration methods are effective in enhancing BLS competency among public service employees. The video method demonstrated a marginally higher effectiveness, suggesting it as a viable, scalable alternative for community-based training programs.

Keywords: Training, Basic Life Support, Video Method, Demonstration Method

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1. INTRODUCTION

Cardiac arrest is a medical emergency. It occurs due to a loss of blood and oxygen to the heart muscle, either from a blood clot blocking the coronary arteries or from the heart's inability to pump blood.

The patient will experience loss of consciousness, cessation of breathing, and the absence of a pulse. Death occurs due to a lack of immediate treatment. Early identification, such as cardiopulmonary resuscitation (CPR), and immediate provision of pre-hospital basic life support are crucial for the patient's survival (Vos et al., 2023).

Respiratory and cardiac arrest are emergencies that require prompt and appropriate treatment from trained medical personnel or the general public. Cardiac arrest can be reversed if treated promptly with CPR and defibrillation to restore a normal heart rate (Brixius et al., 2022). The principle of cardiac arrest management is the ability to detect and act quickly and correctly to restore the heart rate to a normal level as soon as possible to prevent brain death and permanent death. Rapid treatment can be achieved if there are personnel capable of carrying out the chain of survival when cardiac arrest occurs (Lazzarin et al., 2023). This issue then led to the formation of rapid-response teams for immediate cardiac arrest management, known as code blue. The time to begin resuscitation is crucial to improve the chances of an ideal recovery (Douma et al., 2022). Cardiopulmonary resuscitation is a crucial determinant of survival for cardiac arrest victims. This demands an increase in the number of CPR bystanders in the local community and hospitals.

Life-threatening incidents outside the hospital underline the importance of basic life support for medical personnel and lay rescuers alike. Lay rescuers are the main thing to improve the ability to help victims of life-threatening situations and understand the management of unconscious victims outside the hospital, who can cause cardiac arrest (Li et al., 2024). Lay rescuers are those who do not have basic first-aid training; they only practice what they have seen. Lay rescuers include residents, mosque youth, and especially youth organizations, as they are closest to the community and have a duty to contribute to various efforts to manage and address social problems. For victims of cardiac arrest, social disasters, and different dynamics, both local and national, pre-hospital handling skills in handling cardiac arrest victims are very important (Baig et al., 2024). It is necessary to provide education and training to improve pre-hospital victim management skills.

According to data obtained from the World Health Organization the number of deaths caused by cardiovascular disease is 17.7 million people each year (WHO, 2023). The number of deaths due to cardiovascular disease is predicted to

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continue to increase from year to year and is estimated to reach 23.3 million deaths by 2030. According to the results of the American Heart Association (AHA), there are 2,000,000 deaths due to cardiac arrest worldwide. In Japan, Singapore, Malaysia, and other Asian countries, the number of deaths due to cardiac arrest is the highest cause of death (Hsu et al., 2022).

The incidence of cardiac arrest in Indonesia is around 10 out of 100,000 normal people aged under 35 years, and reaches around 300,000-350,000 incidents (Rachmawati et al., 2024). In East Java itself, there is no precise data regarding the prevalence of cardiac arrest incidents outside hospitals. There is only data on the prevalence of early symptoms and an estimated number of heart disease sufferers of 375,127 people or 1.3% (Rakhmawati et al., 2024).

Cardiac arrest occurs when blood and oxygen are lost to the heart muscle due to blockage of the coronary arteries by blood clots or to the heart's inability to pump blood. The patient will experience loss of consciousness, cessation of breathing, and the absence of a pulse. Death can occur if not immediately treated (Albus & Haass, 2022). The importance of early identification of patients with cardiac arrest is the chain of survival treatment before going to the hospital (pre-hospital). Early identification of patients, namely by asking for help and immediately providing basic and advanced life support in the hospital (Oliveira et al., 2025).

A preliminary study revealed that 9 out of 10 respondents did not understand basic life support (BLS). This demonstrates the importance of providing education or training in BLS as a basis for treating patients experiencing cardiac arrest, respiratory arrest, and choking. The lack of knowledge regarding basic life support in the general public will be a decisive factor for researchers to conduct research, considering that the motivation to help, especially victims of cardiac arrest, is expected to produce benefits for other parties where the knowledge of Basic Life Support (BLS) accompanied by high motivation in helping can help prevent death and reduce the occurrence of disability (Deegan et al., 2024).

Basic Life Support (BLS) is a series of actions that must be taken immediately to prevent the cessation of blood flow and breathing, thereby halting the process leading to death. Basic Life Support (BLS) is the initial treatment for patients experiencing cardiac arrest, respiratory arrest, or airway obstruction. BLS includes several skills that can be taught to anyone, namely recognizing sudden cardiac arrest, activating the emergency response system,

performing (CPR), and using an Automated External Defibrillator (AED). Ideally, everyone in the world would understand basic first-aid techniques and undergo regular training to maintain BLS knowledge (Tamur et al., 2023).

First Aid or Basic Life Support (BLS) training is a crucial program that provides fundamental knowledge and skills for handling medical emergencies, such as heart attacks, drownings, or accidents. These skills are crucial not only for medical personnel but also for the general public, who can act as first responders before medical professionals arrive. BHD training equips individuals to respond quickly and effectively to medical emergencies, particularly cardiac arrest (Sukor et al., 2025). A quick and appropriate response in providing BHD can increase the chances of survival for victims of medical emergencies. Every second counts, and trained members of the public can provide first aid before professional medical assistance arrives (Genswein et al., 2022). Basic live support training plays a key role in reducing deaths from cardiac arrest in public places. Trained bystanders can provide early CPR, which has been shown to improve survival rates (Yasin et al., 2023).

Basic Life Support training is crucial for preparing individuals to respond to medical emergencies. Through this training, participants gain not only knowledge of first aid but also practical skills that can be applied immediately to save lives in a variety of emergencies. Effective learning in BHD training depends heavily on the teaching methods used. Various approaches can be applied to delivering material, with two frequently used methods being video and demonstration. Each method has its own characteristics, strengths, and challenges in enhancing participant learning outcomes.

The diversity of participants' learning styles (visual, kinesthetic, and auditory) is an important factor to consider. Video learning is highly beneficial for participants who prefer visualization, while demonstration learning is more beneficial for those who learn through hands-on experience. Therefore, research comparing these two methods is highly relevant to ensure that BHD training provides optimal results for all types of participants, both in terms of understanding the material and the practical skills acquired upon completion.

Although both methods are widely used in BHD training, there is still a need to understand how significantly each method impacts participant learning outcomes, particularly in terms of understanding and mastery of practical skills. While video

methods can deliver material in a clear, structured manner, they may not provide the practical experience participants need in a real-life emergency. Conversely, demonstration methods provide hands-on experience but may be less effective if participants have difficulty remembering or understanding techniques based solely on observation.

2. METHODS

This study employed a quasi-experimental design with a pre-post test approach to evaluate and compare the effectiveness of video-based training versus demonstration methods on Basic Life Support (BLS) competency. The research was conducted in the Gucialit Community Health Center work area from June to July 2025. The population consisted of 52 public service employees within the region, all of whom were included in the study using a total sampling technique. Participants were divided into two distinct groups: the video method group (n=26) and the demonstration method group (n=26). Inclusion criteria comprised employees who were willing to participate, had no prior certified BLS training, and were present during the data collection period. Exclusion criteria included those who were unable to complete the full training sessions or were absent during the post-test evaluation.

The independent variable was the training method (video versus demonstration), while the dependent variable was BLS competency. The video intervention involved structured audiovisual materials covering standard BLS protocols, allowing participants to review the content repeatedly. In contrast, the demonstration group received direct instruction and hands-on practice facilitated by a trained instructor, enabling immediate feedback. Competency was assessed using a standardized checklist questionnaire based on American Heart Association (AHA) guidelines, administered before and after the intervention. The instrument was validated for content validity and tested for reliability prior to data collection. Data were processed through coding, editing, and tabulation, then analyzed using statistical software. The Wilcoxon signed-rank test was used to compare pre- and post-test scores within each group to determine significant changes in competency, with a significance level set at α=0.05. Ethical approval was obtained from the Hafshawaty Zainul Hasan University ethics committee, and informed consent was secured from all participants.

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3. RESULTS

This study was conducted in the Gucialit Community Health Center working area. The results are presented based on univariate and bivariate analyses. Univariate analysis describes the characteristics of respondents and the distribution of research variables, while bivariate analysis shows a comparison of basic life support training competencies. The results of the univariate analysis are presented in Table 1.

Table 1. Respondent Characteristics

Characteristics	Respondent Training with Video Method		Respondents Training with Demonstration Method	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Age				
20 - 30	9	34.6	10	38.5
31 - 40	8	30.8	3	11.5
41- 50	7	26.9	11	42.3
> 50	2	7.7	2	7.7
Work				
Civil Servants	17	65,4	18	69,2
Contract Employees	9	34,6	8	30,8
Education				
Elementary School	0	0	0	0
Middle School	0	0	0	0
High School	9	34,6	7	26,9
Academic/University	17	65,4	36	73,1
Gender				
Male	11	42,3	12	46,2
Female	15	57,1	14	53,8

Source: Primary Data from the 2025 Research Questionnaire

Table 1 shows that the largest number of respondents in the video method training had 9 respondents with an age range of 20-30 years with a percentage of 34.6%. Meanwhile, in the demonstration method training, 11 respondents with a percentage of 42.3% had an age range of 41-50 years. The occupation of the respondents above can be seen that more than half of the number of respondents in the video method training have jobs as civil servants with a total of 17 respondents with a percentage of 80.7%. Meanwhile, in the demonstration method training, more than half of the respondents have jobs as civil servants with a total of 18 respondents with a percentage of 69.8%. In terms of education, most of the respondents in the video method training have an academic/bachelor's degree, namely 17 respondents with a percentage of 65.4%. Meanwhile, in the demonstration method training, more than half of the respondents have an academic/bachelor's degree, namely 19 respondents with a percentage of 73.1%. Half of the respondents in the video

method training are female, namely 15 respondents with a percentage of 57.1%. Meanwhile, in the demonstration method training, more than half of the respondents are female, namely 14 respondents with a percentage of 53.8%. Furthermore, the results of the univariate analysis of participant competencies before and after training are presented in Table 2.

Table 2. Competence of participants before and after being given basic life support training

Scoring Value	Respondent Training with Video Method		Respondents Training with Demonstration Method	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Before training				
Competent	10	38.5	14	53.8
Not Competent	16	61.5	12	46.2
Total	26	100.0	26	100.0
After training				
Competent	24	92.3	23	88.5
Not Competent	7	7.7	3	11.5
Total	26	100.0	26	100.0

Based on the data in Table 2, it can be seen that before being given video training, most respondents were incompetent regarding basic life support with a total of 16 respondents with a percentage of 61.5%. Meanwhile, of the respondents before the demonstration training, more than half of the respondents were competent regarding basic life support, namely 14 respondents with a percentage of 53.8%. After being given video training, it was found that most respondents were competent, namely 24 respondents with a percentage of 92.3%. Meanwhile, after being given basic life support training with the demonstration method, 23 respondents with a percentage of 88.5% were competent regarding basic life support. Furthermore, a bivariate analysis was conducted to determine the comparison of the competencies of the video and demonstration training methods, as presented in Table 3.

Table 3. Cross-tabulation after video and demonstration training on basic life support training competency achievement for public service employees in the Gucialit work area

Before Being Given Basic Life Support Training Using the Video Method	After Being Given Basic Life Support Training Demonstration Method		Total
	Competent	Incompetent	
Competent	21	3	24
Incompetent	2	0	2
Total	23	3	26
Wilcoxon Test for Demonstration Method = 0.003 Wilcoxon Test for Video Method = 0.000			

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Based on the table above, it can be seen that after being given basic life support training using the video method, 24 respondents were competent in basic life support. The results of the Wilcoxon statistical test obtained a probability value or p-value of 0.000, lower than the significant standard p-value of 0.05 or ($p < \alpha$). Meanwhile, after conducting basic life support training using the demonstration method, it was found that 23 respondents were competent in providing basic life support. The Wilcoxon statistical test results obtained a probability value or p-value of 0.003, lower than the significant standard p-value of 0.05 or ($p < \alpha$).

4. DISCUSSION

Basic life support training using video method on the competency of basic life support training participants

Based on Table 2 regarding the competency of respondents before being given training, it is known that as many as 16 respondents with a percentage of 38.5% were not competent in the application of basic life support and 10 respondents with a percentage of 38.5% were competent. Meanwhile, in table 5.6 regarding the competency of respondents after being given training, it is known that as many as 24 respondents with a percentage of 92.3% were competent in the application of basic life support and 2 respondents with a percentage of 7.7% were not competent.

The results of this study are in accordance with a study conducted by Yeh (2022), which stated that audiovisual learning is very helpful in facilitating nursing students in acquiring new knowledge because audiovisual learning is very likely to attract students' interest and attention so that they focus on learning new knowledge or science. In addition, the audiovisual method is very appropriate when applied to training activities because participants are very likely to learn independently through the audiovisual media they have obtained. Thus, the abilities and information that have been obtained by respondents can be added or maximized (Nuraini & Mas'odi, 2024). Audiovisuals are very helpful in stimulating participants to develop comprehensive thinking related to the material being studied. Thus, it can be concluded that audiovisual is a modern instructional method that is in accordance with the development of science and technology and as an intermediary or use of material and its absorption through sight and hearing, thereby creating conditions that can enable participants to acquire knowledge, skills, or attitudes.

According to the author's assumption, the use of videos in basic life

support training is very effective in increasing respondents' competency in implementing it in practice. This can be caused by the video method being able to be accessed repeatedly, making it easier for respondents to understand and discuss it well with each other so that it can be implemented well in practice.

Basic Life Support Training Using Demonstration Methods for Basic Life Support Training Participants' Competencies

Based on Table 2 regarding the competency of respondents before being given training with the demonstration method, it is known that as many as 12 respondents with a percentage of 46.2% were not competent in the application of basic life support and 14 respondents with a percentage of 53.8% were competent. Meanwhile, in table 5.8 regarding the competency of respondents after being given training with the demonstration method, it is known that as many as 23 respondents with a percentage of 88.5% were competent in the application of basic life support and 3 respondents with a percentage of 11.5% were not competent.

Another study conducted by Adhikari (2024) stated that demonstrations are very effective in improving the psychomotor skills of each participant. This is because the focus of this method trains participants to be able to practice or carry out actions according to the SOP and facilitator's instructions correctly. From this kind of learning experience, the advantage is that respondents are able to capture the truthful information from the source directly. Independent practice from each participant/respondent also makes them confident and the results of the study show that there is a significant increase in abilities before and after being given a demonstration intervention. Thus, it can be concluded that demonstration is a way of presenting lessons by demonstrating or showing a process, situation or a particular object being studied either in its actual form or in an imitation form shown by a facilitator or other learning resource who is an expert in the topic of discussion so that it can improve better psychomotor skills in participants (Schultner et al., 2025).

According to the author's assumption, the use of the demonstration method in basic life support training is very effective for respondents' competency in its application practice, this is because with this method respondents have the opportunity to directly see the application of basic life support so that respondents can easily understand the explanations given. In this method, respondents can also

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solve problems with direct feedback so that they can minimize errors in the application of basic life support practices.

Comparison of basic life support training using video and demonstration methods on the competency of basic life support training participants

Based on the cross-tabulation table data of basic life support training using the video method on the competency of basic life support training participants, the results of the Wilcoxon statistical test were obtained, namely a p value of 0.000, which is lower than the significant standard p value of 0.05 or (p ‹α), H1 was accepted, which means there is an influence of basic life support training using the video method on the competency of basic life support training participants. Meanwhile, based on the cross-tabulation table data of basic life support training with the demonstration method on the competency of basic life support training participants, the results of the Wilcoxon statistical test were obtained, namely a p value of 0.003, which is lower than the significant standard p value of 0.05 or (p ‹α), H1 was accepted, which means there is an influence of basic life support training with the demonstration method on the competency of basic life support training participants.

Audiovisual and demonstration are active learning methods that greatly help improve student creativity. Audiovisual learning has the advantage of learning through video media, namely providing a non-boring impression and is easy to repeat and does not cause excessive physical fatigue. Meanwhile, demonstrations have the advantage that students can ask questions or clarify directly to the facilitator, in addition to participants also have the opportunity to try individually and independently on the topic being taught so that the achievement of results can be maximized compared to audiovisual methods. Basically, audiovisual learning and demonstrations have the same effectiveness in improving abilities, however, demonstrations are slightly more dominant in terms of psychomotor and high self-confidence of respondents. Another study conducted by Clerkin et al. (2022), found that there was no significant difference between audiovisual and demonstration in terms of the final results of the training conducted, however, both methods were very effective in increasing the pre- and post-test scores of respondents. Therefore, it is recommended to provide both methods simultaneously or a combination of audiovisual and demonstration to improve participants' abilities to the maximum.

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According to the author's assumption, the use of video and demonstration methods in basic life support training is very effective, thus improving respondents' competence in the practice of applying basic life support itself. Of course, this is also inseparable from the advantages and disadvantages of each method, such as the lack of good two-way communication in the video method and the need for equipment availability in the demonstration method. However, it is also important to realize that the video method's ease of access allows respondents to access the video repeatedly, thus providing ample opportunity to understand the material. Meanwhile, the video method's direct feedback makes it easier for respondents to understand more easily if there are things that may be difficult.

5. CONCLUSION

The results of the study before the basic life support training, namely before being given video method training, most respondents were incompetent regarding basic life support with a total of 16 respondents with a percentage of 61.5%. Meanwhile, in the demonstration method training respondents more than half of the respondents were competent regarding basic life support, namely 14 respondents with a percentage of 53.8%. The results of the study after the basic life support training, namely after being given video method training, it was found that most respondents were competent, namely 24 respondents with a percentage of 92.3%. Meanwhile, after being given basic life support training with the demonstration method, 23 respondents with a percentage of 88.5% were competent regarding basic life support. The results of the comparison of basic life support training with video and demonstration methods on the competence of basic life support training participants had statistical test results with a p-value of 0.000 in the video method and a p-value of 0.003 in the demonstration method. It is hoped that nurses or other health workers will be more active in providing basic life support training to public employees or other respondents so that basic life support skills can be possessed by many people and can apply them well. Future researchers are also expected to expand their research, such as conducting a study with the same title but with a different number of respondents and methodologies. This will increase insight into basic life support training using other methods.

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AUTHOR CONTRIBUTIONS

The author contributes in conceptualization, data collection and analysis Usmiati Ningsih, Zainal Abidin, Widya Addiarto. Writing and manuscript revisions: Usmiati Ningsih.

CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the publication of this article.

DATA AVAILABILITY STATEMENT

The data are not publicly available due to privacy or ethical restrictions.

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