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## Empowerment of Coastal Communities in Sungai Cuka Village in Hypertension Prevention

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### ABSTRACT

Hypertension is a degenerative disease that needs to be watched out for. Hypertension must be treated immediately because it can cause complications such as stroke and coronary heart disease which are the highest causes of death. Hypertension is often referred to as the silent killer because hypertension sometimes has no symptoms. The incidence of hypertension in Sungai Cuka Village is caused by several factors such as lack of physical activity, consumption of lots of salt-containing foods, and the geographical conditions of the people who are on the coast resulting in a greater potential for hypertension to occur. In the community diagnosis through a survey of the residents of Sungai Cuka Village, it was found that the priority health problem in the village was hypertension. So that community empowerment is carried out in the form of anti-hypertension gymnastics, counseling and distribution of posters. The data analysis used is univariate and bivariate. Evaluation of community empowerment is carried out using pre-test and post-test media for counseling and posters, while for exercise it is carried out by checking blood pressure before and after community empowerment is carried out. From the results of the evaluation, it was found that there was a difference in the average knowledge and blood pressure before and after the intervention, meaning that there was an increase in knowledge and a decrease in people's blood pressure after community empowerment was carried out. Based on field findings, it is known that 87.9% of the public have seen and read health education posters and 81.8% understand the contents of the posters that have been presented.

**Keywords-** Hypertension, Coastal, Community, Empowerment.

### CITATION OF THE ARTICLE



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## I. INTRODUCTION

Hypertension is one of the degenerative diseases that need to be watched out for [1]. Symptoms of hypertension that arise can be different, even sometimes people with hypertension have no complaints. Hypertension is a disease of high blood pressure in which a person has systolic blood pressure  $\geq 140$  mmHg and or diastolic blood pressure  $\geq 90$  mmHg, on repeated examination. Often people with hypertension do not feel any symptoms that arise when they are affected by hypertension, this can cause complaints when there have been specific complications in organs such as the brain, eyes, kidneys, heart, blood vessels, or other vital organs [2].

The World Health Organization (WHO) states that hypertension attacks 22% of the world's population. Hypertension is also the cause of death with a rate of 23.7% of the total 1.7 million deaths in Indonesia in 2016 [3]. The prevalence of hypertension in Indonesia based on Riskesdas 2018 data is 34.1%. Meanwhile, the prevalence of hypertension in South Kalimantan is 44.3%. Based on information from the Tanah Bumbu Health Office, in 2019 the Satui Health Center occupied the first position with 10,436 hypertensive patients. These results are hypertensive events based on the results of blood pressure measurements in Indonesian people aged 18 years and over [4].

In the community diagnosis activity by conducting a survey to the homes of Sungai Cuka Village residents which took place door to door, it was found that the priority of health problems in the village was Hypertension, from 126 respondents there were 34 respondents (27%) diagnosed with hypertension. The incidence of hypertension in Sungai Cuka Village is caused by several factors, namely the physical activity of the community which is less especially housewives, the consumption of many foods containing salt such as salted fish, and the geographical conditions of people on the coast allow people to consume seafood which results in greater potential hypertension to occur. Physical activity is one way to keep the body healthy. Individuals who rarely do physical activity have a risk factor of 30-50% of hypertension than those who are active in physical activity [5]. Many foods that contain salt are also a risk factor for a person developing hypertension because salt absorbed into blood vessels results in water retention, so that blood volume increases. High salt intake will cause excessive production of natriouretic hormones which will indirectly increase blood pressure [6].

Empowerment that can be carried out in the community is like hypertensive gymnastics to increase physical activity. Antihypertensive gymnastics certainly aims to be able to train and encourage the work of the heart to work optimally so that it has an

impact on reducing blood pressure [7]. In addition, health counseling is also one of the effective efforts to increase knowledge so that the community can prevent complications regarding hypertension, from counseling activities, the public can also find out which foods are good for consumption in preventing hypertension and risk factors for hypertension [8]. Another community empowerment carried out is by poster media with the use of clear writing and accompanied by images so as to arouse reader interest and facilitate understanding of information. This poster will also be posted in public places so that people are always advised about hypertension and can read back the information listed [9].

Based on this background, to prevent the community from hypertension, community empowerment carried out in empowerment activities for the community in Sungai Cuka Village is health counseling, hypertension gymnastics, and the distribution of educational posters.

## II. MATERIALS AND METHODS

The total number of families in Sungai Cuka Village is less than 90 families. As for the sample obtained in this study amounted to 39 households. However, from the results of the team's listing activities, only 28 families were included in the inclusion criteria. The implementation of community empowerment activities with the theme "Prevent Hypertension as Early as Possible for a Healthier and Productive Life" with the target of the activity is residents of Sungai Cuka Village, Satui District, Tanah Bumbu Regency which will be held from July 20-August 22, 2022. The residents who participated in this activity were those diagnosed with hypertension, which was around 34 people. Community empowerment is carried out in the form of antihypertensive gymnastics, counseling and poster distribution. In the implementation of community empowerment, several stages are carried out, namely:

### 1. Planning or Preparatory

#### a. Stage Performing Permissions

Before the implementation of the activity, the group carried out permits to Sungai Vinegar Village, Sungai Vinegar Village Midwives, and Sungai Cuka Village Heads related to community empowerment plan activities, namely counseling with the theme "Prevent Hypertension as Early as Possible for a Healthier and Productive Life". As for preparing the licensing letter, it is assisted by the supervisor and UP-PBL.



Figure 1. Discussion between the PBL team to village officials and village midwives to carry out permits

### b. Record the number of goals

Prior to this PBL II activity, the group conducted a survey of the Sungai Vinegar Village community, which would be used as targets and participants in counseling activities. Based on a survey that has been conducted from 126 respondents, the most common disease was hypertension, there were 34 respondents (27%).

### c. Survey and Licensing of Community Empowerment

Sites Before carrying out counseling activities, the group surveyed the place to be used for the event, which was based on the direction of village officials, a place that allows counseling and gymnastics to be held, namely the beach stage. After conducting the survey, the group licensed the head of Sungai Cuka Village to carry out extension activities.

## 2. Implementation Stage and Process

On July 29, 2022, invitations were distributed to several residents who were targeted for community empowerment. Community empowerment activities were carried out on July 30, 2022. The plan of extension activities is as follows:

- a. Counseling participants register
- b. Feeding consumption
- c. Hypertensive gymnastics
- d. Fill out the pre test
- e. Poster distribution
- f. Material submission
- g. Post test filling

## 3. Evaluation Phase

The evaluation stage is divided into 3, namely:

### a. Input Evaluation

This evaluation is useful for decision makers to determine whether the program will be discontinued, improved, modified, expanded, or improved. Input in the implementation of this community empowerment activity is the availability of facilities and infrastructure in the implementation of community empowerment and the availability of human resources.

### b. Process Evaluation

Process evaluation measurement is directed at how far the activities carried out in the program have been carried out according to plan. Process evaluation is carried out during the activity. Short-term evaluation is carried out by giving questionnaires through a pre-post test.

### c. Output Evaluation

Output evaluation is carried out after the program is completed to determine the output, effect or impact of the program whether it is in accordance with the previously set targets. The output of counseling activities is to conduct pre-test and post-test to counseling participants by comparing the results of pre-test scores and post-test scores. To find out the output of gymnastics activities is to compare blood pressure results before and after gymnastics, and for posters, namely by looking at the results of questionnaires that have been distributed.

## III. STATISTICAL ANALYSIS AND GRAPHICAL PRESENTATION

This bivariate analysis was performed to compare the average before and after hypertension education. The test used is the paired T test. However, if the data is abnormal, it does not meet the paired T test, the Wilcoxon test is used. Based on the results of the data normality test, it was found that the data was not normally distributed because the sig values (0.00 and 0.006) < 0.05 so that the test carried out was the Wilcoxon test. The Results of the analysis using the Wilcoxon test with the hypothesis:

H0: There is a relationship between health counseling and increasing public knowledge about hypertension

H0: There is a relationship between antihypertensive exercise and lowering blood pressure in people with hypertension

H0: There is a relationship between the spread of hyperthesis posters and increased public knowledge about hypertension.

## IV. RESULTS

The intervention activity was carried out on July 30, 2022. Before doing gymnastics, counseling and distributing posters, residents are asked to register and check blood pressure. Furthermore, residents were directed to the field to take part in hypertensive gymnastics activities. After carrying out hypertension gymnastics activities, residents were directed to the stage and filled out the hypertension pre-test material. After filling out the pre-test has been completed, then residents are directed to listen to counseling about hypertension. Then fill out a post-test and are given hypertension education media in the form of leaflets. The implementation of community empowerment activities, especially on community knowledge, will be measured using pre-test and post-test conducted before and after hypertension counseling to find out whether their knowledge has increased and capture the material that has been delivered. The following are the results obtained for changes in knowledge from the pre-test and post-test results.

### 1. Univariate Analysis

Univariate analysis is carried out to get an overview of knowledge. The number of hypertension questionnaire questions for knowledge is 10 questions which have the following percentages: Based on field findings, it is known that from 30 respondents who conducted the pre-test, there were 22 respondents who experienced an increase in scores on the post-test (73.3%) Based on field findings, it is known that there are still many people (50%) who do not know about the attachment between the incidence of hypertension in parents will potentially reduce the condition to their children. Because the pre-test value and post-test value are not normally distributed, the test is continued with the Wilcoxon Rank test. The following are the results of descriptive analysis on pre and post-test values. The average score on the pre-test was 69.00 with the lowest score of 10 and the highest score of 90. While in the post test the average score was 82.67 with the lowest score of 50 and the highest value of 100.

Average systolic blood pressure decreased after gymnastics, from 125 mmHg to 120 mmHg. Likewise, diastolic blood pressure from 79.1 mmHg to 71.81 mmHg. These results are an early indication of the difference in hypertensive gymnastics to reduce blood pressure. Based on field findings, it is known that most of the 29 respondents (87.9%) have seen and read health education posters that have been distributed in the Sungai Vinegar Village area. This is because posters are distributed evenly in public

places in the region. Based on field findings, it is known that most of the 27 respondents (81.8%) understand the content of the posters that have been presented.

### 2. Bivariate Analysis

Based on the results of the data normality test, it was found that the data was not normally distributed because the sig values (0.00 and 0.006)  $< 0.05$  so that the test carried out was the Wilcoxon test. Based on the results of Wilcoxon's output, the results of sig values of  $0.00 < 0.05$  were obtained, the decision was  $H_0$  rejected, which means that there was a difference in the mean before and after hypertension education. The next test is a paired t test for blood pressure before and after gymnastics because the data is normally distributed. The test results can be seen in paired t tests on systolic blood pressure obtained p-values of  $0.026 < 0.05$  which means there is a significant difference between hypertensive gymnastics and systolic blood pressure levels. A t value of 2.467 was greater than the t table (2.145) which showed a significant difference between hypertensive exercise and systolic blood pressure. Based on statistical tests in pairs of t tests on diastolic blood pressure, p-values of  $0.001 < 0.05$  were obtained, which means that there is a significant management between hypertensive gymnastics and diastolic blood pressure levels. A t value of 4.235 was obtained greater than the table t value (2.145) which showed a significant difference between hypertensive gymnastics and diastolic blood pressure levels.

## V. DISCUSSION

Health counseling is one effective way to increase knowledge because counseling provides information that people previously did not know and leaflets can also allow people to reread while listening to presentations [8]. This is in line with sacred research in 2020 stating that there is a significant influence between counseling and power points with the level of knowledge because power points have several advantages including being able to produce better visual effects and attractive presentation so that it will be more stimulating to know more about the information provided [10].

Hypertensive gymnastics is one sport that can increase blood flow and oxygen supply to the muscles, especially the heart muscle. So by doing sports such as gymnastics regularly can make blood vessels more elastic so that it can lower blood pressure [11]. Previous similar studies on the benefits of gymnastics on elderly fitness were able to show that gymnastics can affect not only pulse stability, but also blood pressure, respiratory and immunoglobulin

levels, with statistical analysis test results for the systolic blood pressure category p-value 0.02 meaning  $a < p = 0.05$  meaning there was a difference in blood pressure between the elderly in the treatment and control groups [12].

Apart from counseling and hypertension gymnastics provided, posters were also distributed evenly in public places in the region. In addition to health counseling, poster media is also an effective way to provide education because posters are a combination of striking visuals, accompanied by relevant images that attract attention so that people can be interested in seeing the contents of the poster [13]. This is also because poster media can provide information that can be easily understood and easy to remember. Poster media can also provide a good stimulus to the sense of sight, besides that the spread of posters in the community can independently make people read information and find out more [13].

## VI. CONCLUSION

Community empowerment is carried out in the form of hypertension gymnastics, counseling on the topic of hypertension, and education through counseling and print media. Based on the community empowerment activities carried out, an evaluation was carried out with *pre and post test instruments* so that it was known that there was an increase in public knowledge about hypertension after counseling. As for the people of Sungai Cuka Village, especially patients and those at risk of hypertension, they are expected to continue to participate in hypertension gymnastics activities and add and apply the knowledge they have gained. Village officials and health workers are expected to facilitate the community in follow-up efforts to empower the community and be more active in providing information or counseling and providing services for early detection of hypertension by checking blood pressure routinely to the community so that the reduction in the incidence of hypertension can be maximized.

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