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Empowering application of basic life support management to cadre, District Astambul, Banjar Regency

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ABSTRACT

Cadres play a vital role in implementing health interventions within the community. Notably, 80 percent of emergency cases involving respiratory and cardiac arrest occur outside hospital settings. Cadres contribute significantly to building motivation and confidence in the management of Basic Life Support (BLS). This activity aimed to enhance the quality of health services by empowering community health cadres in BLS management. The method employed involved socialization and training provided to 22 community health cadres across villages in Astambul District. The results showed that 68 percent of cadres demonstrated a good level of knowledge following the socialization activities. The training outcomes indicated that 90 percent of cadres correctly performed the initial safety step ("scene safety") in BLS procedures. Overall, most cadres were able to perform BLS actions accurately, particularly in the stages of checking responsiveness, calling for help, and initiating recovery. It is recommended that follow-up efforts be made to further enhance cadres' skills, especially in applying BLS as a means of developing community potential in the health sector.

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1. INTRODUCTION

Astambul Subdistrict, located in Banjar Regency, South Kalimantan Province, covers an area of 216.5 km^2 with an elevation of 6 meters above sea level. The population of Astambul Subdistrict is 34,531 people, with a population density of 159 people per km^2 (Maria et al., 2024). Astambul Subdistrict consists of 22 villages characterized by flat terrain, mostly swamp and rice field areas, with the majority of the population working as farmers and traders. The situation and condition of the community in Astambul Subdistrict can trigger emergency cases, particularly cardiac arrest and respiratory arrest, which are commonly encountered outside of hospitals. In fact, 80 percent of emergency cases occur outside hospital settings (Malik, 2024).

To address this issue, it is necessary for the general public to understand the management of basic life support. This can be achieved through a structured community empowerment program. However, overly broad community empowerment efforts may lead to ineffective dissemination of information. Therefore, community empowerment should be carried out through family members who are trained as community health cadres.

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As the frontline of the community, cadres must possess adequate knowledge and skills to be able to respond directly and teach others how to perform basic life support (Magfirah et al., 2023). The characteristics of the Astambul community as farmers and traders reflect diverse activities and lifestyles, which also impact health. Based on data from Astambul Public Health Center, the three most prevalent diseases are Hypertension, Diabetes Mellitus, and Gastroenteritis. These diseases indicate a high risk for emergency conditions.

Findings from a study conducted by Nazma et al. (2024) show that health education and simulation of basic life support significantly improve participants' knowledge and skills, with 75 percent reaching a good category. This is supported by a community service activity in the form of basic life support (BLS) education and simulation delivered to 23 lay workers at Ampama Port, where 80 percent of participants demonstrated good knowledge improvement (Nazma et al., 2024).

A preliminary study conducted in September 2024 involving five community health cadres in Astambul Subdistrict found that four cadres had no knowledge of basic life support (BLS) information or procedures, and one cadre had witnessed a BLS procedure but did not understand what basic life support entails. Cadres are community members who possess the ability to carry out structured activities within a work program on a voluntary basis. Family cadres in a village play a vital role in facilitating planning, implementation, and the observation process in family assistance, particularly at the subdistrict, village, and hamlet levels. Family cadres are essential as they serve as an extension of several village service sectors, including healthcare services.

Health services provided by cadres directly within the community encompass various activities, including the operation of integrated health service posts (posyandu) and serving as community health coordinators (Maria & Wardhani, 2023). In 2020, Radar Banjar reported a flood incident in Astambul Subdistrict, in which one victim was swept away by the flood but was rescued through the application of basic life support by a local resident with a healthcare background.

An effective emergency response system is needed as a preventive measure, especially in high-risk areas for emergency cases. An optimal emergency response system requires skilled and competent human resources capable of administering first aid, such as basic life support (Quao et al., 2025). Public knowledge can enhance overall well-being, disease prevention, and the ability to manage various risk situations by improving physical, mental, and social health status (Nurdin et al., 2023). Increased health knowledge also contributes to human productivity, as it empowers individuals to become economically and socially productive members of society.

Community knowledge helps facilitate early-stage assistance in emergency situations. One of the key roles of health education is to provide information about diseases that commonly occur in the community, so that people can recognize early warning signs and take immediate action to prevent more severe consequences. Public health is greatly influenced by community health services, which aim to help individuals achieve a state of physical, mental, spiritual, and social well-being that supports both social and economic productivity (Insani et al., 2023). Cadres are members of the community who have undergone training and received information, making them responsible for disseminating that knowledge and training to family members and the wider community. Family cadres serve as an initiative to develop and implement emergency preparedness through Basic Life Support (BLS), aimed at improving knowledge, attitudes, skills, and self-efficacy so that family members can provide first aid in emergency situations anytime and anywhere.

According to the research by Nurdin et al. (2023) analyzing the ability of health cadres to perform Basic Life Support, the t-test analysis with a 95 percent confidence level and alpha < 0.05 (5 percent) showed a significant increase in knowledge and skills following BLS training for health cadres in Sunyarangi Village, under the jurisdiction of the Sunyarangi Community Health Center, Cirebon City. With a significance value of 0.000, it can be concluded that empowering family cadres is a crucial first

step in enabling communities to provide life-saving assistance, especially in cardiovascular emergencies such as respiratory arrest and cardiac arrest, where BLS must be administered immediately (Nurdin et al., 2023).

The role of a cadre is significant in organizations, communities, and posyandu (integrated health service posts). In an organizational context, a cadre is a prospective member trained and prepared to acquire specific skills and knowledge. Within the community, cadres are capable of identifying aspirations, understanding the needs and issues faced by residents, and acting as a bridge between organizations or groups and the public. In posyandu activities, cadres are trained to perform various duties such as disseminating information, preparing venues, organizing supplementary feeding programs (PMT), assigning tasks among cadres, coordinating with healthcare workers, preparing educational materials, maintaining activity logs, conducting health education to promote healthy homes, engaging with community leaders to report on posyandu outcomes, and learning the posyandu information system. Considering the crucial role of cadres, enhancing their knowledge in Basic Life Support (BLS) is essential (Indarti, 2021).

The act of providing lifesaving intervention for victims of respiratory and cardiac arrest is known as Basic Life Support (BLS) (Hidayati, 2020). The management of BLS requires swift and accurate actions, as it is time-sensitive and follows a sequence that must be completed promptly to avoid causing harm to the victim (Souza et al., 2022). Delayed BLS can lead to serious consequences, including psychological trauma, disability, or even death (Anwar et al., 2024). Effective BLS management requires collaboration from all stakeholders. In the Astambul sub-district, part of the Astambul Public Health Center's working area, the family cadre coordinator plays a role in providing permissions and facilities for implementing community service programs such as family cadre training in emergency BLS response. This training aims to enhance knowledge, skills, and coordination with relevant stakeholders in addressing emergency situations within the Astambul area.

It is important for the broader public to understand that Basic Life Support is a skill that can be taught to laypeople, challenging the paradigm that BLS should only be performed by medical professionals and healthcare workers (Insani et al., 2023). This statement highlights the necessity for the public to be knowledgeable and capable of performing BLS in cases of respiratory or cardiac arrest caused by daily accidents, disasters, or cardiovascular diseases. The primary goal of BLS is to restore respiratory and circulatory function. Individuals with BLS knowledge tend to have greater confidence in performing these actions (Sayuti, 2021).

2. METHODS

Activity Planning

The activity was conducted within the working area of the Astambul Public Health Center, Astambul Sub-district, which comprises 22 villages, each represented by one cadre, totaling 22 cadres participating in the program. The equipment required for the activity included presentation tools such as a sound system, laptop, and projector, utilizing the hall provided by the Astambul Health Center. Training equipment for Basic Life Support (BLS) included BLS manikins, ambu bags, gloves, and respiratory support devices. The cadres received information on health education and BLS skills within the context of BLS management and standardized public health services.

Coordination and Socialization

The facilitator fully understands that the success of the activity requires strong support, especially from the cadres. Therefore, the first step was to send a request letter for facilitation of the community

service activity to the Astambul Sub-district office. The team was then directed to consult directly with the cadre coordinator, based on the information that Astambul Sub-district has 22 cadres distributed across 22 villages. Coordination and socialization with the cadres were essential to ensure full attendance on Friday, September 27, 2024, at 09:00 WITA in the Astambul Health Center Hall. The purpose of this coordination and socialization was to gain support and commitment from the community, particularly in the implementation of the Family Cadre Empowerment Program for Basic Life Support Response in Astambul Sub-district, as well as to align understanding regarding the planned program.

Table 1. Technical activities for implementing family cadre empowerment in Astambul District

Flow of activities	Implementations	Goals
Stage 1 Activities	Coordination to the Sub-district Head and Cadre Coordinator	Initial application for community service activities
Stage 2 Activities	Socialization to family coordinators by the Community Service Team	Preparing educational materials, making activity schedules, educational materials, activity schedules and technical implementation
Stage 3 Activities	Identification of family cadres as prospective activity participants	Screening of family cadres who are ready for training
Stage 4 Activities	Family cadre training implementation activities	Empowering family cadres

Training

The most crucial stage in the community service activity lies in the Training phase. Therefore, it is necessary to measure the cadres' knowledge beforehand by conducting a pre-test, followed by a post-test, which are presented as follows:

Table 2. Pre-test and post-test questions for basic life support management

Statements
Step 1: Ensuring Safety
1. Secure yourself 2. Secure environments 3. Secure the victim
Step 2: Check Response
1. Call the victim 2. Tap the victim's shoulder 3. Provide pain stimulation: pinch the tip of the nail, press the sternum 4. If the victim still does not respond, immediately call for help
Step 3: Request Help
1. Asking for help from someone around 2. Asking for help by phone 3. Asking for help from the emergency response services
Step 4: Check Pulse and Perform Cardiac Massage
1. Check the Carotid Pulse (pulse in the neck area) 2. Check the nose and chest area and feel for breath 3. Place your clenched hands on the victim's chest 4. Massage the chest 30 times and give resuscitation two times
Step 5: Recovery
1. If breathing and pulse are felt, then cardiac massage can be stopped. 2. Set the victim's position tilted and bend their legs. 3. Take them to a health service institution.

Partner problem analysis of family health cadres in Astambul Subdistrict revealed that no cadres have been trained to assist the community in emergency situations such as respiratory and cardiac arrest, nor do they possess the skills for early detection and preventive intervention for such incidents. The next step in the activity involves meetings and aligning perceptions with stakeholders, particularly program holders, to coordinate between cadres and program coordinators for workshops and training implementation. The implementation phase includes meetings and consensus building between the service team and partners in Astambul Subdistrict, including the cadre coordinator. It is followed by cadre empowerment through seminars, workshops, health education sessions, and hands-on practice in performing Basic Life Support (BLS). Upon completion of the activities, monitoring and evaluation are carried out by the service team by distributing a questionnaire on satisfaction with the community service implementation as an evaluation tool to ensure that the activities are conducted in accordance with established standards.

Evaluation

Evaluation is a process to determine the extent to which objectives have been achieved and to assess the level of success of the activities carried out. In the activity titled *Empowering Application of Basic Life Support Management to Cadres, Astambul District, Banjar Regency*, it was found that 22 cadres participated and went through several stages, each evaluated as follows: (1) Training on Basic Life Support (BLS) management techniques revealed the need for cadres who understand BLS procedures so they can motivate and facilitate learning among the community; (2) Encouraging cadres to collaborate with the community and act as problem solvers within their environment; (3) Guiding cadres to understand the complexity of issues faced by the community, especially in implementing BLS practices; (4) Supporting cadres in helping the community to easily apply BLS in emergency conditions and assisting in developing the community's potential. The activity evaluation also involved categorizing the levels of knowledge and training among the cadres. Cadres are expected to possess adequate knowledge and correctly perform BLS procedures.

3. RESULTS AND DISCUSSION

Results

The initial stage of the activity involved coordination with the sub-district head and cadre coordinator in Astambul Sub-district regarding the schedule, facilities, and venue for the training activity. Based on the results of the coordination and socialization, it was agreed that the meeting with the cadres would be held in the third week of September 2024. This activity involved 22 cadres, with each of the 22 villages in Astambul Sub-district represented by one cadre. Monitoring and evaluation were carried out, particularly regarding cadre satisfaction with the implementation of the basic life support training.

The basic life support training for the cadres was conducted on Thursday, September 19, 2024, at the Astambul Community Health Center Hall, Astambul Sub-district, Banjar Regency. Table 1 provides detailed demographic data of the health cadres in Astambul Sub-district.

The implementation of the activity was divided into two parts: first, health education and second, basic life support training, which began with a pre-test and concluded with a post-test. The training activity included a demonstration on Basic Life Support (BLS) management. The training materials are available

at the following link: https://drive.google.com/drive/folders/1_KureTfpSWPW5a-6Qf7MM27FqlxO1n-z?usp=sharing](https://drive.google.com/drive/folders/1_KureTfpSWPW5a-6Qf7MM27FqlxO1n-z?usp=sharing)

The health education session lasted for 30 minutes and covered the concept of basic life support, including its definition, objectives, mechanisms, and procedures. The material delivery utilized health education methods through lectures and interactive discussions. The lecture method was supported by media such as a laptop and LCD projector, along with printed booklets and a video themed "Basic Life Support Training."

Figure 1. Implementation of pre-test and BHD health education

The training stage on basic life support (BLS) management involved the presentation of BLS techniques relevant to everyday life situations, particularly within the community. The BLS techniques covered included: securing the area from danger, checking for responsiveness, calling for help, checking the pulse, performing chest compressions, and providing the recovery position.

Following the completion of health education and training for the cadres, a post-test was administered as an evaluation of the cadres' knowledge level. In addition, an analysis was conducted to assess the cadres' skills in implementing basic life support procedures.

Figure 2. Implementation of Basic Life Support training and post-test

Demographic data of the cadres revealed that the majority were female, comprising 90 percent. The age group 21–25 years represented the largest proportion at 7 percent. Most family cadres had a high school education (79 percent), and 90 percent had never received training in Basic Life Support (BLS). The initial assessment of the community service activity, based on demographic data, indicated that knowledge about BLS among the cadres was very limited, as 90 percent had never participated in BLS training.

Table 3. Demographic information of Health Cadres in Astambul District

Demographics	Total	Percentage
Gender		
Male	2	10
Female	20	90
Age		
21 – 25 years old	7	31
26 – 30 years old	6	27
31 – 35 years old	6	27
36 – 40 years old	3	15
Education Level		
High School	15	79
Bachelor's Degree	7	31
Master's Degree	0	0
Prior Experience in Basic Life Support Training		
Yes	2	10
No	20	90

Table 4. Description of pre-test and post-test knowledge of cadres

Level of Knowledge	Pre-test		Post Test	
	Total	Percentage	Total	Percentage
Good	0	0	15	68
Average	4	19	7	32
Low	18	81	0	0
Total	22	100	22	100

The results of the pre-test and post-test are presented in Table 4. The pre-test results showed that the majority of cadres had knowledge in the "low" category, accounting for 81 percent. After the post-test was conducted, it was found that most cadres had knowledge in the "good" category, accounting for 68 percent.

Table 5. Overview of Basic Life Support training results for cadres

Steps	Practice	Total	Percentage
Initital Safety	Correct action	20	90
	Incorrect action	2	10
Check Response	Correct action	15	68
	Incorrect action	9	32
Request Help	Correct action	18	81
	Incorrect action	4	19
Check Pulse & Cardiac Massage	Correct action	10	45
	Incorrect action	12	55
Recovery	Correct action	17	77
	Incorrect action	5	23

The results of the cadre performance during the basic life support training are presented in Table 5. It was found that cadres demonstrated correct implementation of basic life support procedures, with the majority (90 percent) correctly performing the "scene safety" step. However, the "pulse check and

chest compression" step showed the highest rate of incorrect actions, with 55 percent performing it incorrectly. In conclusion, most cadres correctly practiced key procedures, particularly during the response check, calling for help, and recovery position stages.

Problem analysis reveals the absence of cadres who are able to assist the community during emergency conditions such as respiratory and cardiac arrest, and a lack of cadre skills in early detection and preventive intervention for these incidents. Basic Life Support (BLS) training is essential to teach BLS techniques that are relevant to real-life situations, especially within the community. The lack of health education and training, particularly among cadres, forms the foundation and objective of this community service activity.

Emergency situations can occur anytime and anywhere, presenting a challenge for the general public to be capable of performing first aid to save victims. Victims have a golden period for rescue, where delays even by seconds can result in bodily disability (Prakoeswa, 2022). Therefore, there is a need for responsive and prepared human resources for implementing basic life support in the community. As frontliners in the community, cadres are expected to motivate and set examples in BLS implementation. The health education and training activities provided have increased cadres' knowledge and boosted their confidence in making prompt decisions to administer aid in emergency situations (Wiryansyah & Musdiana, 2024).

Discussion

Basic Life Support (BLS) is a set of interventions aimed at restoring and maintaining vital organ functions in victims experiencing respiratory and cardiac arrest (Albadi et al., 2020). BLS knowledge is essential for cadres as they are the community members closest to the public. The role of cadres is crucial in cases of emergencies, disasters, and other health issues (Purwanto et al., 2021). Cadres' preparedness in administering BLS has a direct impact on victim survival and helps prevent disability. Therefore, community service in the form of health education and training for cadres in Astambul District is necessary.

The community service activity conducted for the cadres, based on demographic data, showed that the majority of cadres were female (90 percent). As most female participants spend their time at home, they have more availability to join cadre activities, providing an opportunity for greater female involvement. The dominant age group of cadres was 21–25 years (7 percent), representing young adults with energetic stamina and high curiosity, making them more receptive to participating in cadre programs. Most cadres held a high school diploma (79 percent), indicating they possess factual, conceptual, and procedural knowledge relevant to learning and practical application. Notably, 90 percent of cadres had never received BLS training before, presenting a strong motivation to introduce educational and training activities to strengthen their BLS skills.

The pre-test results showed that 81 percent of cadres had low levels of BLS knowledge. This is consistent with the fact that emergency response information is typically received only by healthcare professionals, while 80 percent of emergency cases occur outside hospitals. This highlights the urgent need for the general public, including cadres, to receive information about emergency response procedures. The post-test results showed that 68 percent of cadres had improved to a good knowledge category, demonstrating that the health education provided effectively increased their knowledge level. BLS procedures, which are performed on victims experiencing respiratory and cardiac arrest, are vital emergency interventions. Understanding BLS procedures requires continuous knowledge development among cadres.

The basic life support (BLS) training for cadres demonstrated that the majority (90 percent) correctly performed the initial "scene safety" step. The safety assessment stage, ensuring self-safety, environmental safety, and victim safety, is a complex concept but was easily understood by the cadres. This step is essential as it requires the responder to evaluate the surroundings before offering help, ensuring that the responder does not become the next victim. A strong willingness to help must still be accompanied by hazard analysis to ensure the safety of the helper. Personal vigilance is crucial when attempting to assist victims in emergency situations (Septimar et al., 2023).

However, the pulse check and chest compressions stages were the most commonly performed incorrectly, with 55 percent of cadres making mistakes. These two components are core actions in the BLS procedure. Checking for the carotid pulse requires high sensitivity and a basic understanding of anatomy and physiology, which many cadres lacked. This knowledge gap became a major barrier in performing the task correctly. Chest compressions also require significant physical effort. The recommended compression depth of 5–6 cm poses a challenge for cadres to perform 30 compressions followed by two rescue breaths. These stages are not easily mastered in a short time, thus highlighting the need for ongoing training.

In contrast, most cadres were able to correctly perform the steps of calling for help, checking for responsiveness, and placing the victim in a recovery position. These actions are more intuitive and can be practiced in daily life scenarios.

Cadres are community members capable of carrying out structured programs voluntarily. In a village setting, family cadres play a key role in facilitating the planning, implementation, and observation of family support efforts, particularly at the district, subdistrict, and village levels. Strengthening family quality through family development initiatives is carried out by empowering cadres. A lack of understanding of BLS procedures makes it difficult for cadres to make quick decisions to assist victims. Cadres who are able to carry out BLS procedures can effectively help save lives in emergency situations (Mulyana, 2024).

4. CONCLUSION AND RECOMMENDATIONS

The implementation of health education and basic life support (BLS) training conducted at the Astambul Community Health Center revealed that cadres had never participated in such activities before. The cadres displayed enthusiasm and motivation to carry out BLS procedures for victims in emergency situations. The reception of the program was positive, as evidenced by 100 percent attendance. The majority of cadres demonstrated correct actions in the "scene safety" step, with 90 percent performing it accurately. However, the pulse check and chest compressions were the most incorrectly executed steps, with 55 percent making errors. Most cadres were able to correctly perform the steps of checking responsiveness, calling for help, and placing the victim in the recovery position. As the frontline representatives of the community, cadres serve as the primary conduit for disseminating information. Therefore, empowering cadres is essential to enhance public health awareness and promote individual concern for both personal well-being and the well-being of others.

The implemented activity still has several limitations, particularly regarding the administration of basic life support (BLS), which requires a structured training process based on standardized credit hour units. Training facilities, especially BLS manikins, remain insufficient to fully support the procedure. It is essential to disseminate knowledge to cadres to ensure they are empowered to take appropriate action in emergency situations within the community. A cadre coordinator is needed to organize the activity schedule so that the implemented programs can be sustained. Cadres who are capable of delivering information can educate the community through various local initiatives. Support from all stakeholders, particularly policymakers, is crucial to ensure that cadre empowerment leads to further implementation and follow-up actions, so the program continues and does not discontinue.

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