



## THE INFLUENCE OF HEALTH EDUCATION ON THE KNOWLEDGE OF HYPERTENSION IN RIVERBANK COMMUNITIES

Lola Illona Elfani Kausar<sup>1\*</sup>, Gt. Khairunnisa<sup>2</sup>, Muhammad Lukman<sup>1</sup>, Retny Zulhijati Mala<sup>1</sup>, Muhammad Harrisfadillah<sup>1</sup>

<sup>1</sup>School of Nursing, University of Medicine and Health Science, Universitas Lambung Mangkurat, Jl. Veteran Sungai Bilu No.128, Melayu, Banjarmasin Tengah, Banjarmasin, Kalimantan Selatan 70122, Indonesia

<sup>2</sup>Puskesmas Martapura Barat, Jl. Martapura Lama Desa Sungai Rangas Hambuku, Banjar, Kalimantan Selatan 70651, Indonesia

\*[lola.kausar@ulm.ac.id](mailto:lola.kausar@ulm.ac.id)

### ABSTRACT

Hypertension is often called a silent killer because it usually does not show early signs, but can cause serious complications and even death. In Indonesia, the prevalence of hypertension reaches 34.1%, and South Kalimantan is recorded as the province with the highest figure at 44.1% with the working area of the West Martapura Community Health Center being one of the areas with the most cases where the majority of the population lives on the riverbanks. The habit of consuming salted fish with high sodium content and the low public understanding of hypertension are factors that worsen public health conditions. How the influence of health education can increase the knowledge of people living on riverbanks regarding hypertension. This was a quasi-experimental study using a one-group pretest–posttest model. Thirty respondents were selected using purposive sampling. The research instrument was a hypertension knowledge questionnaire in accordance with the theory. Univariate and bivariate analyses were performed using the Wilcoxon test. The majority of respondents were female (77%), had an elementary school education (46%), and worked as housewives (50%). The average knowledge score increased from 79.33 to 86.33 after the intervention. The Wilcoxon test showed a significant increase in knowledge ( $p = 0.010$ ). Health education is effective in increasing the knowledge of hypertension in riverside communities. Regular health education is recommended as a promotional and preventive measure for at-risk groups.

Keywords: health education; hypertension; knowledge; riverbanks communities; wetlands

### How to Cite (in APA Style)

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## INTRODUCTION

Hypertension is a condition where blood pressure increases to a systolic value of  $\geq 140$  mmHg and a diastolic value of  $\geq 90$  mmHg. This disease is called a silent killer because it often does not show clear symptoms, but can cause serious complications such as stroke, impaired kidney function, coronary heart disease, and even visual impairment (Syahputri, Kamisahri & Baharuddin, 2025). According to the American Heart Association (AHA, 2025), blood pressure is considered normal if it is below 120/80 mmHg, while values starting from  $\geq 120/80$  mmHg are included in the pre-hypertension category. Globally, a 2023 WHO report indicates that approximately one-third of the world's population lives with hypertension, and two-thirds of these live in developing countries. Indonesia is among the countries with the highest incidence, with the WHO projecting a continued increase in cases to 1.6 billion by 2025. At the national level, the Basic Health Research (2022) recorded a hypertension prevalence of 34.1%, with South Kalimantan being the province with the highest rate at 44.1%. Banjar Regency is one of the areas with a significant number of sufferers. According to the Banjar Regency Health Profile (2024), there were 37,074 cases of hypertension, with the West Martapura Community Health Center contributing a significant number, at 373 cases. Some of the residents in the working area of the health center live in riverbank areas (West Martapura Health Center Data, 2025).

Riverbank communities are categorized as wetland communities, namely areas where the presence of water is relatively constant or appears periodically (Annisa et al., 2021). Apart from having an ecological function, wetland areas can also cause certain health problems (Kausar et al., 2024; Rachmawati & Herawati, 2022). One of the people's habits is the high consumption of salted fish, which has a high sodium content and has the potential to increase blood pressure (Syarli & Arini, 2021). Interview results indicate that public understanding of hypertension remains limited. Many residents are unaware of the risk factors, signs, or preventive measures for hypertension, and they still consume foods high in salt. This indicates the need for educational efforts in the form of health education. Health education plays a crucial role in increasing knowledge and encouraging behavioral change in the community. Various methods, such as educational videos, leaflets, pamphlets, and direct counseling, can be used to convey information (Sukri et al., 2024; Sari & Firman, 2024).

## METHOD

This study uses a quantitative approach with a Quasi Experimental design of the one group pretest–posttest type to assess changes in respondents' knowledge before and after being given health education. The research population was people with hypertension who lived in riverside areas within the working area of the West Martapura Health Center, Banjar Regency, South Kalimantan. Sample selection used purposive sampling technique with a total of 30 people who met the inclusion criteria. The main instrument was a questionnaire containing 10 questions based on theories about hypertension. Data processing stages included editing, coding, data entry, and data cleaning. Data analysis was carried out univariately to see the characteristics of respondents and bivariately to measure the effect of the intervention. Normality testing was used to determine the choice of statistical test. Because the data were not normally distributed, the Wilcoxon Signed Rank Test was used to determine differences in knowledge before and after the intervention.

## RESULT

The results of this study include the distribution of respondent characteristics, the average increase in knowledge and the influence of health education on respondents' level of knowledge.

Table 1.  
Respondent characteristics (n=30)

Respondent characteristics	f	%
Gender		
Male	7	23
Female	23	77
Level of education		
No schooling	5	17
Elementary school	14	46
Junior high school	6	20
Senior high school	5	17
College	0	0
Employment status		
Not working	2	7
Farmer/ fisherman	3	10
Housewife	15	50
Health cadres	5	17
Businessman	4	13
Retired	1	3

Based on table 1, it can be seen that the majority of the gender is female with 77%, the highest level of education is elementary school at 46% and the majority of jobs are housewives at 50%.

Table 2.  
Average increase in respondents' knowledge (n=30)

Variable	Mean Pretest	Mean Posttest	Average Increase
Level of knowledge	79,33	86,33	7,00

Based on table 2. above, there was an increase in respondents' knowledge regarding hypertension after being given health education of 7.00.

Table 3.  
The effect of health education interventions on respondents' knowledge about hypertension (n=30)

Variable	Mean	Sum of ranks	p-value	N
Pre intervention	79,33	2380	0,010	30
Post intervention	86,33	2590	0,010	30

Based on table 3. above, it can be concluded that there is an influence of health education on the knowledge of riverbank communities about hypertension, indicated by a p-value of  $0.010 < 0.05$ .

## DISCUSSION

Hypertension is a chronic health disorder that often goes unnoticed because it does not cause early symptoms, but has a fairly high risk of complications such as heart disease and kidney disorders (Syahputri, Kamisahri & Baharuddin, 2025). The risk of hypertension generally increases with age (Bulu, Kurniawan & Wijaya, 2021). According to the AHA (2025), blood pressure is considered normal if it is below 120/80 mmHg, while higher values are categorized as pre-hypertension. Globally, the WHO (2023) noted that hypertension affects approximately 33% of the world's population. If not managed properly, hypertension can lead to coronary heart disease, stroke, and even sudden death (Agustina et al., 2023). Food consumption patterns, especially foods with high salt content, are one of the factors that play an important role in increasing blood pressure (Hidayani et al., 2023). In the riverbank communities of South Kalimantan, salted fish consumption is quite common. The high sodium content in salted fish can increase blood volume and increase the workload of the heart (Syarli & Arini, 2021). In addition, wetland areas also have certain health challenges (Kausar et al., 2024; Rachmawati & Herawati, 2022).

Health education is an effective intervention in increasing public understanding of hypertension. The goal of health education is to provide easy-to-understand information so that individuals can adopt healthy lifestyle behaviors (Fakhriyah, Jubaidah & Fitriani, 2021). The role of community health workers is also very important in this process (Kausar, Nursasi & Fitriyani, 2023). This study showed an increase in knowledge after the intervention. The Wilcoxon test also confirmed a significant difference between knowledge before and after education. These results align with several previous studies showing that health education can improve public knowledge about hypertension (Kausar et al., 2023; Sukri et al., 2024; Sari & Firman, 2024). Thus, this research is one of the scientific proofs that health education is important for health workers to carry out in an effort to increase public knowledge about health.

## CONCLUSION

Hypertension is a chronic condition with a high risk of serious complications, including heart disease, stroke, and kidney disorders, and its prevalence continues to increase globally. Lack of understanding and knowledge, particularly regarding high sodium intake, such as salted fish commonly consumed in riverbank communities in South Kalimantan, significantly contributes to high blood pressure. The environmental characteristics of wetland areas further present specific health challenges that can influence the risk of hypertension. Health education has been shown to be an effective intervention in increasing knowledge about hypertension. The significant increase in knowledge following the health education intervention, supported by the Wilcoxon rank sum test, demonstrates that health education by health workers plays a crucial role in improving public health knowledge. Therefore, sustainable, context-based health education programs are crucial for reducing the risk of hypertension in wetland communities.

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