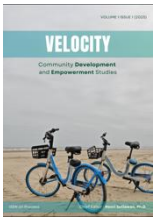
VELOCITY
Community Development and Empowerment Studies
Volume 1 Issue 1 (2025) ISSN: ON PROCESS



Healthy Diet as an Initial Step to a Life Without Heart Attacks in the Pekon Wonodadi Community

Sugiarto[1], Aisyah Humairo[1], Adelia Bilqis Afifah[1], Anis Indri Adiningsih[1], Shepia Putri Anggraini[1], Safitri[1], Dea Frita Alifia[1], Renaldi Tajri[1], M Prayoga Candra Aulia[1], Necha Ananda[1], Galang Sukma[1]

[1] Aisyah Pringsewu University, Lampung, Indonesian

Abstract

Introduction: Low public awareness regarding heart attack prevention, particularly on healthy diet and early symptom recognition, contributes significantly to high mortality rates. This knowledge gap is critical in community settings where the lack of structured health education leads to delayed medical intervention and poor health outcomes. **Objective:** This program aimed to increase community knowledge in Pekon Wonodadi regarding heart attack prevention, focusing on healthy dietary practices, early symptom recognition, and emergency first aid. **Method:** This community service was conducted with 15 productive-age residents in Pekon Wonodadi using a participatory education method. The program included counseling on healthy diet, first aid demonstrations, and interactive discussions. A baseline questionnaire was used to assess participants' health profiles, and program effectiveness was evaluated through their active engagement and feedback.
Result: The baseline assessment revealed that a family history of heart failure (40.0%) and obesity (20.0%) were the most prevalent risk factors among participants. The most frequently reported clinical symptoms were fatigue even with light activity (46.7%) and orthopnea or difficulty sleeping in a supine position (46.7%). The educational intervention was received with high enthusiasm and active participation, indicating a positive reception from the community and an increase in awareness regarding cardiovascular health. **Conclusion:** The health education program effectively raised community awareness of cardiovascular risks and preventive measures, empowering them to adopt healthier lifestyles and reduce the future risk of heart disease.
Keyword: Community Service, Health Education, Heart Attack, Healthy Diet, Prevention.

Corresponding : Sugiarto
Email : sugiartoners@gmail.com
Mobile phone : +62 819-1025-8910
DOI : https://doi.org/10.52221/velocity.v1i1.921

Introduction

Cardiovascular diseases (CVDs) consistently rank as the leading cause of morbidity and mortality worldwide (Sesrianty et al., 2020). Data from the World Health Organization (WHO) shows that CVDs, especially heart disease and stroke, are responsible for about 17.9 million deaths annually (World Health Organization, 2023). The high mortality rate makes coronary heart disease (CHD) one of the most serious global health threats, requiring continuous attention from various parties (Sinaga et al., 2024).

The 2018 Basic Health Research (Riskesdas) report indicates that the prevalence of coronary heart disease in Indonesia reached 1.5%, or was experienced by about 2.6 million people (Kemenkes, 2018) This figure shows a significant increase from previous years and confirms that CHD is a substantial national health burden (Sesrianty et al., 2020). This fact underlines the urgency of implementing effective promotional and preventive programs that directly reach the community level.

Pathophysiologically, CHD is generally caused by atherosclerosis, which is the narrowing of the coronary arteries due to the accumulation of fatty plaques (Rahmawati et al., 2024). This condition obstructs the flow of oxygen-rich blood to the heart muscle (myocardium), which can lead to myocardial infarction or a heart attack (Putra et al., 2023). This atherosclerosis process is triggered by various risk factors, including hypertension, diabetes mellitus, smoking habits, lack of physical activity, and an unhealthy diet (Rahmawati et al., 2024).

Modern dietary and lifestyle factors play a crucial role in the increased risk of CHD. As times change, people tend to adopt a practical lifestyle, including in their food consumption. The preference for fast food, sodas, and foods with high saturated fat, sugar, and calorie content is increasing, especially among adolescents and the productive age group (Kirana et al., 2023). This unbalanced consumption pattern directly contributes to an increase in blood cholesterol levels, which becomes the main foundation for the formation of atherosclerotic plaques (Permatasari & Muhlishoh, 2020).

On the other hand, the fatal impact of heart attacks is often exacerbated by delays in obtaining appropriate medical treatment. This delay is not only caused by a lack of access to health facilities but is more often rooted in the low level of public knowledge in recognizing the early signs and symptoms of a heart attack (Rahayu et al., 2020). The inability to identify symptoms early results in a delay in the decision to seek help, a critical period that is very decisive for the patient's prognosis.

This low level of knowledge is also reinforced by the existence of misconceptions and myths in the community. One of the most common misconceptions in Indonesia is the assumption that the typical chest pain symptoms of a heart attack are a harmless condition known as "angin duduk". This perception causes serious symptoms to often be ignored, so that medical treatment that should be given immediately is delayed, increasing the risk of avoidable death. (Rahayu et al., 2020).

Based on an initial situation analysis conducted in the Pekon Wonodadi area, Gadingrejo District, problems in line with the context above were identified. It was found that most community members, especially in the productive age group, did not have an adequate understanding of the early signs of a heart attack. In addition, an unhealthy lifestyle was also observed, characterized by a high-fat diet and a lack of physical activity.

To date, there has been no structured and sustainable health education program on CHD prevention in this community, which has resulted in low health literacy related to heart health.

Given the complexity of these problems, intervention in the form of community-based health education becomes a strategic, relevant, and urgent step. Planned and participatory health education is believed to be able to increase knowledge, change misconceptions, and empower the community to adopt healthy behaviors independently (Sesrianty et al., 2020). Therefore, this community service activity was carried out with the aim of increasing the understanding of the Pekon Wonodadi community regarding the importance of a healthy diet as a primary prevention step, the ability to recognize symptoms, and knowledge about first aid for heart attacks.

Objective

Based on the problems outlined in the introduction, this community service activity was designed and implemented to achieve several main objectives as follows: Meningkatkan pemahaman masyarakat di Pekon Wonodadi mengenai penyebab, tanda dan gejala, serta langkah-langkah pencegahan Infark Miokard Akut (serangan jantung).

1. To increase the Pekon Wonodadi community's understanding of the causes, signs and symptoms, and prevention steps for Acute Myocardial Infarction (heart attack) and to improve the community's skills in recognizing the early symptoms of a heart attack and providing appropriate first aid in such emergencies.
2. To specifically educate the community on the importance of adopting a healthy lifestyle, especially a balanced diet, as a preventive effort to reduce the risk of heart disease
3. To provide informative and easily accessible educational media for the community, such as leaflets and posters, to support the learning process independently and continuously.
4. To initiate the formation of cadres or "Healthy Heart Ambassadors" at the community level as a first step to ensure the sustainability of the health education program in the future.

Method

Design and setting

This community service activity was implemented using a participatory health education method. The main approaches used included interactive counseling or lectures, group discussions, and practical simulations and demonstrations. This series of methods was designed not only to transfer theoretical knowledge but also to build practical skills and actively increase participants' awareness.

The activity was held on Saturday, May 3, 2025, at a resident's home in the Pekon Wonodadi area, Gadingrejo District, Pringsewu Regency, Lampung Province. The target or partners in this activity were a group of productive-age residents who were identified as having a low level of health literacy, with 15 participants. The procedure for this community service activity was carried out through three main systematic stages: preparation, implementation, and evaluation.

1. **Preparation Stage:** This stage began with a preliminary survey to specifically identify the problems and needs of the partners in Pekon Wonodadi. Next, coordination was carried out with village officials and local community leaders to agree on the time, place, and technical implementation of the activity. The service team then prepared educational materials in a PowerPoint presentation format and printed media in the form of leaflets, and also prepared evaluation instruments in the form of pre-test and post-test questionnaires.
2. **Implementation Stage**: The implementation of the activity began with an opening session, where the service team introduced themselves and explained the purpose and agenda of the activity to all participants. Before the material was delivered, participants were asked to fill out a pre-test questionnaire to measure their initial knowledge level about heart attacks and their prevention. The main event continued with the delivery of counseling material that included definitions, risk factors, signs and symptoms, the importance of a healthy diet, and first aid steps for heart attacks. To strengthen practical understanding, this session was followed by demonstrations and first aid simulations. The activity was interactive through a discussion and Q&A session to give participants the opportunity to explore information in more depth.
3. **Evaluation Stage:** At the end of the session, an evaluation was conducted to measure the impact of the activity. Participants were asked to fill out the questionnaire again (post-test) with the same questions to assess the increase in knowledge after receiving the education. In addition to quantitative evaluation, a descriptive qualitative evaluation was also carried out by observing the level of enthusiasm and activity of the participants during the activity. As a closing, the team distributed leaflets to all participants as reading material to reinforce the information that had been received, and the activity ended with a joint prayer. The instruments used in this activity included presentation materials, informative leaflets, and knowledge questionnaires. Data analysis was carried out quantitatively by comparing the average scores of the pre-test and post-test to see the increase in understanding, and qualitatively through observation and field notes during the discussion process to assess participants' responses and participation.

Population and sampling

The population targeted in this community service activity consisted of productive-age residents of Pekon Wonodadi with low levels of health literacy. A total of 15 participants were selected using purposive sampling based on accessibility, willingness to participate, and relevance to the program's objectives.

Instrument and measurement

The data collection instruments used in this program consisted of several components. Pre-test and post-test questionnaires were administered to evaluate participants' baseline and post-intervention knowledge regarding heart disease and its prevention. Observation sheets were utilized to assess the level of participant engagement and interaction throughout the educational sessions. Additionally, educational materials such as leaflets

and PowerPoint slides were employed to support the learning process and help reinforce the key messages delivered during the program.

Data collection and analysis

Data were collected before and after the intervention using the same set of questionnaires to assess changes in knowledge levels. Descriptive analysis was conducted by comparing pre-test and post-test scores. Qualitative analysis involved observations of participant enthusiasm, engagement during discussions, and feedback.

Result

The community service activity titled "Jaga Jantungmu: Diet Sehat, Langkah Awal Hidup Tanpa Serangan Jantung" (Protect Your Heart: Healthy Diet, the First Step to a Life Without a Heart Attack) was successfully implemented according to plan. This activity was attended by 15 participants who were members of the productive age group in the Pekon Wonodadi area. The implementation of the activity included the delivery of educational material, demonstrations, and interactive discussion sessions, which received a positive response from all participants.

As part of the initial situation analysis, a questionnaire was administered to participants to identify the profile of risk factors and clinical symptoms relevant to heart disease. The data on the risk factors owned by the participants is presented in Table 1.

T able 1. Distribution of Participant Risk Factors

Risk Factor	Yes	No	Percentage Yes (%)
History of hypertension	1	15	6,2
Diabetes	0	15	0,0
Had a heart attack/CHD	0	15	0,0
Smokes or has smoked	0	15	0,0
Family history of heart failure	6	9	40,0
Obesity (BMI >30)	3	12	20,0

Source: Primary PKM Activity Data, 2025

Based on Table 1, it can be identified that the most dominant risk factor in the participant group is a family history of heart failure, which was reported by 40.0% of participants. Another risk factor detected was obesity with a Body Mass Index (BMI) above 30, which was found in 20.0% of participants. Meanwhile, a history of hypertension was only owned by a small number of participants (6.2%), and no participants reported a history of diabetes, a previous heart attack, or a smoking habit.

In addition to risk factors, the clinical symptoms that participants often experienced in their daily lives were also identified. The results of this clinical symptom assessment are presented in detail in Table 2.

Table 2. Distribution of Clinical Symptoms Experienced by Participants

Clinical Symptoms	Often Experiences	Does Not Experience	Percentage Often Experiences (%)
Shortness of breath with light activity or at rest	4	11	26,7
Swelling in the feet/ankles or abdomen (edema)	0	15	0,0
Easily tired or weak even with light activity	7	8	46,7
Chronic cough (especially with foamy phlegm)	1	14	6,7
Palpitations (abnormal heart pounding)	4	11	26,7
Sudden weight gain (>2 kg/week)	3	12	20,0
Decreased appetite or nausea	4	11	26,7
Difficulty sleeping in a supine position (must be propped up with pillows)	7	8	46,7

Source: Primary PKM Activity Data, 2025

The data in Table 2 shows that the most common clinical symptoms complained of by participants are being easily tired or feeling weak even when doing only light activity (46.7%) and difficulty sleeping in a supine position or orthopnea (46.7%). Other symptoms that were also reported quite often were shortness of breath, palpitations (heart pounding), and decreased appetite, which were each experienced by 26.7% of participants.

Qualitatively, the implementation of the educational activity went smoothly and received a very good welcome from the community. The level of participant participation was high, as shown by full attendance throughout the activity and active participation in the discussion and Q&A sessions. The final evaluation of the activity showed that participants were able to absorb the material well and there was a positive change in their level of understanding and awareness of the importance of heart disease prevention through a healthy diet and early symptom recognition.

Discussion

This community service activity has generally been successfully implemented and has achieved its goal of increasing the initial awareness of the Pekon Wonodadi community regarding heart disease prevention. This success is not only reflected in the enthusiasm of the participants but also in the risk profile data that was successfully identified. The finding that 40.0% of participants had a family history of heart failure and 20.0% experienced obesity shows the existence of significant risk factors in the community. Although other risk factors such as hypertension and diabetes were not dominant in this group, the presence of genetic and lifestyle risk factors (obesity) is strong enough justification that preventive interventions are very necessary.

The interpretation of the clinical symptom data further strengthens the urgency of this activity. Complaints such as being easily tired (46.7%) and having difficulty sleeping supine or orthopnea (46.7%) are non-specific but important indicators that can lead to cardiovascular dysfunction. These symptoms are often ignored by the community because they are considered ordinary fatigue. Therefore, education that connects these symptoms with the potential risk of heart disease is very relevant, in line with the findings of Putra et al (2023) who emphasize the importance of early symptom recognition to prevent delays in treatment.

The participatory education method, which combines counseling, demonstrations, and interactive discussions, proved to be effective in increasing participant engagement. The active participation of participants in the Q&A session indicates that the topics raised were in line with their information needs. This approach is in line with research by Apriyatmoko & Aini (2020) who also found that a participatory approach can significantly increase the knowledge and abilities of adolescents on the topic of heart attack management. The effectiveness of this method confirms that for complex health topics, one-way information transfer is not enough; dialogue and direct practice are needed to build a comprehensive understanding.

The low level of initial knowledge in Pekon Wonodadi is a reflection of a broader phenomenon in Indonesia. Many people, especially in rural areas, have limited access to valid and structured health information. This condition is often exacerbated by deep-rooted cultural misconceptions, such as considering a heart attack as "angin duduk," which fatally delays the search for medical help (Rahayu et al., 2020). Thus, this educational activity not only serves to fill the knowledge gap but also to correct dangerous misconceptions.

To ensure the sustainability of the program's impact, a systematic framework is needed. A single educational session is a good first step, but to achieve long-term behavioral change, the program needs to be carried out periodically. One of the most effective strategies is through the empowerment of local health cadres. The formation of "Healthy Heart Ambassadors," as suggested in the activity report, is a crucial step. The role of cadres as agents of change and partners of health workers in the community has been proven effective in various health programs, including in the early detection and prevention of heart emergencies (Sinaga et al., 2024). These cadres can then continue to disseminate information and promote a healthy lifestyle using an easy-to-remember framework such as CERDIK (Cek kesehatan, Enyahkan asap rokok, Rajin aktivitas fisik, Diet seimbang, Istirahat cukup, Kelola stres).

However, it must be acknowledged that this activity has several limitations. The limited number of participants (n=15) means that the results of the risk profile assessment cannot be generalized to the entire population of Pekon Wonodadi. In addition, the evaluation of the activity's impact was more dominant in a qualitative nature based on observation and participant activity. Although the report mentions a positive change in knowledge, the unavailability of quantitative data comparing pre-test and post-test scores is one of the limitations in objectively measuring the magnitude of the knowledge increase. In the future, similar research or activities are suggested to involve a larger number of participants and use more measurable evaluation instruments.

Restate the Key Findings

The program revealed several important findings regarding the cardiovascular risk profile and health awareness of the participants. Notably, 40% of the participants reported having a family history of heart failure, indicating a significant hereditary risk factor within the community. In addition, 46.7% frequently experienced early warning signs of heart disease, such as fatigue during light activity and orthopnea. These symptoms highlight the need for increased vigilance and early intervention. The educational sessions conducted during the program led to noticeably improved awareness and active participation, suggesting that the intervention successfully enhanced participants' knowledge of heart attack symptoms and the importance of adopting a healthier lifestyle.

Interpret the Results

The presence of significant risk factors such as obesity and family history highlights the urgent need for preventive education. The improvement in participant understanding indicates the effectiveness of participatory learning methods in raising health literacy related to cardiovascular disease.

Compare with Previous Studies

These findings align with studies by Putra et al. (2023) and Apriyatmoko & Aini (2020), which also emphasize the role of interactive and community-based education in enhancing early recognition and management of heart attacks.

Highlight the Implications

Community health programs focused on dietary education and early symptom recognition can significantly reduce the risk of coronary heart disease. Equipping communities with practical knowledge empowers them to take proactive measures for their health and improves their response in emergencies.

Discuss the Limitations

This study had several limitations that should be acknowledged. First, the small sample size (n=15) restricts the generalizability of the findings to the broader population. Second, the absence of long-term follow-up prevents the assessment of whether the improvements in knowledge and behavior were sustained over time. Lastly, the study did not include statistical analysis of the pre-test and post-test results, making it difficult to objectively quantify the extent of knowledge improvement resulting from the intervention.

Suggest Future Research

Future programs should consider involving larger and more diverse participant groups to enhance the representativeness and generalizability of the findings. Incorporating longitudinal follow-up would be valuable in tracking behavioral changes over time and evaluating the sustainability of educational outcomes. In addition, applying quantitative analysis methods is recommended to objectively measure the effectiveness of the intervention. Integrating technology-based tools, such as mobile health applications, may

also expand program outreach, increase participant engagement, and facilitate more continuous health education delivery.

Conclusion

Based on the results of the implementation and discussion, it can be concluded that the community service activity on healthy diet and heart attack prevention education in Pekon Wonodadi was successfully carried out and had a positive impact. This program effectively increased the understanding and awareness of the community, especially in the productive age group, regarding crucial aspects of heart health.

The increase in understanding includes the identification of the early signs and symptoms of a heart attack, the risk factors to be aware of, and the fundamental role of a healthy diet as a primary prevention step. In addition, through demonstration sessions, participants were also equipped with basic knowledge about first aid measures that can be taken in an emergency. This increase in health literacy is an important foundation in the effort to empower the community to independently manage their health and reduce the risk of coronary heart disease in the future.

Community Implication

This initiative demonstrates that even small-scale educational interventions can lead to meaningful changes in community health awareness. Establishing local health ambassadors may help sustain behavioral change and support ongoing prevention efforts.

Acknowledgement

We would like to thank the Research and Community Service Institute and all parties who have facilitated the implementation of this Community Service

Author Contribution

- Sugiarto: Project coordination, manuscript drafting, final review.
- Aisyah Humairo, Adelia Bilqis Afifah, Anis Indri Adiningsih: Literature review, questionnaire design, and data collection.
- Shepia Putri Anggraini, Safitri, Dea Frita Alifia: Community engagement, media preparation, and documentation.
- Renaldi Tajri, M. Prayoga Candra Aulia, Necha Ananda, Galang Sukma: Data analysis, interpretation, and translation support.

Conflict of Interest

The authors declare no conflict of interest related to the implementation or publication of this community service program.

Ethical Clearance

This community service followed ethical principles of voluntary participation and informed consent. Although formal ethics board approval was not required for non-clinical community education, participant rights and confidentiality were fully respected.

Funding

This program did not receive any external funding. It was self-supported by the implementing team as part of academic service obligations.

References

Apriyatmoko, R., & Aini, F. (2020). Remaja Mengenali Serangan Jantung Koroner. *INDONESIAN JOURNAL OF COMMUNITY EMPOWERMENT (IJCE)*, *2*(2). https://doi.org/10.35473/ijce.v2i2.758

Kementerian Kesehatan Republik Indonesia. (2018). *Laporan Riskesdas 2018*.

Kirana, G. R., Nugraheni, R., Purnamasari, V. D., & Shofi, Muh. (2023). EDUKASI DIET SEHAT UNTUK MENGURANGI RESIKO PENYAKIT JANTUNG KORONER PADA SISWA SMAN 3 KOTA KEDIRI. *Jurnal Pengabdian Kita*, *6*(1).

Permatasari, O., & Muhlishoh, A. (2020). PENDIDIKAN KESEHATAN TENTANG ASUPAN DIET RENDAH LEMAK DAN KOLESTEROL DI WILAYAH DI PUSKESMAS GAMBIRSARI SURAKARTA. *INDONESIAN JOURNAL OF COMMUNITY EMPOWERMENT (IJCE)*, *2*(1). https://doi.org/10.35473/ijce.v2i1.522

Putra, A. A. S. M. M., Wedayani, A. A. A. N., & Amalia, E. (2023). Edukasi Penangan Awal Pada Serangan Jantung. *Jurnal Pengabdian Magister Pendidikan IPA*, *6*(4).

Rahayu, S., Subekhi, A., & Astuti, D. (2020). UPAYA MEWASPADAI SERANGAN JANTUNG MELALUI PENDIDIKAN KESEHATAN. *JMM (Jurnal Masyarakat Mandiri)*, *4*(4).

Rahmawati, S. T., Rohman, F., Rosyada, D. P., Ramadhanty, R. A., Hati, S. P., Anggraeni, S. D., Mahzufa, N., Kharis, N. A., Syaifudin, I., Waluyo, D. R. B., & Suparmi, S. (2024). Cegah penyakit jantung koroner dengan CERDIK dan PATUH. *Community Empowerment Journal*, *2*(4), 217–222. https://doi.org/10.61251/cej.v2i4.88

Sesrianty, V., Amalia, E., Fradisa, L., & Arif, M. (2020). Pemberian Edukasi Tentang Pencegahan Hipertensi Di Posyandu Lansia Cendrawasih Bukittinggi. *Jurnal Abdimas Kesehatan Perintis*, *1*(2).

Sinaga, J., Sinurat, L. R. E., & Sipayung, R. R. (2024). Peningkatan Pengetahuan Tentang Pertolongan Pertama Penyakit Serangan Jantung Pada Masyarakat Di Wilayah Kerja Puskesmas Titi Papan. *JURNAL ABDIMAS MUTIARA*, *5*(1).

World Health Organization. (2023). *Cardiovascular diseases (CVDs)*. *Geneva*. WHO. https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds)