

## Hypertension Education and Blood Pressure Screening

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### ABSTRACT

Hypertension is a condition when blood pressure has increased abnormally or exceeds the limit of  $\geq 140/90$  mmHg. Lack of knowledge about the problem of hypertension for the elderly affects the perception of the elderly in responding to the problem of hypertension suffered. Therefore, providing counseling and blood pressure screening in the elderly population is relevant given that hypertension is a health condition that is often faced by the elderly. This service program aims to help increase knowledge about the prevention of hypertension in the elderly. This service activity includes counseling on hypertension and blood pressure screening, including the definition, diet, prevention, and control associated with hypertension. Evaluation was carried out through discussion and question and answer sessions related to hypertension material. The implementation stage of the activity began a week before counseling by conducting a survey and assessment, followed by analysis, intervention, implementation, and evaluation reporting. This counseling was carried out during elderly posyandu activities in Watugajah VI Padukuhan, using media such as PowerPoint presentations and leaflets. The results of the counseling showed an increase in elderly knowledge related to hypertension material, which was reflected in active participation in the question and answer session.

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## 1. INTRODUCTION

Still the leading cause of premature death worldwide, hypertension or high blood pressure is a condition where the pressure in the blood vessels exceeds 140/90 mmHg. Data shows that the number of adults aged 30 to 79 diagnosed with hypertension worldwide stands at around 1.28 billion cases [1]. According to data from the 2018 Basic Health Research (Riskesmas), South Kalimantan has the highest prevalence rate of hypertension based on the highest measurement in the population

aged  $\geq 18$  years, with a rate of 44.1%. Meanwhile, the lowest prevalence rate was recorded in Papua, with a rate of around 22.2% [2]. The incidence rate of hypertension in Yogyakarta reached 32.86% [3]. With this prevalence rate, Yogyakarta ranks 12th among provinces with hypertension rates [2]. In Yogyakarta, the highest prevalence rate was recorded in Gunung Kidul, reaching around 39.23%, while the lowest was in Yogyakarta City, around 29.28%. Sleman ranked third with a prevalence rate of around 32.01% [3]. Based on the results of screening conducted in Watugajah VI Padukuhan during the elderly posyandu, 22 people were found to have hypertension.

Knowledge includes the patient's level of compliance with treatment and actions recommended by the doctor or other parties [4]. Good knowledge is the foundation for developing appropriate behavior [5]. Ignorance about hypertension often leads to a lack of attention to health, so it is often ignored. Limited understanding of the problem of hypertension in the elderly affects how they deal with the condition. Frequent misconceptions about hypertension in the elderly will affect the implementation of the necessary care for those suffering from this disease [6]. Therefore, it is necessary to provide health education aimed at increasing the knowledge of the elderly. Increased understanding of hypertension is very important, especially in rural areas and among the elderly who have limited education levels [7].

An individual's understanding of health can be obtained from a variety of sources, such as family, friends, education, mass media, and health counseling activities. An increased understanding of health can encourage healthier lifestyle changes, which aim to prevent complications and improve one's quality of life, as well as influence the choice of treatment measures taken. The importance of knowledge about hypertension and healthier lifestyle practices is highly emphasized, because if hypertension already causes complications, treatment takes a long time with significant costs, and although treatment can reduce the risk, the level will not be as far as people who have normal blood pressure [8].

Hypertension is influenced by various factors, including modifiable and non-modifiable ones [9]. Modifiable factors include obesity, smoking, physical inactivity, excessive alcohol consumption, high-fat diet, excessive salt intake, dyslipidemia (uncontrolled high cholesterol), psychosocial stress and stress [10] [11]. On the other hand, there are factors that cannot be changed, such as age, gender, and genetic factors [12].

Hypertension can be managed by undergoing regular medical check-ups and following the doctor's instructions, treating the disease with appropriate and regular therapy, adopting a balanced diet, increasing physical activity safely, avoiding exposure to cigarette smoke, alcohol, and other carcinogenic substances [13]. In diet, it can be done by reducing sugar consumption to less than 50 grams, limiting salt intake to less than 5 grams, reducing the use of salt when cooking, avoiding processed foods and fast food, reducing consumption of fatty meat and cooking oil, and increasing intake of fruits such as apples, oranges, mangoes, bananas, and cooked vegetables [12].

Prevention of hypertension can be done by undergoing regular medical checkups, avoiding smoking, maintaining regular physical activity, having a balanced diet, getting enough sleep, and managing stress [14] [12]. Prioritizing the knowledge, attitudes, and actions of the elderly in managing hypertension is essential. Therefore, it is necessary to provide education about hypertension to the elderly to improve their understanding, attitudes, and actions needed to overcome this condition [15]. Providing education and conducting examinations related to hypertension in the elderly group is relevant given that this health condition often occurs in older people. One way to increase knowledge and change attitudes of vulnerable groups, especially the elderly, is through direct counseling using leaflet media. Leaflets designed with pictures and concise explanations of hypertension will help the elderly to gain a better understanding. This leaflet is easy to distribute and can reach many people [16].

Therefore, in the community service program activities, UNISA Yogyakarta Group 36 has initiated counseling activities on hypertension and blood pressure measurement with the aim of

providing assistance and increasing understanding in efforts to prevent hypertension in the elderly, especially in Posyandu activities in Watugajah VI Padukuhan, Sendangagung Village, Kapanewon Minggir.

## 2. METHODS

This community service activity involves cooperation with Padukuhan Watugajah VI which also involves cadres from the padukuhan. This activity is located in Watugajah VI Padukuhan, Sendangagung Sub-district, Minggir District, Sleman Regency, Yogyakarta Special Region. This community service activity held counseling on hypertension disease which was delivered during the implementation of Posyandu activities for the elderly. With this counseling, it is hoped that the community can gain a better understanding and knowledge about hypertension, including understanding, causes, risk factors, a healthy diet, how to control, and strategies to control it.

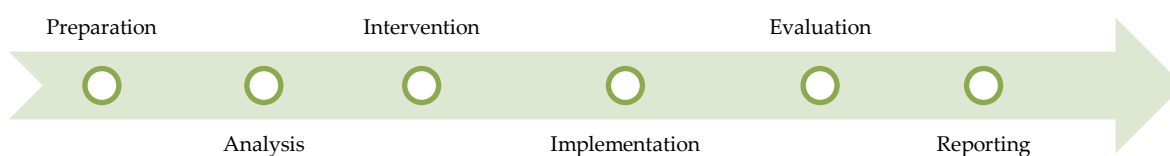


Figure 1. Method of Community Service Implementation

The service activity process involves the following steps: survey, analysis, intervention, implementation, assessment, and reporting.

- a. Preparatory Stage, namely survey activities and discussions to collect information needed in counseling
- b. Analysis Stage, which is the processing of data that has been collected from surveys to determine the priority of problems that will be discussed during counseling
- c. Intervention Stage, which is an action aimed at improving or enhancing a certain situation or condition, as well as the preparation of materials and equipment that will be used in the extension program.
- d. Implementation Stage, which is the step of implementing a program, including counseling activities such as providing education about hypertension and conducting blood pressure screening.
- e. The Evaluation and Reporting stage includes activities to assess success, supporting factors, inhibiting factors, and reporting of results. To measure success, discussion and question and answer sessions were conducted.

### Baseline Survey

On August 07, 2023, a discussion meeting was held with community leaders in Watugajah VI hamlet to identify health problems in the hamlet.



Figure 2. Discussion With Community Leaders

### Analysis Of The Problem

Based on discussions with community leaders in Watugajah VI, the majority of the population are farmers and most of them are elderly. The main problems encountered in this hamlet are related to health, especially hypertension, and the lack of health education. In addition, in this hamlet, there is a routine activity that is held every 16th, namely Posyandu Lansia. Therefore, after discussing with the field supervisor about the work program, the plan is to conduct counseling on hypertension and blood pressure screening. The target of this activity is the elderly in Watugajah VI hamlet, and the counseling will be held during the implementation of Posyandu Lansia activities.



Figure 3. Discussion of Work Program

### Invertension

Counseling activities regarding hypertension will be carried out at the Elderly Posyandu of Watugajah VI. For this counseling, a presentation aid using power point and leaflets containing a brief and easy-to-understand explanation of hypertension will be used. The method that will be applied is through lectures, and there will be discussion and question and answer sessions as part of the counseling activities.



Figure 4. Hypertension Leaflets

### Hypertension Disease Counseling Activity

Based on the agreement, counseling on hypertension has been held at the Elderly Posyandu. The method used was the delivery of material through lectures. At this event, 33 elderly participants were present. Before the delivery of the counseling material, a blood pressure check was carried out to identify elderly people who might have hypertension. In addition, in Posyandu activities, the companion's duties involve recording attendance, giving serial numbers, measuring weight, height, and conducting a test for blood sugar.

Then, at the beginning of the counseling, the service team distributed leaflets to the elderly participants and started the counseling session. After the presentation of the material, discussion and question and answer sessions were held with the participants with the hope that the elderly could increase their knowledge about hypertension. This counseling activity lasted for 45 minutes. After finishing the Posyandu event, students also involved the elderly who attended in a joint practice, namely doing brain exercises.



Figure 5. Delivery Of Material



Figure 6. Discussions and Q&A



Figure 7. Blood Pressure Screening



**Figure 8. Real-time Blood Sugar Check**



**Figure 9. Brain Exercise With The Elderly**

### 3. RESULTS AND DISCUSSION

This community service program in the form of counseling begins with conducting surveys and discussions with community leaders one week before the implementation of community service activities. Then, the counseling was held on August 15, 2023. This counseling includes information about hypertension, with material that includes definitions, causes, risk factors, healthy eating patterns, how to control, and how to manage hypertension. This material was delivered through presentation media in the form of power points and supported by leaflets.

Before the counseling began, an initial assessment of residents' knowledge regarding hypertension was conducted. The results showed that not all residents had adequate knowledge about risk factors, how to control, and prevent hypertension. However, after counseling using power points and leaflets, the majority of residents can mention risk factors, how to control, and how to prevent hypertension. They were also able to verbally answer several questions posed by the service team. During the Q&A session, some participants asked the following questions:

- a. Is hypertension curable? Hypertension, or high blood pressure, cannot be completely cured, but it can be treated to prevent complications. Therefore, it is important to maintain regularity in taking medication to avoid possible complications.
- b. What types of vegetables are good for older people with hypertension? Some types of vegetables that are good for people with hypertension include broccoli, green vegetables such as spinach, kale, and mustard greens, and carrots. Roasting, steaming or boiling vegetables is recommended instead of frying them.

Then, the service team also asked questions to the elderly based on the content of the material that had been delivered, with the aim of measuring participants' understanding without using the leaflet as a reference. The questions asked by the service team are as follows:

- a. What are the risk factors for hypertension?
- b. What are the hypertension prevention measures that can be identified from the acronym "CERDIK"?
- c. What are the hypertension control measures that can be identified from the acronym "PATUH"?

In the implementation of service activities, there are factors that support and factors that hinder the service team. Supporting factors include the presence of health cadres from the Padukuhan during counseling sessions and Posyandu activities. In addition, the enthusiasm of the participants in the question and answer session, the level of involvement of the participants in listening to the counseling, and the absence of participants who left the location during the counseling were supporting factors.

On the other hand, inhibiting factors include obstacles in finding a suitable place to display power point presentations. Therefore, the service team had to explain the contents of the power point orally. In addition, the distribution of leaflets, which should have been done after the presentation of the material, was changed to be done at the beginning before the material explanation began. Another obstacle was that some participants were unable to read because the target of this counseling was the elderly.

Based on the information provided, the number of elderly people in Watugajah VI Padukuhan reached 73 people. However, active participation in Posyandu activities only consists of 33 participants, which also includes 6 pre-elderly participants. Of the total 33 elderly participants who attended the health counseling, 22 people showed blood pressure above normal, while 11 other people had blood pressure within the normal range.

Health promotion is a process that enables individuals to take better control of their health and improve health conditions. Health education is part of an effort with the aim of improving people's knowledge about aspects of health [6]. From the results of the counseling, it was seen that the participants' knowledge increased after they received the counseling material. This is evident from the participants' ability to answer several questions posed by the service team. The results of this study are in line with the findings in a study conducted by [17], the study showed that the provision of educational programs increased the knowledge ( $p = 0.000$ ) and attitudes ( $p = 0.008$ ) of patients towards hypertension management.

#### 4. CONCLUSION

Community service activities regarding hypertension counseling and blood pressure screening have been successfully carried out. The results of the counseling showed an increase in residents' knowledge after they received information related to hypertension, risk factors, dietary management, prevention, control, and complications of hypertension. Hopefully, with this counseling, the knowledge of the community in Watugajah VI hamlet, Sendangagung Village about hypertension will increase, encouraging them to adopt better behaviors in controlling hypertension and keeping blood pressure under control. During and after the counseling, participants showed a good understanding of hypertension, as evidenced by active participation in the question and answer session, high level of attention during the counseling, and the absence of participants who left the location during the counseling process.



**Figure 10. Evaluation by Posyandu Cadre**

The evaluation given by one of the cadres who accompanied during the delivery of the material was that the material was very good and easy to understand, the participants were very enthusiastic, but the language used in the leaflet was still difficult to understand by some residents, especially the elderly. Overall, the counseling was considered to have run well and effectively, with hopes for further improvement in the future.

## **DECLARATION**

### **Supplementary Materials**

All authors have played an equal role in the preparation of this article. All authors have read and approved the published manuscript.

### **Author Contribution**

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### **Conflict of Interest**

No conflicts of interest

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