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The Effect of Basic Life Support Short Film on Knowledge of Cardiac Arrest First Aid: Original Article

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ABSTRACT

Introduction: Cardiac arrest is a life-threatening emergency that frequently occurs outside hospital settings. Mortality rates increase due to lack of knowledge in administering first aid for cardiac arrest. One approach to enhancing public knowledge of basic life support is through education. To determine the impact of basic life support education using a short film on knowledge levels regarding first aid for cardiac arrest.

Methods: This study employed a pre-experimental one-group pre-test post-test design. The research was conducted on March 15, 2025, involving 31 members of Nasyiatul Aisyiyah in Padenganploso Village, Pucuk, Lamongan, selected through total sampling. Knowledge levels were assessed using a questionnaire on basic life support and analysed using the Wilcoxon test ($\alpha \leq 0.05$).

Results: All respondents were female, with 58.1% aged 31–40 years. Before the intervention, 65.5% of respondents had low knowledge levels; this improved to 87.1% of respondents having good knowledge levels after the intervention. Statistical analysis confirmed a significant effect of short film-based education on knowledge of basic life support ($p=0.000$).

Conclusion: Short films can be used as a means to increase knowledge of basic life support, as they engage both visual and auditory senses, facilitating better understanding and memory retention. Future studies should consider including a control group and a larger sample size to strengthen the findings.

Keywords: Basic life support, Knowledge, Short film

INTRODUCTION

Emergency situations can occur suddenly and are often unpredictable. They can happen anywhere, including rural areas. In

many cases, common people are the first to encounter emergencies, such as out-of-hospital cardiac arrest (Qodir, 2020). Knowledge of Basic Life Support (BLS), particularly in cases of cardiac arrest, is

crucial and should be understood by all members of the general public. However, awareness of BLS remains limited globally, and many people have never witnessed its direct application (Pehlivan et al., 2019). The lack of public knowledge regarding cardiac arrest management affects the provision of first aid to victims (Khoirini & Esmianti, 2020).

In Indonesia, awareness of BLS remains low. Many individuals hesitate to perform BLS due to various factors, including fear of harming the patient, inadequate practical skills, and insufficient knowledge of proper chest compression techniques (Wang et al., 2022). In several countries, the incidence of out-of-hospital cardiac arrest has been increasing, including in the United States. In 2015, approximately 350,000 cases were recorded, rising to 356,461 cases in 2018 (Chan et al., 2020). However, fewer than 40% of victims received BLS (AHA, 2020). The high incidence of out-of-hospital cardiac arrest is largely attributed to the public's lack of knowledge regarding the administration of BLS.

Studies conducted in various countries indicate that public knowledge of first aid remains critically low. According to a global meta-analysis published in 2019, it is estimated that only 20-30% of the world's population possesses basic knowledge of BLS. This awareness tends to be higher in countries with more advanced medical education systems and well-structured public health training programs (Ahn, 2019). A study published in the Indonesian Journal of Emergency Medicine in 2018 examined public knowledge of BLS and first aid in several major cities across Indonesia. The findings revealed that only 15-20% of respondents

possessed adequate basic knowledge of first aid procedures and BLS (Supriatna, 2018). The study findings revealed that public knowledge of BLS remains low, with only 22% of the population aware of the correct procedures for performing BLS (Kusumawati, 2019).

Based on a preliminary study conducted by Ranting Nasyiatul Aisyiyah in Padenganploso Village, Pucuk, Lamongan on June 10, 2024, a WhatsApp poll was used to assess public awareness of BLS first aid. The results showed that only 5 respondents reported being familiar with BLS, while 22 others stated they did not know of it.

The high incidence of out-of-hospital cardiac arrest is largely due to the absence of immediate BLS intervention for victims. Several factors contribute to bystanders' reluctance to administer first aid, including fear of harming the patient, lack of knowledge and practical skills, and the distressing appearance of the victim, which may cause hesitation (Dobbie et al., 2020). Failure to administer first aid to a cardiac arrest victim results in a 7-10% decrease in survival chances for every minute that passes without intervention (Chen et al., 2017).

Knowledge plays a vital role in the administration of BLS for out-of-hospital cardiac arrest, as it directly influences the effectiveness and timeliness of life-saving interventions (Hidayati, 2020). Several factors influence an individual's level of knowledge in administering first aid for out-of-hospital cardiac arrest. These include age, gender, education and training, occupation, personal experience in providing first aid, sources of information or understanding of cardiac arrest, and interest in performing first aid.

Collectively, these factors interact and contribute to a person's readiness and ability to administer timely and effective emergency care (Paterson, B., & Williams, 2018).

There are various efforts to enhance public knowledge, one of which is health education (Pakpahan et al., 2021). Health education techniques and methods integrate multiple approaches, utilizing tools and various educational media (Nurmala et al., 2018). These methods include counseling, training or workshops, simulations, demonstrations, role-playing, role modeling, campaigns, lectures, seminars, and audiovisual education (Pakpahan et al., 2021).

Several methods can be employed to enhance knowledge of Basic Life Support (BLS), primarily through education and training. Various studies have identified educational media used in research on BLS, including booklets, role-playing, e-booklets, audio materials, and flipcharts. These studies indicate that these media have a significant impact on improving BLS knowledge (Putri & Nanda, 2024; Gustinadewa & Suparti, 2023). However, the majority of studies still focus on conventional and text-based digital learning media. There have been limited studies that utilise narrative visual media, especially short films, as a basic life support educational medium capable of realistically depicting cardiac arrest. Narrative audiovisual media have strong potential to improve memory, attention, and procedural understanding compared to static or textual media. This indicates the need for innovation in the form of more immersive and contextual basic life support education.

Short films serve as an audio-visual communication tool frequently used to convey both factual and fictional content, reflecting real-life situations that commonly occur in society. Additionally, they can illustrate phenomena in specific locations that may be unknown or unnoticed by others, making them a potentially effective medium for increasing awareness and understanding of BLS practices (Munawaroh, 2021). A short film is an electronic learning medium (audiovisual) with a brief duration, typically under 60 minutes and presented in the form of a concise narrative. Short films offer several advantages as an educational tool, including enhanced effectiveness by engaging both auditory and visual senses, a more immersive experience compared to purely audio or visual media, faster information retention, and an overall more engaging and enjoyable learning experience (N. Listiana, 2019). In line with this, Fatmawati et al., (2019) state that 90% of an individual's skill improvement is achieved through direct observation, hands-on practice, and demonstration of the knowledge being taught.

Based on the literature reviewed, no studies have been found that examine the impact of short film-based education on knowledge levels regarding first aid for cardiac arrest. Therefore, the researcher is interested in conducting a study on the influence of BLS education through short films on first aid knowledge for cardiac arrest.

The study aims to analyze the effectiveness of short film-based education in improving knowledge among members of *Nasyiatul Aisyiyah* in Padenganploso Village, Pucuk, Lamongan.

METHOD

This study employed a pre-experimental one-group pretest-posttest design and was conducted at Ranting Nasyiatul Aisyiyah, Padenganploso Village, Pucuk District, Lamongan Regency on March 15, 2025. The study population consisted of 54 members of Nasyiatul Aisyiyah, with 31 participants meeting the inclusion and exclusion criteria, selected through purposive sampling. The inclusion criteria for this study required participants to be female members who are actively involved in Nasyiatul Aisyiyah, physically and mentally healthy, and willing to participate as respondents. Conversely, exclusion criteria applied to members who were absent during the study, those who were ill at the time of data collection, and individuals who were illiterate (unable to read or write). Additionally, participants who did not complete the education program from start to finish were categorised as dropouts.

The research instrument used in this study was a short film on adult Basic Life Support (BLS), developed by the researcher based on the AHA (2020) with a concept and narrative adapted to the knowledge level of the general public. The film, lasting 8 minutes, covers various aspects of BLS, including its definition, purpose, indications, the chain of survival, and the BLS algorithm. Respondents' knowledge was measured using a closed-ended questionnaire on adult BLS, consisting of 20 multiple-choice questions. The questionnaire was adapted from Purba (2018) which originally included 15 questions; the researcher modified it by adding 5 application-based questions, bringing the total to 20 items. The validity

test results indicated a r-table value of 0.4869 and a Cronbach's alpha of 0.917, demonstrating that the instrument is both valid and reliable.

Prior to data collection, this study received ethical approval from the Ethics Committee of Universitas Muhammadiyah Lamongan under approval number 083/EC/KEPK-S1/02/2025 on February 26, 2025. Data collection was conducted over a single day, aligning with the regular meeting schedule of Nasyiatul Aisyiyah members in Padenganploso Village, Pucuk, Lamongan.

The procedure began with explaining the study and obtaining signed informed consent. Participants then completed a pre-test questionnaire, watched an 8-minute short film twice with a 10-minute discussion break, and finally filled out a post-test questionnaire to assess the intervention's impact.

The collected data underwent a distribution test using the Shapiro-Wilk test, which indicated that the pre-test knowledge data was normally distributed, whereas the post-test knowledge data was not normally distributed. Subsequently, the data analysis was conducted using the Wilcoxon test with SPSS 27.0.

RESULTS

The total target number of respondents was 54, but 23 individuals were absent, resulting in a final sample of 31 participants who completed the study from start to finish.

Based on Table 1, 58.1% of respondents were between 31-40 years old, 64.5% had a high school education, and 80.6% were unemployed (primarily as homemakers). Furthermore, 64.5% had never received any knowledge about BLS,

while 54.8% obtained information about BLS from the internet.

Table 1. Characteristics Respondents' Demographic Data (n=31)

Age	N	%
15-20	0	0
21-30	13	41.9
31-40	18	58.1
Total	31	100
Educational Background	N	%
Elementary School	0	0
Junior High School	4	12.9
Senior High School	20	64.5
Diploma 3	0	0
Diploma 4	0	0
Bachelor	7	22.6
Total	31	100
Occupation	N	%
Unemployment	25	80.6
Self-employment	3	9.7
Teacher	3	9.7
Total	31	100
Sources of Information	N	%
Healthcare practitioners	4	12.9
Health students	5	16.1
Internet	17	54.8
Newspaper/ Magazine	0	0
Others	5	16.1
Total	31	100
Experience in helping victims	N	%
Yes	2	6.5
No	29	93.5
Total	31	100
Interest in Performing Rescue	N	%
Yes	28	90.3
No	3	9.7
Total	31	100

In terms of experience, 93.5% had never performed BLS before, although 90.3% expressed interest in providing assistance if they encountered a victim in need. These findings highlight the importance of accessible education and

training to enhance public preparedness for emergencies.

Table 2 indicates that before receiving short film-based BLS education, 64.5% of respondents had a low level of knowledge. However, after the intervention, 87.1% of respondents demonstrated a good level of understanding of BLS. These findings suggest that short film-based education can be an effective method for improving public knowledge of emergency response techniques.

Table 2. Respondents' knowledge before and after education (n=31)

Knowledge	Pre Test		Post Test	
	N	%	N	%
Good	1	3.2	27	87.1
Fair	10	32.3	4	12.9
Poor	20	64.5	0	0
Total	31	100	31	100

The Wilcoxon test results indicate a significant difference in the knowledge levels before and after receiving short film-based Basic Life Support (BLS) education ($p = 0.000$). This finding suggests that short film education significantly improves respondents' knowledge of BLS procedures.

DISCUSSION

Short film-based education has been proven to significantly enhance knowledge of BLS. According to Erniasih & Purnomo (2018) Short films are highly effective in increasing public awareness of Clean and Healthy Living Behaviour. This effectiveness is attributed to the ability to replay short films multiple times, allowing audiences to absorb, reflect, and deepen their understanding of the material presented, ultimately improving

Table 3. The Effect of BLS Education through Short Film on Respondents' Knowledge
n (n=31)

Knowledge	Level of Knowledge						<i>p</i>
	Good		Fair		Poor		
	N	%	N	%	N	%	
Before	1	3.2	10	32.3	20	64.5	0.000
After	27	87.1	4	12.9	0	0	
Total	28	90.3	14	45.2	20	64.5	

knowledge retention. Additionally, Listiana, (2019) found that short film-based education had a significant impact on adolescents' knowledge about anaemia at SMPIT/SMAIT Al Firdaus.

Several factors can influence an individual's knowledge, including age, gender, education, occupation, experience, sources of information, and interest (Darsini et al., 2019). The age range of respondents in this study was 31-40 years old (58.1%), with 94.11% demonstrating a good level of knowledge after receiving short film-based education on BLS. As individuals age, their cognitive processing and comprehension improve, allowing them to absorb and retain information more effectively, contributing to enhanced knowledge acquisition (Darsini et al., 2019).

All respondents in this study were female (100%), and 87% of them demonstrated a good level of knowledge. This achievement can be explained through several theories, facts, and scientific perspectives. Cognitively, women are known to have faster and more integrative information processing abilities because they tend to use both hemispheres of the brain simultaneously, especially the right hemisphere, which plays a role in visualisation and intuition (Bremner et al., 2020). Women are more responsive to audiovisual media like short films because

their sensory processing supports learning through combined visual and auditory channels, as explained by Mayer's Multimedia Learning Theory. Socially and motivationally, their higher empathy, interpersonal orientation, and strong intrinsic motivation toward family health and safety make it easier for them to relate to and commit to the BLS material. Therefore, women tend to gain more knowledge from short films, aligning this study's findings with existing theory and empirical evidence (Mayer & Fiorella, 2022).

Education is also known to influence an individual's level of knowledge. The findings of this study indicate that 64.5% of respondents had a high school education, with 80% of them demonstrating good knowledge after receiving short film-based education. The cognitive strength of individuals in acquiring knowledge and engaging in logical reasoning is particularly evident at the high school level, as this stage corresponds to formal operational cognitive development, enabling individuals to think systematically, logically, and abstractly (Yunisca & Nasution, 2023).

Additionally, occupation and experience play a role in shaping an individual's knowledge level. The findings of this study reveal that 80.6% of

respondents were unemployed, yet 84.6% of them demonstrated good knowledge after receiving short film-based education on BLS. Melajang (2021) highlights that homemakers possess spiritual intelligence and psychological well-being, which supports their ability to face challenges and remain open to learning new things. A strong psychological well-being enables them to acquire and process knowledge more effectively.

Additionally, although 93.5% of respondents had no prior experience in performing BLS, an impressive 92.8% of them demonstrated good knowledge after receiving short film-based education. This suggests that even without prior hands-on experience, engaging educational media can significantly enhance understanding and readiness for emergencies. This finding contrasts with Kolb's (2018) which suggests that the more experience an individual has, the more knowledge they acquire. However, based on the researcher's assumption, the increase in respondents' knowledge was more significantly influenced by the educational process and the use of short film as an instructional medium rather than their prior experience. This underscores the effectiveness of audiovisual learning tools in enhancing comprehension, even for individuals without direct practical experience (Maulidya et al., 2022).

Another factor influencing knowledge acquisition is the source of information. In this study, 54.8% of respondents obtained information from the internet, with 81.25% of them demonstrating a good level of knowledge. Information sources play a crucial role in expanding understanding, as they provide access to data, facts, and insights needed to comprehend a topic

thoroughly. Individuals with more diverse sources of information tend to develop broader and deeper knowledge, reinforcing the importance of access to accurate and reliable educational materials (Prihadyanti et al., 2023).

Interest plays a vital role in enhancing knowledge acquisition. In this study, 90.3% of respondents expressed an interest in providing first aid for cardiac arrest victims, with 90.3% of them demonstrating good knowledge levels. Interest acts as a motivational driver, encouraging individuals to actively seek, explore, and understand information more deeply. Passion serves as an internal force that pushes individuals toward learning, mastery, and the achievement of personal or professional goals. When people are deeply engaged in a subject, they are more likely to retain and apply knowledge effectively, reinforcing the importance of self-driven learning and continuous education (Indriani, 2024).

Efforts to enhance knowledge can include various educational methods, such as lectures, question-and-answer sessions, discussions, hands-on demonstrations, role-playing, simulations, and audiovisual media, one of which is short films (Sumartini et al., 2021). Short films are highly effective in conveying concepts clearly because they engage multiple sensory modalities in processing information. The more senses involved—such as visual and auditory perception—the greater the likelihood that the content will be understood and retained in memory (Fitria, 2021). The combination of moving images and sound effects makes it easier for the audience to grasp the material, leading to better knowledge acquisition for those watching (Wahyuningsih, 2022).

Short films offer several advantages, including their engaging delivery, concise duration, and the ability to be replayed multiple times for better comprehension. In the context of Basic Life Support (BLS) education, short films present a realistic sequence of first aid procedures, allowing the audience to visualise and understand the appropriate steps in an emergency. Beyond their instructional value, short films can also enhance concentration skills, stimulate abstract imagination, and boost motivation. By creating a lifelike simulation of real-world scenarios, they leave a lasting impression on viewers, reinforcing their ability to recall and apply the knowledge in practice (Kearney, 2018).

The success of this study in enhancing knowledge was influenced by several factors, particularly the quality of the short film, which combined written content and visuals with an optimal 8-minute duration. A longer film might have led to viewer fatigue, reducing engagement.

In general, short films can effectively convey information to audiences ranging from young adults to older adults. However, this method has certain limitations. If respondents lack sufficient mobile data or a strong signal, they may struggle to view the film in high quality. Additionally, the large file size can pose challenges, reducing accessibility for individuals trying to download the video.

CONCLUSION

Short film-based education has been proven to significantly enhance knowledge of Basic Life Support (BLS) among Nasyiatul Aisyiyah members in Padenganploso Village, Pucuk, Lamongan. This method effectively engages both

auditory and visual senses, making information easier for viewers to process and retain. Future research is encouraged to expand the scope by incorporating skill assessments, increasing the sample size, and adding a control/comparison group to further validate the effectiveness of this educational approach.

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