



THE ROLE OF EDUCATION AND HYPERTENSION EXERCISES IN IMPROVING THE HEALTH STATUS OF THE COMMUNITY IN BINJAI BARU VILLAGE, KAB. BATUBARA

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Abstract

Hypertension is a major risk factor for atherosclerotic cardiovascular disease, heart failure, stroke, and kidney failure. High blood pressure carries the risk of premature death, which increases with the increase in systolic and diastolic blood pressure. This high blood pressure is a very serious problem, as it develops gradually over several years and goes undetected. This activity aims to increase knowledge about hypertension and the community can do hypertension exercises independently to control blood pressure. This research is a quasi- experimental which is experimental in nature. The design used was pre-test and post-test to assess community knowledge before and after counseling. Based on the results of pre-test and post-test conducted with 62 participants, it is known that there is an increase in knowledge where 53 people have good knowledge and 9 others still have less knowledge. The implementation of community service activities went smoothly. It is recommended for the community to routinely check blood pressure to the health center, take medicine regularly, and do hypertension exercises at least 2x a week.

Keywords: Blood Pressure, Hypertension, Hypertension Education, Hypertension Exercise

Introduction

Binjai Baru Village is one of the villages in Datuk Tanah Datar Sub-district, Batubara Regency, North Sumatra Province which has an area of 285 hectares. Geographically, Binjai Baru Village is located adjacent to Sei Muka Village in the north, Bangun Sari Village in the south, Sei Bejangkar Plantation Village in the east, and Karang Baru Village in the west. Binjai Baru Village consists of 9 hamlets, namely Hamlet I Simple Island, Hamlet II Sedayu Island, Hamlet III Sidodadi, Hamlet IV Purwosari, Hamlet V Asahan Jaya, Hamlet VI Ilir, Hamlet VII Pasir-Pasir, Hamlet VIII Mekar Baru, Hamlet IX Ilir Jaya. With a total population of 1,549 families with 4,40 people consisting of 2,474 men and 2,366 women.

Public health issues are still a concern for the government of Binjai Baru Village. Hypertension is the highest priority health problem in Binjai Baru Village. Based on the human category, the incidence of hypertension in Binjai Baru Village is caused by age, stress, frequent anger, hereditary diseases, and lack of knowledge about hypertension. The behavior of people who have smoking habits, the elderly posyandu that is less attractive, the lack of public interest in changing PHBS in the household, and the lack of public awareness of health promotion about hypertension also trigger the occurrence of hypertension in Binjai Baru Village.

Hypertension is a major risk factor for atherosclerotic cardiovascular disease, heart failure, stroke, and kidney failure. High blood pressure carries the risk of premature death, which increases as

systolic and diastolic blood pressure increase. This high blood pressure is a very serious problem, as it often develops gradually over several years and goes undetected (Pratiwi, 2020). Hypertension (high blood pressure) occurs when the pressure in the blood vessels is too high (above 140/90 mmHg). This condition is common but can become serious if left untreated. People with high blood pressure may have no symptoms. The only way to find out is to measure blood pressure (WHO, 2023).

Hypertension is the leading cause of death worldwide, with essential hypertension accounting for 90-95% of cases. Based on the 2023 Indonesian Health Survey (IHS) and the 2011-2021 Non-Communicable Disease (NCD) Cohort Study, hypertension is the fourth highest risk factor for death in Indonesia at 10.2%. The 2023 IHS data shows that 59.1% of the causes of disability (vision, hearing, walking) in the population aged 15 years and over are acquired diseases, and 53.5% of diseases are caused by non-communicable diseases, especially hypertension (22.2%) (Kemenkes, 2024). Based on data from the Ministry of Health's Research and Development Center in North Sumatra Province, people with hypertension account for 6.7% of the total population in North Sumatra, which means 12.42 million people spread across various districts (Susanti, Novi, 2020).

Rural areas generally have poorer access to health information and education than urban residents. Promotive and preventive efforts are needed to increase public awareness about early detection through regular blood pressure monitoring and compliance with regular medication use. This measure is considered a form of hypertension control by reducing the number of cases, complications, and deaths due to hypertension (Mulyani Adi Astutiama et al., 2022).

Therefore, blood pressure checks, hypertension exercises, and counseling are needed to improve public health. By providing counseling on the definition of hypertension, a balanced diet to prevent hypertension, symptoms and countermeasures, checking blood pressure, and doing hypertension exercises can control blood pressure in the community of Binjai Baru Village.

Method

This research is a quasi-experimental which is experimental in nature. The design used was Pre-test and Post-test to assess community knowledge before and after counseling. The methods used in the implementation of this activity are lecture or counseling methods with banner stand media, checking blood pressure with a sphygmomanometer, and practicing hypertension exercises. With the implementation of this program, it is hoped that it can increase the knowledge and understanding of the community about hypertension and can provide additional information about hypertension and light activities such as hypertension exercises in an effort to prevent it.

The initial phase of the intervention included an initial evaluation through blood pressure checks of all participants, followed by the implementation of an exercise program specifically designed to manage hypertension. As a complement, in-depth education on hypertension, ranging from basic concepts to prevention strategies, was provided in the hope of improving participants' understanding of their health condition. This activity was held on August 11, 2024 at the Binjai Baru Village Field. The target of this activity is the community of Binjai Baru Village. The data obtained from the results of the study will then be processed and analyzed to determine the difference in knowledge about hypertension before and after counseling. This research data analysis uses univariate and bivariate analysis with dependent t-test or Paired Sample T-Test at 95% confidence level.

Results

3.1 Table

Table 1. Respondent Characteristics

Characteristics	N	%
Gender		
Man	18	29
Woman	44	71
Ages		
26-45	30	48,4
45-65	32	51,6

Based on table 1, it is known that most of the participants in this hypertension counseling and gymnastics activity were women as many as 44 people with a percentage of 71% and the majority of elderly people aged 46 years - 65 years as many as 32 people with a percentage of 51.6%.

Table 2. Blood Pressure Overview

Category	N	%
Normal	1	1,6
Pre-Hypertension	26	41,9
Hypertension level 1	24	38,7
Hypertension level 2	11	17,7

Based on table 2, the results of blood pressure measurements show that most respondents experienced pre-hypertension with blood pressure measurements of 120/80 mmHg - 139/89 mmHg as many as 26 people with a percentage of 41.9%, followed by respondents who experienced grade 1 hypertension with measurement results of 140/90 mmHg - 159/99 mmHg as many as 24 people with a percentage of 38, 7%, then respondents who experienced grade 2 hypertension with blood pressure measurements > 160/100 mmHg were 11 people with a percentage of 17.7%, and respondents who had normal blood pressure with blood pressure measurements <120/80 mmHg were 1 person with a percentage of 1.6%.

Table 3. Pre-Test And Post-Test Results

Category	Pre-test	Post-test
Good Knowledge (answer 6-10 questions correctly)	27	53
Lack of Knowledge (answer <6 questions correctly)	35	9
Sig.	.000	

Based on table 3, the distribution of knowledge level about hypertension before and after counseling. Before counseling respondents had less knowledge as many as 35 people and good knowledge as many as 27 people. Whereas after counseling respondents had good knowledge as many as 53 people and less knowledge as many as 9 people. This shows that respondents who can answer questions about hypertension with the correct answers increase after attending counseling.

Discussion

Based on the results of the analysis that showed a high prevalence of hypertension in Binjai Baru Village, accompanied by a low level of community knowledge about this disease and a lack of understanding of hypertension exercises, an intervention was carried out in the form of a health education program and hypertension exercise training. Before starting the program, all participants had their blood pressure checked.



Image 1. Documentation of Blood Pressure Check

In addition to age, gender also has a significant influence on the risk of developing hypertension. This is in line with previous findings, where the majority of hypertension exercise participants in this study were female (Yantina & Saputri, 2019). Men generally have a higher risk of developing hypertension than women. However, the risk of hypertension in women, especially after the age of 45, is also significant. In the age range of 45-64 years, the risk of hypertension between men and women tends to be balanced (Mulyani Adi Astutiatmaja et al., 2022).

After checking blood pressure, the community then carried out hypertension exercises. Hypertension exercise is a structured physical exercise program specifically designed for individuals with hypertension. The duration of the exercise is generally 20 minutes and consists of three phases: 5 minutes of warm-up, 10 minutes of core exercises, and 5 minutes of cool-down. The mechanism of action of this exercise is to dilate blood vessels, thereby lowering blood pressure and reducing body fat mass. With consistent practice, the elasticity and health of blood vessels can be maintained, thereby significantly improving the quality of life of hypertensive patients. (Harmilah & Hendarsih, 2019).



Image 2. Documentation of Hypertension Exercise

After carrying out hypertension gymnastics, health counseling on hypertension was carried out by measuring the level of public knowledge about hypertension, before hypertension counseling the level of public knowledge was still very low, indicated by the community not being able to fully answer the questions asked. However, after counseling on hypertension, the level of knowledge has

increased, this is indicated by the fact that the community has been able to answer the questions given.



Image 3. Documentation of Hypertension Counseling

The difference in knowledge before and after health counseling regarding hypertension, based on the results of the Dependent T-Test test, it was found that the p-value was 0.000 or <0.05 , which means that at 5% alpha, there was an average difference between measurements before counseling and after counseling. Based on the test data above, it shows that the hypothesis can be accepted because it has been proven that there is an analysis that shows a meaningful difference from each variable tested. Information obtained from counseling has a direct impact on increasing people's knowledge about hypertension. Significant differences between pre- and post- counseling results indicate the effectiveness of the program in changing community cognition.

This increase in knowledge is expected to trigger health-oriented behavioral changes, such as improved diet, increased physical activity, and adherence to medication, thus contributing to the prevention and control of hypertension. This finding is in line with the results of previous studies that showed a significant increase in participants' knowledge after attending counseling. This can be explained because most participants already had a basic understanding of the material presented, so the counseling served as a reminder and reinforcement of existing information (Asda & Syarifah, 2019).

The use of a digital tensimeter in measuring blood pressure in the Binjai Baru Village community provides an accurate picture of their health condition. The data obtained can be used as a basis for motivating the elderly to pay more attention to diet and increase physical activity, in line with the counseling material that has been delivered. The enthusiasm of the participants in participating in this activity shows an awareness of the importance of maintaining health. Similar activities have previously been carried out by (Rahmawati et al., 2019) in Wonoasri Village, Kediri, East Java, which shows that regular blood pressure monitoring, accompanied by interactive counseling, is an effective step in increasing public awareness of hypertension.

The implementation of this activity ran smoothly due to the support of various parties, especially the village government who gave free time to the team to carry out activities. The enthusiasm of the community also supported the success of this activity, seen from the many questions asked by the community in the question and answer session showing the community's curiosity in this health counseling activity on hypertension.

Hypertension counseling and blood pressure checks have also been carried out by (Asda & Syarifah, 2023) at the Madania elderly social home, based on the results of the activities carried out, it shows an increase in the knowledge and understanding of the elderly about the material provided, namely most participants can correctly answer the evaluation questions given appropriately and are able to re-explain the material that has been conveyed even with their own language and understanding.

Conclusion

The implementation of hypertension counseling and hypertension exercises in the community can increase community knowledge about hypertension and hypertension exercise training that is demonstrated can increase community knowledge and ability to independently perform hypertension exercises. Based on the results of the pre-test and post-test conducted with 62 participants, it is known that there is an increase in knowledge where 53 people have good knowledge and 9 others still have less knowledge. The implementation of community service activities runs smoothly. It is recommended for the community to routinely check blood pressure at the Puskesmas, take medicine regularly and do hypertension exercises at least 2x a week.

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