



Empowering Rapid Response to Heart Disease in Community Self-Help Efforts At Posyandu Kemuning 1a Sukamakmur Village Ciomas

Nyayu Siti Aminah Lily Elfrieda¹, Yuli Wahyuni^{2,*}, Aas Saádah³

^{1,3} Pharmacy Study Program, Faculty Of Mathematics And Natural Sciences, Pakuan University

^{2*} Computer Engineering Study Program, Faculty of Vocational School, Pakuan University

✉ yuli_wahyuni@unpak.ac.id (Corresponding author's email)

ARTICLE INFO

Article history

Received : 14-2-2025

Revised : 27-2-2025

Accepted : 28-2-2025

Keywords

Empowerment;
Posyandu; Community
Service; Independent
Community; Ciomas

ABSTRACT

The results of the 2022 Service Team questionnaire survey at Posyandu Kemuning 1A Sukamakmur Ciomas Village require regular heart checks, so far the midwife uses a stethoscope and the data is stored using a manual book so that it is inconvenient for patients to do pregnancy control per month. The main purpose of pregnancy checks is to keep the pregnancy healthy, monitor the growth and development of the fetus so that it is detected as early as possible abnormalities of the fetus and pregnant women, so it is necessary to transfer knowledge through socialization activities and mentoring of heart check health training. The outputs produced in this activity are the use of science and technology technology for the community including the use of heart medical records for checking heart disease and research results, optimizing community services, and helping to create peace and comfort in the community and helping to facilitate early heart checks. This activity also resulted in publications in community service journals, articles in several electronic publication media, activity videos, product IPR. This community service implements IKU 2, namely students gaining experience outside the campus and IKU 3 where lecturers carry out activities outside the campus and IKU 5, namely the work of lecturers is used by the community.

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A. INTRODUCTION

Posyandu is the center of community activities in health care and family planning efforts (Harahap, 2021). The objectives of posyandu activities are: (1) reduce infant mortality (IMR), maternal mortality (pregnant women), childbirth and postpartum; (2) cultivate NKBS; (3) increase community participation to develop health and family planning activities and other activities that support the achievement of a healthy and prosperous society; (4) serve as a vehicle for the reproductive movement of prosperous families, family resilience movement and prosperous family economic movement (Arwinda, et al., 2017).



Sukamakmur is a village in Ciomas sub-district, Bogor, West Java, Indonesia. It is located at Jl. Raya Ciapus Sukamakmur No. 2005 Ciomas, Bogor 16610. Sukamakmur Village Government Area consists of 7 RW and 36 RT. With a population of 10,221 people, consisting of 2,567 family heads 5,068 men and 4,853 women. Facilities and infrastructure in this village are: 1 health center, 1 maternity home, 1 polyclinic: 1, Posyandu 1, while the number of medical personnel available and practicing in Sukamakmur Village are Private Doctors 2, Village Midwives 2, Village Cadres: 24 people, TBAs/Paraji 4 people. The lack of posyandu in Sukamakmur Ciomas Village has hampered activities, existence, and physically, especially in providing services to the community, while the number of active cadres is also decreasing, so it is feared that it can significantly reduce the reach of health services in the village (Suryana, 2024). In Sukamakmur Ciomas Village there is 1 Posyandu, namely Posyandu Kemuning 1A which is located at Gg Rambutan, RT.02, RW.01 Sukamakmur Village, Ciomas Sub-district.

Sukamakmur Ciomas Village there is 1 Posyandu, namely Posyandu Kemuning 1A which is located at Gg Rambutan, RT.02, RW.01 Sukamakmur Village, Ciomas District and this Posyandu will be a partner for community service activities. The selection of partners in Sukamakmur Ciomas Village is also because the team has established cooperation, especially in the field of community service, this collaboration was carried out last year, namely 2018-2023 (Wahyuni, et al., 2021). This is the contribution of the Pakuan University team and collaborators through previous research, some of the previous research that has been implemented in community service activities at Posyandu Kemuning 1A is the creation of a website and the development of the Ciomas Village website in services at Posyandu, especially in Sukamakmur Ciomas Village in 2018-2019 (Sugih, et al., 2021) counseling and mentoring on nutrition for pregnant women at Posyandu Kemuning 1A, Sukamakmur Ciomas Village in 2020-2021 service about medical records The upper arm circumference of pregnant women in helping Posyandu data collection in 2022 (Wahyuni, et al., 2022), then the application of research on heart health tools in an effort to help community checks in 2023 (Wahyuni, et al., 2023).

At Posyandu Kemuning 1A chaired by Mrs. Halimah who conveyed several complaints that on average in the community there are many economies from the middle to lower class and many complain about expensive heart checks that make it difficult for the community to anticipate early heart disease which can affect the heart's ability to pump blood effectively, cause blood circulation disorders, and potentially pose a serious threat to one's health and the surrounding community. The lack of knowledge of the community around Posyandu Kemuning 1A in Sukamakmur Ciomas Village regarding heart disease which is still located in a rural area of midwives is also complicated by the large number of people who want to do heart checks which are carried out so far still using a stethoscope both pregnant women and the general public so that if the queue is full it makes it difficult for midwives or doctors in the examination (Faradisa, et al., 2017).

According to data compiled by the World Health Organization (WHO) in 2016, there were about 18 million people worldwide who died from cardiovascular (heart and blood vessel) diseases. About 85% of them are caused by heart attacks and strokes (BKKBN, 2009). Based on data from the Ministry of Health of the Republic of Indonesia, coronary heart disease is one of the leading causes of death in Indonesia (Depkes RI, 1990). Approximately 13% of death cases are thought to be caused by untreated heart disease. Therefore, it is very important

to check your heart health as early as possible, so that heart problems can be recognized early on. That way, the treatment can be done immediately (Depkes RI, 1994).

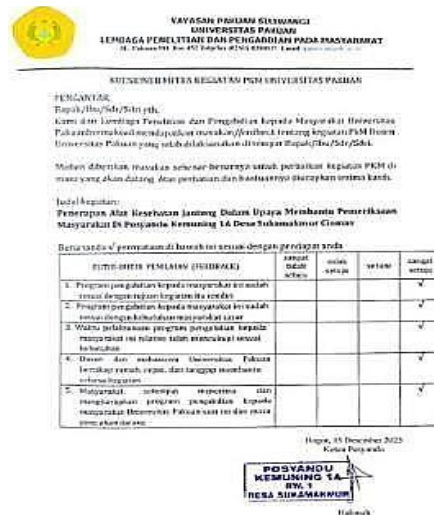


Figure 1. Results of the Questionnaire Request for the Re-conduction of Community Service Activities at Posyandu Kemuning 1A Sukamakmur Ciomas Village

No	Pertanyaan	Pilih Jawaban (Orang)		Persentase					Saran
		Ya	Tidak	25%	50%	75%	100%		
1	Apakah Saudara mengetahui pentingnya layanan masyarakat?	20	2						
2	Apakah anda mengetahui tentang kegiatan layanan yang ada di posyandu?	20	2						
3	Apakah pernah diadakan sosialisasi terkait gizi ibu hamil dan 2000 hari kehidupan?	19	3						
4	Apakah anda paham tentang materi yang diberikan oleh tim pengabdian masyarakat?	20	2						
5	Seberapa paham penguasaan materi yang telah diberikan oleh posyandu terkait gizi ibu hamil dan 2000 hari kehidupan?				2	20			
6	Apakah anda pernah mengikuti pelatihan terkait gizi ibu hamil dan 2000 hari kehidupan?				2	20			
7	Apakah kegiatan pengabdian masyarakat ini penting buat anda?	20	2						
8	Apakah kegiatan pengabdian masyarakat ini bermanfaat untuk anda?	19	3						
9	Apakah ibu anda tertarik terhadap kegiatan pengabdian masyarakat?	18	4						1. Perlu adanya sosialisasi gizi terkait gizi anak-anak. 2. Perlu adanya pemahaman diet jantung. 3. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung. 4. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung. 5. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung. 6. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung. 7. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung. 8. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung. 9. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung. 10. Perlu adanya sosialisasi tentang gizi yang baik untuk kesehatan jantung.
10	Apakah perlu diadakan kembali kegiatan pengabdian masyarakat seperti ini?	20	2						

Figure 2. Results of the Community Service Request Questionnaire on Heart Examination

B. METHODS

Several stages of the method carried out in this PKM activity are:

1. Preparation of Running Tools and Cardiac Applications

In the preparation of tools for heart-related research results, the team will prepare the tools by checking the running of the tools before the mentoring training is held. The application of IoT (Internet of Things) based cardiac medical record model technology involves several important stages to ensure the system functions properly



and safely. The following are these stages: (1) Needs Analysis; (2) System Design; (3) Hardware and Software Development; (4) IoT Integration; (5) Testing and Validation; (6) User Training; (7) Implementation and Monitoring; (8) Repairs and Updates; (9) Data Compliance and Security. By following these stages, the implementation of IoT-based cardiac medical record technology can be carried out effectively and provide significant benefits to the community and Posyandu health services (Hermansyah, et al., 2022).

2. Training and Assistance on the Use of Cardiac Tools and Applications

This activity was carried out through questionnaires and tests on the ability to operate equipment through both written and practical tests. The short-term objective of this activity is to classify the trainees by determining the training materials.

3. Increased Partner Empowerment

One important aspect of this community service is the increase in partner empowerment. To measure this improvement, a survey was given to training participants and socialization participants of the community service activities, and then processed into a graph to measure partners' understanding of heart health science about heart disease and healthy heart.

4. Making Training Videos

Video making contains activities carried out during community service by combining socialization activities and also training in mentoring tools to the community, the video of this activity is published on YouTube media.

5. Publication in Online Mass Media

Outputs in the form of publication of community service results in online mass media, namely articles in electronic mass media published in several online mass media with the aim of publicizing activities carried out by the community service team.

6. National Journal Publication and ISBN Book Creation

In disseminating conceptual results in publication journals, the team publishes service activities by including publications in community service publication journals and making books.

7. Partner Participation in Program Implementation

Partner participation is very important in the correspondence management of community service activities, coordination of participants by the head of the Posyandu, gathering Posyandu cadres, acting as correspondents for filling out questionnaires, filling attendance in activities, and providing a place for socialization activities and training on the use of technology.

8. Evaluation of Program Implementation and Program Sustainability in the Field After the Activity is Completed

After the activities are completed, an evaluation is conducted to ensure that the implementation of the program and its sustainability in the field have achieved the objectives. Evaluations are also conducted to ensure that the application of the technology maximizes its benefits to the community in the health sector and provides important information on further program improvement and development.



C. RESULTS AND DISCUSSION

In this community service, there is a team of 5 people, namely the Head of Service named apt. Nyayu Siti Aminah Lily Elfrieda, M.Farm with the field of medical pharmacy who will be in charge of coordinating with the head of the posyandu and providing socialization about heart disease, community service member 1, namely Yuli Wahyuni, ST., MT, who will be in charge of assisting in providing training in the application of heart tools at the Kemuning posyandu, community service member 2, apt. Aas Saádah, M.Farm assists in the socialization of a healthy heart based on community health independence. In this community service in the community service team there are cross-fields of science, namely the fields of Medical Pharmacy and Pharmaceutical Educational Communication Counseling in collaboration with Computer Engineering, which later it is hoped that this activity will provide enormous benefits both in terms of utilizing science and technology technology for the community, medical records and implementing research results, optimizing community services in helping to create peace, and comfort in social life and making it easier to check the heart early on. In this service, the team was also assisted by 1 secretary who assisted in making RAB and reports by the name of Nur Amalia, 1 technical staff who assisted in questionnaire analysis and 2 students of Pakuan University Pharmacy Study Program named Syifa Nurlyta NPM 066122068 and Wafa Novia NPM 066122084 while the cooperation partner was Posyandu Kemuning 1A Sukamakmur Ciomas Village which was chaired by Mrs. Halimah. This community service implements IKU 2, namely students gaining experience outside the campus and IKU 3 where lecturers carry out activities outside the campus and IKU 5, namely the work of lecturers used by the community.



Figure 3 Initial Coordination with Partners Head of Posyandu Kemuning 1A Sukamakmur Ciomas Village Mrs. Halimah

The application of this socialization and mentoring training, the service team implements the results of research that has been carried out with the research title, namely “Optimization of the IoT-Based Cardiac Medical Record Model to Minimize the Risk of Heart Disorders in Pregnant Women”, how the tool works by reading the Max30100 sensor that detects heart rate and IoT-based oximeter, then designing a heart rate detector that reads through NodeMCU processed data, heart rate readings and oxygen concentration can be displayed. through the Thingspeak web, the output is the result of knowing the input of heart rate and oxymeter so that it is known that the heart rate is normal and not. calculate the heart rate and oxygen concentration. Through Thingspeak web, the output is the result of knowing the input of heart rate and oxymeter so that it is known the condition of normal heart rate and not. calculate heart rate and normal saturation, condition of heart rate and saturation. heart rate and normal saturation, heart rate conditions and oxygen levels in patients, especially pregnant women from the 3rd trimester where the input variables from the pulse sensor, observation in the microcontroller (NodeMCU ESP8266).



Figure 4. IoT-based Cardiac Medical Record Model Optimization Research Results Tool to Minimize the Risk of Heart Disorders in Pregnant Women Which Will Be Used for Community Service at Posyandu Kemuning 1A Sukamakmur Ciomas Village

On this occasion, Mrs. apt. Nyayu Siti Aminah Lily Elfrieda, M.Farm conveyed about the problem of heart disease that often occurs in the community and the occurrence of this disease is classified as cardiovascular disease and is very dangerous if symptoms occur that affect the heart and blood vessels need to be checked in knowing the symptoms early on.



Figure 5. Material by Mrs. apt. Nyayu Siti Aminah Lily Elfrieda, M.Farm

Furthermore, training and mentoring was carried out by Yuli Wahyuni, ST, MT with the number of training participants involving midwives and health workers as well as 2 cadres

of Posyandu Kemuning 1A Sukamakmur Ciomas Village. The training was conducted at Posyandu Kemuning 1A Sukamakmur Ciomas Village. Training activities were carried out within 2 (two) days starting at 09.00-13.00 every day. The results of the training are the skills of midwives and health workers as well as Posyandu Kemuning 1A cadres in using heart measurement tools. The initial stage of training is the introduction of heart tools through tutorial activities, the second stage of training is training on the use of a general description of the operation of the tool, the third stage of training is detailed system training related to cardiac medical recording in the form of a database and how the tool works in automatically calculating normal and abnormal heart tools, the final stage of training is an evaluation for the trainees.



Figure 6. Material by Mrs. Yuli Wahyuni, ST., MT

D. CONCLUSION

This community service has succeeded in achieving its goals and has solved several problems that have been resolved in this activity, namely helping health workers in community services, helping in checking the heart early on to minimize the risk of heart disease, the availability of digital portable tools helps efficiency in the work of health workers in checking the heart, has been given a transfer of knowledge related to the importance of health science about the heart in the world of health, the community service team has also provided insight into heart disease and how to minimize the risk of heart disease, with the training and socialization of the use of heart tools, especially for posyandu cadres and pregnant women and the surrounding community in Kemuning 1A posyandu, they get a lot of understanding about normal and abnormal heart detection tools, helping to improve the quality of performance and excellent service to Posyandu-based communities in Sukamakmur Ciomas Village, with this technology it can help check the heart early on and is free of charge so that it helps the community, especially in order to realize a healthy Indonesian society.

E.ACKNOWLEDGEMENTS

Thank you to the Pakuan University Research and Community Service Institute (LPPM) for funding the Community Service Program with the PKM funding scheme in 2024.



F. AUTHOR CONTRIBUTIONS

Implementation of the activity: Nyayu Siti Aminah Lily Elfrieda, Yuli Wahyuni Article preparation: All community service team Impact analysis: Aas Saádah, Presentation of results: YW, Article revision: YW, Other contributions.

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