

PREVENTION AND CONTROL OF NON-COMMUNICABLE DISEASES HYPERTENSION WITH COMMUNITY EMPOWERMENT IN BUMIWANGI VILLAGE IN 2024

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ABSTRACT

Hypertension is a non-communicable disease that is a public health challenge in Indonesia, including in Bumiwangi Village. Low public awareness about the prevention and management of hypertension increases the risk of serious complications. This community service program aims to empower health cadres through training and education for the community on early detection and control of hypertension. The methods used include situation analysis, interviews, observations, problem identification, and interventions in the form of counselling and training of health cadres using the Integrated Service Post for Non-Communicable Diseases approach. This activity was carried out through collaboration between students, health workers, and village government. The evaluation results showed an increase in community knowledge and awareness of risk factors and better management of hypertension. This program is expected to increase community awareness and participation in efforts to prevent and manage hypertension in a sustainable manner.

Keywords: community empowerment; hypertension; health cadres; health education; non-communicable disease prevention

INTRODUCTION

Hypertension, as one of the non-communicable diseases (NCDs), remains a major challenge in the global health system, including in Indonesia. This condition is known as the "silent killer" because it often presents no initial symptoms, yet it can lead to serious complications such as stroke, coronary heart disease, kidney failure, and even sudden death. The latest data from the 2023 Indonesian Health Survey (SKI) recorded a hypertension prevalence of 30.8% among the population aged ≥ 18

years in Indonesia. Although this figure has decreased from 34.1% in 2018, it still represents a significant health burden. Hypertension not only affects individuals but also causes considerable economic impact due to treatment costs and loss of productivity (Indonesian Ministry of Health, 2024).

Despite the prevalence and known risks of hypertension, awareness and control remain low in many rural areas, including Bumiwangi Village. Although prior research has demonstrated that community-based

interventions and regular health education can reduce hypertension risk (Bachri & Mulyati, 2021; Kumalasari et al., 2022), there is a noticeable lack of programs that focus on empowering local health cadres as the frontline agents of hypertension prevention and control. This presents a gap in existing community health strategies, where the potential of trained health cadres is underutilized, especially in remote or semi-urban regions.

Therefore, this study is significant because it addresses a critical gap by focusing not only on community education but also on strengthening the capacity of health cadres in a rural setting. Empowering these cadres can result in sustained, community-driven efforts in early detection and lifestyle modification, which are proven to be effective in long-term NCD prevention.

Health promotion involves three main components: health education, the creation of health-supportive environments, and advocacy for health-oriented policies. Health education seeks to provide relevant information so that individuals can make informed health decisions. Examples include public campaigns on balanced diets, physical

activity, and the risks of smoking and alcohol consumption.

Meanwhile, creating a health-supportive environment involves providing public facilities such as sports areas or green spaces that encourage healthy living (Nur'aeni, 2024).

In the context of hypertension, health promotion plays a vital role in both prevention and disease control. According to research by Bachri & Mulyati (2021), integrated health promotion interventions, such as community-based counseling and regular blood pressure screening, can reduce hypertension risk by up to 30%. This approach is effective not only in increasing public knowledge but also in changing behavior toward greater health awareness.

Bumiwangi Village, a rural community, faces significant challenges in public health. Low awareness of the importance of regular health check-ups, combined with limited access to information on hypertension prevention, exacerbates the situation. Hypertension, often asymptomatic in its early stages, is commonly only discovered after complications like stroke or heart failure have occurred. This condition is further aggravated by risk factors prevalent in

Bumiwangi, such as high-salt diets, lack of physical activity, smoking habits, and limited awareness of healthy lifestyles.

In this context, village health cadres play a strategic role as a bridge between the community and professional healthcare providers. These cadres are responsible for delivering health information, encouraging healthy behavior, and conducting early detection of disease risks within the community. However, many health cadres still lack sufficient knowledge and skills, especially regarding hypertension. This limitation negatively impacts the effectiveness of their health promotion efforts, resulting in suboptimal hypertension prevention in the community (Ramadhan et al., 2024).

The role of health cadres is especially crucial in communities like Bumiwangi. Acting as health promotion agents, cadres facilitate communication between the public and health facilities. However, their limited understanding of hypertension often hinders effective health education. Research shows that evidence-based and intensive training for cadres can increase their knowledge by up to 45%, which positively impacts public awareness of hypertension. Well-trained cadres can accurately inform the

public about risk factors such as excessive salt intake, sedentary lifestyles, and obesity, while also motivating healthy lifestyle changes (Kumalasari et al., 2022).

In addition to educational roles, the involvement of cadres in monitoring community blood pressure is a strategic step in hypertension prevention and control. Studies have shown that community-based interventions — including blood pressure checks, blood sugar and cholesterol testing, and health counseling conducted by health cadres — can increase early detection rates of hypertension by up to 30%. Therefore, strengthening the capacity of health cadres through structured and continuous training is crucial to support the effectiveness of hypertension control programs at the village level (Sujarwoto & Maharani, 2022).

Community service is one of the pillars of the *Tri Dharma Perguruan Tinggi* (Three Pillars of Higher Education), which include education, research, and community engagement. For the Student Body of Bhakti Kencana University (UBK), community service provides a real opportunity to apply academic knowledge while making a positive impact on society. This program

also serves as a platform to empower students as active and socially conscious agents of change, especially in addressing health issues in rural areas such as Bumiwangi Village.

This community service program aims to train health cadres in Bumiwangi Village on hypertension-related topics, including early detection, lifestyle management, and public education techniques. As part of this effort, Bhakti Kencana University, in collaboration with Sumber Sari Health center and the Bumiwangi Village government, initiated an empowerment-based community service program. This program is designed to educate both health cadres and the general public about hypertension risk factors, prevention strategies, and disease control. Activities include health education sessions, blood pressure monitoring, blood sugar and body mass index measurements, and counseling for at-risk individuals. The program also provides educational media such as pocketbooks, leaflets, and posters to help the community better understand health information.

This initiative is expected to improve the capacity of health cadres to fulfill their roles as community health

facilitators. Through strong collaboration between health cadres, the community, and medical professionals, Bumiwangi Village has the potential to become a model for successful community-level hypertension control.

IMPLEMENTATION METHOD

This community service program was carried out through several stages. The initial phase involved identifying health problems in the Bumiwangi Village area. This began with data analysis, including the collection and review of secondary data from Sumber Sari Health Center. In addition, direct field observation was conducted by visiting key locations such as Posyandu sites, village health posts, and community gathering points to assess environmental and behavioral factors that could contribute to hypertension risks. The team documented observation notes systematically.

To enrich the findings, semi-structured interviews were also conducted with various stakeholders, including local health cadres, village officials, and community members. Respondents were selected using purposive sampling, focusing on individuals who were actively involved in health activities or were known to

have a history of hypertension. This approach ensured that relevant and insightful information could be obtained regarding local health behaviors and program feasibility.

The problem identification stage used the USG (Urgency, Seriousness, Growth) method to prioritize health issues. Hypertension emerged as the top priority due to its high prevalence and the lack of community-level awareness. A root cause analysis using the fishbone diagram method identified low public knowledge as the primary issue. To address this, the team implemented health education and cadre training as the main interventions.

The evaluation method included pre-test and post-test questionnaires to measure changes in knowledge related to non-communicable diseases. These instruments were developed based on validated indicators and analyzed to assess program impact.

Data analysis followed the interactive model of Miles and Huberman (1994), which consists of data reduction, data display, and conclusion drawing/verification. This model allowed researchers to interpret qualitative information obtained from

observations and interviews in a structured manner.

RESULT AND DISCUSSION

This community service activity was part of the "Kencana Mengabdi" program organized by Student Executive Body Of The Bhakti Kencana University Student Family. The implementation in the field was carried out in collaboration with two other student organizations: Student Executive Body Of The Student Family Of The Faculty Health Sciences and the Public Health Student Association. The program was conducted in cooperation with the Health Center and the government of Bumiwangi Village, aiming to work together in identifying solutions and addressing health problems found through both primary and secondary data in the Bumiwangi area.

The implementation of the program followed several key stages: (1) Coordination: Cross-sector and inter-organizational coordination was conducted as a crucial first step in identifying health issues in the local area and to build advocacy for gaining support from both the health center, as the primary healthcare provider, and the village authorities of Bumiwangi. (2) Situation Analysis: Problem

Identification, and Priority Setting A comprehensive analysis was conducted on health-related issues, revealing several significant health problems with relatively high prevalence. Based on this analysis and problem identification, one major issue was selected as the focus (locus) of the community service program. The selected locus, identified through both primary and secondary data, was non-communicable disease—hypertension. Hypertension emerged as the most prevalent health problem, supported by the presence of patient history and many community members suffering from NCDs. The main priority of this community service program, therefore, was to carry out efforts aimed at the prevention and control of hypertension among the people of Bumiwangi Village. (3) Program Implementation: Several activities were carried out as part of the program, including knowledge assessment, community exercise (aerobics), and training for health cadres on hypertension as an NCD. The implementation of prevention and control efforts began with an aerobic exercise session held at the Bumiwangi Village Sports Hall (GOR) involving local residents. This activity aimed to

boost productivity through rhythmic movement, which not only enhances heart function but also increases the body's energy needs. According to Moonti et al. (2022), hypertension-focused aerobic exercises are a form of physical activity intended to increase blood and oxygen flow to the muscles and improve active muscle and cardiac performance.



Figure 1. Gymnastics Activities

Health education activities for non-communicable diseases of hypertension are carried out to provide education and information about non-communicable diseases of hypertension where knowledge is a domain in the formation of a person's knowledge or

behavior. Health education, which is an effort to provide education to the community, is in line with where knowledge will influence behavior towards preventing hypertension (Fakhriyah et al., 2021). Health education was filled by speakers from Bhakti Kencana University Students with the theme of non-communicable diseases in delivering the material, the participants were very enthusiastic in paying attention to the material presented, at the end of the presentation of the material there were several questions given by the speaker related to the theme given so that participants could remember and understand the material presented, for participants who could answer were given a reward as a sign of appreciation for being able to answer questions correctly.



Figure 2. Health Counselling Activities

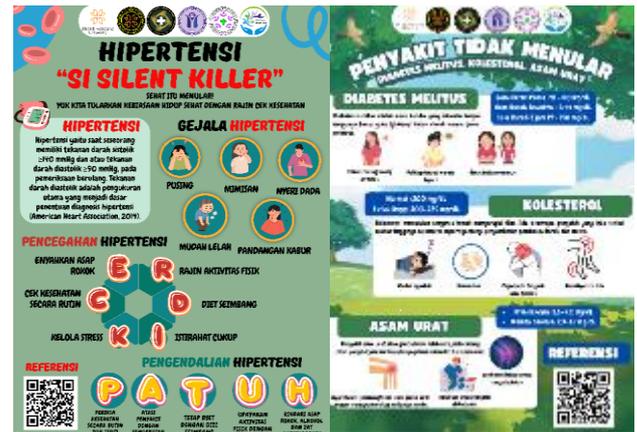


Figure 3. Extension Media

Cadre training, cadre training is carried out by Student Executive Body Of The Bhakti Kencana University Student Family students, Student Executive Body Of The Student Family Of The Faculty Health Sciences and Public Health Student Association in its implementation also collaborated with the Bumiwangi Health Center. Cadre training activities are carried out on health cadres in Bumiwangi Village, training is adjusted to the order of 5 tables of Integrated “Posbinaan” non-communicable diseases integrated service post for non-communicable diseases. In the implementation of training activities, five integrated service post for non-communicable diseases tables are adjusted, the first table is registration where the community or health screening participants are required to bring a photocopy of their

identity / KTP, the second table conducts interviews or data collection on the history of diseases that are currently and or have been started, the third table reduces body mass index which includes height, waist circumference and weight, the fourth table carries out stages of blood pressure checks using a stethoscope used with a manual tensiometer and a digital tensiometer and for the fifth table, namely health education carried out by cadres can use posters or leaflets as a medium for delivering health information.



Figure 4. Health Check Activities

Finally, after conducting a health check for non-communicable diseases in the working area of the Summersari Health Center, precisely in Bumiwangi Village. This activity is one of the preventive and promotive health efforts without eliminating curative or rehabilitative efforts. Early detection

activities or health checks for risk factors for non-communicable diseases or often known as the Integrated Development Post for Non-Communicable Diseases where this activity is one of the community-based health efforts (Directorate of Prevention and Control of Non-Communicable Diseases, 2019). These activities include 5 tables, the first table is registration or registration, the second table is an interview, the third table is measuring body mass index, the fourth table is checking blood pressure and blood sugar, the fifth table is interviewing risky behavior, education on healthy lifestyle behavior and counseling.

The results of this community service program support previous findings that integrated and community-based interventions are effective in improving public knowledge and awareness of hypertension. This is consistent with the study by Kumalasari et al. (2022), which showed that empowering health cadres through training can significantly increase early detection rates and risk reduction in hypertension management. Similarly, Sujarwoto and Maharani (2022) found that community-based health initiatives involving local actors such as health

cadres enhance public participation in disease prevention and control, especially for non-communicable diseases.

One of the strategic components in this program was the implementation of the PATUH approach—an acronym in Bahasa Indonesia for “Periksa kesehatan secara rutin” (regular health check-ups), “Atasi penyakit dengan pengobatan yang tepat” (manage diseases with proper treatment), “Tetap diet sehat dengan gizi seimbang” (maintain a healthy and balanced diet), “Upayakan aktivitas fisik” (engage in physical activity), and “Hindari rokok, alkohol, dan stres” (avoid smoking, alcohol, and stress). The PATUH approach is highly relevant and practical for rural communities like Bumiwangi Village, as it translates complex medical concepts into actionable steps that can be understood and followed by the general public.

The community responded positively to the PATUH framework. During education and training sessions, many participants expressed their appreciation for how the PATUH guidelines helped them visualize a healthier lifestyle in a simple and structured manner. Health cadres also found the PATUH model useful in

communicating messages during home visits and group discussions. These findings suggest that when health promotion is delivered using culturally appropriate and easy-to-understand frameworks like PATUH, the impact on behavior change can be more profound.

Therefore, it is recommended that PATUH be further disseminated not only within Bumiwangi Village but also in other rural communities through collaboration with local health centers and village governments. By integrating PATUH into ongoing health promotion programs, communities can develop a stronger foundation for sustainable hypertension control and NCD prevention.

CONCLUSION

This community service activity is one of the activities carried out collaboratively by the Summersari Health Center, Bumiwangi Village, Family Welfare Empowerment mothers and village health cadres. Implementation in the field begins with situation analysis activities, problem identification, problem prioritization using the Urgency, Seriousness, and Growth methods, finding the root of the problem using the fishbone diagram method, and

alternative problem solving, namely intervention in the community by providing education on non-communicable diseases and training of Posyandu cadres so that they can continue to carry out Integrated service post for non-communicable diseases activities in Bumiwangi Village. In measuring the level of community knowledge, pre-tests and post-tests were carried out on the community.

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