

## HEALTH EDUCATION INCREASES KNOWLEDGE OF HYPERTENSION AMONG THE HEALTH CADRES

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### ABSTRACT

**Background.** From year to year, the number of cases of kronis in Indonesia is increasing, and the number of cases of hypertension is at an all-time high. The role of the health cadre is extremely important for the community, supporting health initiatives in both prevention and promotion. This community service aimed to increase knowledge of hypertension among health cadres.

**Implementation Method.** The community service activity was carried out for 2 months, from September 1 to November 10, 2025. There were 29 health cadres participating in the activity, in partnership with the Plombokan Village in Semarang. Health cadres was given health education about hypertension and role of supportive-educative for patients hypertension; 6) guidance and assistance for cadres in implementing health programs aimed at improving the quality of life of patients with chronic diseases in the community.

**Findings.** The level of health cadres' knowledge about hypertension, namely the average knowledge score of cadres, also increased from 70.34 before the activity to 75.86 after the activity. The results of the paired t-test showed a significant p-value = 0.002 ( $\alpha \leq 0.05$ ), suggesting that hypertension health education increased the knowledge of health cadres.

**Conclusion.** Through a combination of several activities in this community service program, cadres showed significant improvement in their knowledge and skills in managing chronic diseases and the Plombokan Village community, thereby improving the quality of life of patients with chronic diseases.

**Keywords:** Health Cadres, Health Education, Hypertension, Knowledge.

### BACKGROUND

Plombokan Village, located in the city of Semarang, is one of the villages with a total population of 8,028 people, with a heterogeneous community in terms of social, economic, and cultural characteristics. Most of the residents work in the informal sector with varying levels of education[1]. These conditions affect the community's lifestyle and awareness of health, resulting in various health problems at the household level, such as low compliance with clean and healthy living behaviors (PHBS), high rates of degenerative diseases, and limited access to accurate health information[2]. According to the 2015 Semarang City Health Profile, the highest number of degenerative disease cases in the entire city of Semarang (not specific to Plombokan sub-district) was hypertension with 29,335 cases, followed by diabetes mellitus with 1,790 cases.

Health cadres who are members of posyandu and community health activities play an important role as the spearhead in supporting government programs in the health

sector[3,4]. However, based on observations and initial discussions with village officials, there are still obstacles to optimizing the role of cadres, including limited knowledge about health promotion, lack of skills in early disease detection, and a lack of innovative activities to improve the quality of life of the community. This has resulted in cadres not being able to fully support residents, especially vulnerable groups such as toddlers, pregnant women, the elderly, and people with chronic diseases.

A prominent health issue in Plombokan Village is the increasing prevalence of chronic diseases, especially hypertension. This disease often goes unnoticed by the community until it reaches a stage of complications, thus requiring early detection and continuous assistance[5]. In addition, unhealthy lifestyles, unbalanced diets such as drinking coffee for hypertensive patients [6], and low awareness of routine health checkups exacerbate the condition[7].

The initial handling of disease symptoms has a significant impact on the future health of the community. Low public knowledge of how to handle early or recurrent signs and symptoms often results in failed disease management[8,9]. Given this situation, efforts are needed to empower health cadres through capacity building, mentoring, and strengthening their role as agents of change in the community[10]. Through counseling, mentoring, and the development of programs based on local needs, such as supportive-educative programs, it is hoped that cadres will be more empowered to provide education, conduct early detection, and encourage behavioral changes in the community towards a healthy lifestyle[11].

In addition to issues at the community level, health cadres as the spearhead of health services in Plombokan Village also face a number of challenges: 1) low knowledge of cadres regarding the management of chronic diseases. Cadres do not yet have adequate understanding of the special needs of clients with chronic diseases, both in medical, nutritional, and psychosocial aspects; 2) the absence of a cadre program that focuses on the treatment of chronic diseases at home. The activities of cadres have so far focused more on health posts for toddlers or pregnant women, while efforts to assist people with chronic diseases at home are still very minimal.

With these various problems, it is clear that Plombokan Village needs community service intervention in the form of empowering health cadres to be more focused on the management of chronic diseases, especially hypertension. The solution offered, based on the analysis of problems found among health cadres in Plombokan Village, is the empowerment of cadres through training, mentoring, and innovative health programs that focus on chronic diseases, especially hypertension. This effort is expected to improve the quality of life of hypertensive patients, strengthen the role of families in care, and maximize the role of cadres as strategic partners in health development.

## **METHOD OF ACTIVITIES**

The method of implementation of the activity provided supportive-educative health cadre counseling and educational materials on hypertension. Supportive and Educative is a support system provided to patients who need educational support with the hope that patients will be able to care for themselves independently. This system is implemented so that patients are able to perform nursing actions after learning[12]. Providing this material to cadres will strengthen their understanding of their role in the community in the prevention,

education, promotion, and rehabilitation of patients with hypertension. The activity partner is Plombokan Village, Semarang, with a target of 29 female health cadres.

The community service activity was carried out for more than 2 months, starting from September 1, 2025, to November 10, 2025. The steps for implementing the activity were: 1) preparation; 2) licensing; 3) formation of a group for improving the quality of life of patients with chronic diseases in the community, with the management structure approved by the partner for the sustainability of the activity program; 4) training of cadres in basic skills related to hypertension in the community, namely preventive, promotive, curative, and rehabilitative; 5) provision of health education to cadres on counseling, information, and education for patients with hypertension; 6) guidance and assistance for cadres in implementing health programs to improve the quality of life of patients with hypertension in the community. To evaluate the success of the program, pre-tests and post-tests were conducted on the knowledge of the role of health cadres and hypertension. Data was analysis used Paired t-test with the significant  $\alpha \leq 0.05$ . In addition, evaluations during the activities were carried out by a team of facilitators who observed the participants' activity levels and gave door prizes to participants who were active during the activities.

## RESULT OF ACTIVITIES

The results of the evaluation of community service activities broadly show that all cadre participants actively participated in the activities, as demonstrated by 100% attendance at each activity, actively listening and asking questions during question and answer sessions. Table 1 shows that the overall female health cadres, with the youngest being 33 years old and the oldest being 62 years old. Most cadres had a high school education or equivalent, totaling 17 people (56.7%), and a small number had a college education, totaling 3 people (10%). Most cadres were housewives, totaling 24 people (80%), and there were cadres who were private employees and retired civil servants, each totaling 1 person (3.3%). On average, they experience as health cadres for 5 years, with a minimum of 1 year and a maximum of 20 years.

Table 1. Descriptive Data Health Cadres, Plombokan Village, Semarang (N=29)

Descriptive Data	Min-Max	Mean $\pm$ Standard Deviasi
Age Cadres (year)	33 – 62	47.83 $\pm$ 7.266
Experience being Cadres (year)	1 – 20	5.17 $\pm$ 4.252

Table 2. Differences in Knowledge of Health Cadres About Hypertension (N=29)

Descriptive Data	Pre-test	Post-test
Min-Max	50 – 90	60 – 90
Mean $\pm$ SD	70.34 $\pm$ 9.056	75.86 $\pm$ 6.823
Analyze Paired T-Test, p-value = 0.002		

Table 2 showed the level of knowledge of health cadres about hypertension. The average knowledge score of cadres also increased from 70.34 before the activity to 75.86 after the activity. The results of the paired t-test showed a significant p-value = 0.002 ( $\alpha \leq$

0.05), indicating that hypertension health education had an effect on increasing the knowledge of health cadres.

Table 3. Differences in Knowledge of Health Cadres About Supportive-Educative (N=29)

Descriptive Data	Pre-test	Post-test
Min-Max	55 – 100	90 – 100
Mean ± SD	83.79 ± 16.565	98.28 ± 3.844
Analyze Paired T-Test, p-value = 0.000		

The average knowledge score increased from 83.79 before the service to 98.28 after the activity. The results of the paired t-test showed a p-value = 0.000 ( $\alpha \leq 0.05$ ), indicating that the supportive-educative service had a significant effect on improving the knowledge of health cadres. The partners and community service team played an active role in every stage of the activity. The final stage, which is mentoring and coaching, will continue to be carried out by the community service team and partners. At the end of the activity, the community service team and partners will conduct monitoring and evaluation, and the activity will end on November 10, 2025.



Figure 1. Documentation of community service activity at Village Plombokan, Semarang

## DISCUSSIONS

### 1. Demographic Characteristics of Plombokan Semarang Health Cadres

All participants in this community service activity were women aged 33-62 years, with the majority aged 41-50 years. According to Hurlock's theory of middle adulthood, individuals aged 40–50 years tend to have emotional stability, good social skills, and a high tendency to engage in community service activities[13]. This is in line with the profile of Plombokan Semarang Village cadres, the majority of whom are in their socially productive phase and are therefore able to carry out cadre duties such as communication, health education, and patient support systems in the community.

Most cadres are housewives. Women who are housewives have more flexible time, are familiar with the social characteristics of the local community, and are more trusted in the community[14]. They are well-known and trusted in the community because they are always present in the household environment. They are often considered an important part of the community because of their role in taking care of the family, helping neighbors, and participating in social activities. This makes their role as health cadres very relevant, especially in family-based promotional and preventive programs[15,16]. The average length of time as a cadre is 5 years, and at least 1 year. The longer a person is in a role, the more their expertise increases, their work efficiency improves, and their sensitivity to local health issues improves. Cadres with up to 20 years of experience demonstrate a strong capacity to run programs, while those with less experience require ongoing mentoring and training. In addition, given the age differences among cadres, junior cadres are mentored by senior cadres. Senior cadres also play a role in the regeneration of the next program.

A high school education does not hinder the role of cadres. The level of education affects cadres' ability to receive information, analytical skills, and adaptation to health innovations. Cadres with a high school education are quite capable of understanding basic public health concepts, but find it difficult to understand more complex health concepts. This is due to the fact that a higher level of education makes it easier to absorb and process information critically, which is very important for their function as information disseminators and health facilitators in the community[17]. Only 10.3% of cadres are highly educated, which is not a major obstacle because the duties of cadres are more practical in nature. These community service activities provide a lot of training material that is delivered in a simple manner so that continuous capacity building can close the competency gap. However, cadres with college education have the potential to become companions, mentors, or drivers of innovation within the cadre group.

### 2. Changes in Cadres' Knowledge about Hypertension and Supportive-Educative

The results of this community service activity effectively increased cadres' knowledge about hypertension and supportive-educative, namely a change in the average hypertension knowledge score before and after the activity of 5.52. The change in the average score of cadres' knowledge about supportive-educative before and after the activity was 14.49.

Jean Piaget & Ausubel's cognitive learning theory emphasizes that new knowledge is easier to understand when presented in a structured manner and integrated with existing knowledge[18]. In community service activities, the material was delivered in stages and was relevant to the cadres' duties, resulting in assimilation (incorporating new information)

and accommodation (adjusting old schemas to new information)[19]. Community service activities in the form of counseling, hands-on practice, and group discussions were very effective in improving the understanding of health cadres. The combination of several outreach methods makes the material easier to absorb than lectures alone[20]. In addition, health cadres receive material that suits their needs and the characteristics of the Plombokan Semarang community, namely the high prevalence of chronic hypertension[21,22]. Because the material is directly used in their daily tasks, their motivation to learn increases, making it easier to gain knowledge.

During community service activities, cadres actively participated by asking questions directly to the facilitators/presenters. This reduced doubts, clarified understanding, and increased confidence in carrying out tasks. High confidence strengthens the retention of knowledge among cadres[2,23]. In addition, the cadres already have years of experience at the integrated health service post (posyandu). When given health counseling/education, they quickly understand because the context is familiar to them. They can connect theory with experience, and there are real case examples that facilitate mastery of the material.

## **CONCLUSION AND SUGGESTION**

The LPK FORKOM community service activities in Plombokan Village were carried out from September 1 to November 30, 2025, involving 29 health cadres. The activities included coordination meetings, activities 1 and 2 in the form of health training and education, and activity 3 in the form of guidance and assistance, with the active participation of all cadres. Most of the cadres were women aged 41-50 years old, with a high school education background, indicating that they could play an effective role in health communication and education in the community. The cadres' experience varied, with an average of 5 years, which contributed to the effectiveness of the health program. The evaluation results showed a significant increase in the cadres' knowledge and skills regarding hypertension and supportive-educative. Through a combination of several activities in this community service, the cadres showed a significant increase in knowledge and skills. The overall activities supported the strengthening of the capacity of health cadres at the local level.

Suggestions that can be made:

1. For the village apparatus of Plombokan Semarang  
Support the sustainability of health programs by allocating village funds for advanced training activities, creating village policies that support chronic disease prevention by establishing community-based Healthy Village programs, and encouraging routine health checkups for villagers with risk factors.
2. For local health centers/health offices  
Conduct regular supervision and strengthen cross-sector coordination through regular meetings with health centers and village officials, religious leaders, youth organizations, PKK, and community leaders to monitor the success of village health programs.
3. For health cadres in Plombokan Village, Semarang  
Conduct routine post-training practices by conducting home visits and providing simple health education to the community, performing diabetic foot examinations during health posts, and continuously developing knowledge and skills, such as participating in additional training from health centers and other universities.

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