EFFORTS TO PREVENT HYPERTENSION IN THE KAILI TRIBE COMMUNITY

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ABSTRACT

Background: Hypertension causes many risks of premature death. The increase in hypertension sufferers in Palu City continues to fluctuate every year, the latest data for 2022 is that the number of hypertension sufferers is 7,848 cases and is in first place on the list of the highest non-communicable diseases. Based on medical record reports from the community health center, most of those suffering from hypertension complications from Kaili ethnic backgrounds are caused by lifestyle.

Objective: This study aims to analyze efforts to prevent hypertension in the Kaili tribe community.

Method: The type of research is qualitative research with an ethnographic approach. Data collection using independent interviews and observations. The research informants were 12 informants who were determined using the snowball sampling technique.

Results: The research results show that the Kaili tribe community accepts health values in preventing hypertension through health activities such as Posbindu PTM and Sehat Friday, involving various parties. The general health protection norm is 5-30 minutes of light to heavy physical activity every day. The culture of consuming local fruit, such as bananas, is still strong with an average of 1-2 fruits per day, but the pattern of vegetable consumption is good even though there is an inappropriate habit of cooking vegetables with coconut milk. Routine health checks are carried out 1-3 times a month, including general examinations, blood pressure, blood sugar, urine and counseling.

Conclusion: Suggestions for the Kaili tribe community to actively participate in health programs, so that they are aware, independent and able to avoid hypertension from an early age.

Keywords: Effort, Prevention, Hypertension, Kaili Tribe.

ESFORÇOS PARA PREVENIR A HIPERTENSÃO NA COMUNIDADE DA TRIBO KAILI

RESUMO

Contexto: A hipertensão provoca muitos riscos de morte prematura. O aumento do número de hipertensos na cidade de Palu continua a flutuar a cada ano, os últimos dados de 2022 indicam que o número de hipertensos é de 7.848 casos e está em primeiro lugar na lista das doenças não transmissíveis mais elevadas. Com base em relatórios de prontuários médicos do centro de saúde da comunidade, a maioria dos que sofrem de complicações de hipertensão provenientes da etnia Kaili são causadas pelo estilo de vida.

Objetivo: Este estudo visa analisar os esforços para prevenir a hipertensão na comunidade da tribo Kaili.

Método: O tipo de pesquisa é a pesquisa qualitativa com uma abordagem etnográfica. Coleta de dados usando entrevistas e observações independentes. Os informantes da pesquisa foram 12 informantes que foram determinados usando a técnica de amostragem de bola de neve.

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**Resultados:** Os resultados da pesquisa mostram que a comunidade da tribo Kaili aceita valores de saúde na prevenção da hipertensão através de atividades de saúde como Posbindu PTM e Sehat Friday, envolvendo várias partes. A norma geral de proteção da saúde é de 5-30 minutos de atividade física leve a pesada todos os dias. A cultura de consumir frutas locais, como bananas, ainda é forte com uma média de 1-2 frutas por dia, mas o padrão de consumo de vegetais é bom, embora haja um hábito inadequado de cozinhar legumes com leite de coco. Os exames de saúde de rotina são realizados 1-3 vezes por mês, incluindo exames gerais, pressão arterial, açúcar no sangue, urina e aconselhamento.

**Conclusão:** Sugestões para que a comunidade da tribo Kaili participe ativamente de programas de saúde, para que eles sejam conscientes, independentes e capazes de evitar a hipertensão desde tenra idade.

**Palavras-chave:** Esforço, Prevenção, Hipertensão, Tribo Kaili.

**RESUМE**

**Antecedentes:** La hipertensión causa muchos riesgos de muerte prematura. El aumento de los pacientes con hipertensión en la ciudad de Palu sigue fluctuando cada año, los últimos datos de 2022 indican que el número de pacientes con hipertensión es de 7,848 casos y ocupa el primer lugar en la lista de las enfermedades no transmisibles más altas. Según los informes del historial médico del centro de salud comunitario, la mayoría de las personas que sufren complicaciones de hipertensión de origen étnico kaili son causadas por el estilo de vida.

**Objetivo:** Este estudio tiene como objetivo analizar los esfuerzos para prevenir la hipertensión en la comunidad de la tribu Kaili.

**Método:** El tipo de investigación es cualitativa con enfoque etnográfico. Recopilación de datos mediante entrevistas y observaciones independientes. Los informantes de investigación fueron 12 informantes que fueron determinados utilizando la técnica de muestreo de bola de nieve.

**Resultados:** Los resultados de la investigación muestran que la comunidad de la tribu Kaili acepta los valores de salud en la prevención de la hipertensión a través de actividades de salud como Posbindu PTM y Sehat Friday, que involucran a varias partes. La norma general de protección de la salud es de 5 a 30 minutos de actividad física ligera a intensa todos los días. La cultura de consumo de frutas locales, como los plátanos, sigue siendo fuerte con un promedio de 1-2 frutas por día, pero el patrón de consumo de verduras es bueno a pesar de que existe un hábito inapropiado de cocinar verduras con leche de coco. Los chequeos médicos de rutina se llevan a cabo de 1 a 3 veces al mes, incluyendo exámenes generales, presión arterial, azúcar en la sangre, orina y asesoramiento.

**Conclusión:** Sugerencias para que la comunidad de la tribu Kaili participe activamente en los programas de salud, para que sean conscientes, independentes y capaces de evitar la hipertensión desde una edad temprana.

**Palabras clave:** Esfuerzo, Prevención, Hipertensión, Tribu Kaili.
Efforts to Prevent Hypertension in The Kaili Tribe Community

list of non-communicable diseases. In 2016, hypertension was in fourth place, rose to third in
2017 with 27,301 cases, and became first in 2018 with 26,024 cases. In 2019, the number
increased to 3,090 cases, and in 2020 to 2021 it rose to 7,848 cases, remaining in first place.
Hypertension had the greatest influence on the death rate in Palu, with 85 people dying from
this disease. This problem is influenced by cultural and social factors that shape people's health
habits. The prevalence of hypertension in other ethnic groups is also quite high, such as
Javanese 70.7%, Sundanese 72.7%, Betawi 60.9%, Batak 55.6%, and Minang 78.6%(2).

Based on medical record reports from community health centers in the city of Palu, most
of those suffering from hypertension or complications of hypertension are from the Kaili tribe
who live in the Gawalise mountains and the Talise coast, Pantoloan beach and Taipa beach.
Various risk factors that influence the occurrence of hypertension include lifestyle, diet,
smoking habits or exposure to cigarette smoke, drinking drinks containing alcohol, obesity,
medication and family genetic history (2). An observational study from September 2022 to
January 2023 in Palu City found that of 455 samples of Kaili people, only 110 people had
normal blood pressure, while most of the others suffered from prehypertension or stage 1 and
2 hypertension. Socio-cultural factors such as consumption habits of typical foods high in
sodium and calories, such as uta kelo, uta dada, and duo sale, are the main contributors. Other
studies confirm that excessive salt consumption can increase blood pressure by shortening the
diameter of blood vessels due to increased sodium in cells (3). Foods with high calories such
as coconut milk are not good if consumed every day. Coconut milk contains high fat and
calories, so excessive consumption can cause plaque formation in the blood vessels, which can
cause narrowing of the blood vessels and a sustained increase in blood pressure (4).

The city of Palu is one of the areas that receives hypertension health services in Central
Sulawesi Province, because the number of residents who suffer from hypertension and receive
services is 6,647 people and the city of Palu ranks 7th out of 13 cities with the most residents
suffering from hypertension. The total number of hypertension sufferers in Central Sulawesi
Province is 384,072 people (5). The percentage of people suffering from hypertension also
occurs in all regions of Indonesia, but is not as large as that which occurs in developed countries.
Hypertension is classified as a non-communicable disease, which is quite large nationally at
25.8%. This condition states that of the 1/3 of people suffering from hypertension, only 0.7%
take medication. The results of basic health research in 2018 also resulted in the prevalence of
hypertension in Indonesia increasing from 2013, where the results of blood pressure
measurements showed that hypertension increased from 25.8% to 34.1% (6).
Research by Aulia Rahma (2023) highlights the increasing prevalence of hypertension in the Banjar tribe in South Kalimantan. Factors such as low education and knowledge, as well as lack of education about treatment and lifestyle contribute to high rates of hypertension. The importance of providing health education that pays attention to local culture, including the use of the Banjar language, to increase the knowledge of hypertension sufferers. This research used a pre-experimental design with 30 respondents, which showed an increase in knowledge after being given Banjar language-based education using video as an outreach medium (7). Research by Muhammad Reza (2023) in West Sumatra found that the Minangkabau ethnic group had a hypertension incidence rate of 78.6%, especially in women with a percentage of 36.9%. This research was conducted at the Air Children's Health Center in Padang City with 52 case samples and 52 control samples using purposive sampling technique. Data analysis using SPSS software shows that the majority of Minangkabau ethnic women with hypertension do not work and do light physical activity. Although no significant relationship was found between work and hypertension, there was a significant relationship between physical activity and hypertension in Minangkabau ethnic women (8).

Research by Metriani and Rahmawati (2022) observed an increase in hypertension cases among the Wakatobi tribe in the Wanci Subdistrict area, from 85 cases in 2020 to 97 cases in 2021. This study aims to understand the seafood consumption behavior of hypertension sufferers. Carried out using qualitative methods and an ethnographic approach, with 6 informants from the hypertension community in Wanci Village, including 4 key informants. The results showed a lack of knowledge about hypertension among informants. Even though they accept their health condition, they only consult and pay attention to their diet according to the recommendations of local health officials. Before suffering from hypertension, they consumed a variety of seafood without restrictions, but afterward, they reduced their food portions but still maintained the same diet (9). Research by Dinda Lestari and Mashanda (2022) highlights the eating habits of the Serawai tribe in Kota Manna District, South Bengkulu Regency, which tend to be unhealthy because they often use thick coconut milk in their cooking. In a week, most respondents cook food with coconut milk 3-4 times. The research results showed that the majority of respondents who frequently consumed coconut milk (57.5%) had hypertension, while some who rarely consumed coconut milk (42.5%) did not experience hypertension. Unhealthy coconut milk consumption patterns can trigger hypertension (10).

Research by Diah (2023) found that in the Toraja tribe, Rantepao, lack of efforts to control blood pressure, such as lack of blood pressure control, can increase the risk of hypertension. Poor attitudes and actions in controlling blood pressure increase this risk. An unbalanced intake
of sodium, fat and carbohydrates can also increase the risk of hypertension. People are advised to regularly control their blood pressure, obtain information about health, and adopt healthy behaviors that can help lower blood pressure during examinations (11). The challenge of facing hypertension in Southeast Asia requires healthy lifestyle modifications as its prevalence has increased sharply over the last two decades. About a third of the adult population in this region is reported to suffer from hypertension every year, mainly due to the impact of modernization and lifestyle developments (12). These changes, triggered by globalization and urbanization, have led to an increase in hypertension cases. WHO estimates that by 2025, around 1.5 billion people will suffer from hypertension, with 9.4 million deaths from the disease and its complications each year (13).

Prevention and control of hypertension is crucial to reduce its increasing prevalence. Research on different ethnicities in the UK shows differences in how hypertension is controlled and prevented in primary health care. Although there is no difference in the treatment of antihypertensive drugs between various ethnic groups, people of African ethnicity tend to require ongoing treatment due to higher blood pressure. This emphasizes the importance of ongoing hypertension management to control this disease (14). Research in China shows that the prevalence of hypertension in that country is higher than the global average, with the highest prevalence in the Mongolian ethnic group (39.8%). The best treatment and control of hypertension was recorded in the Mongolian population, while the Yi group had the lowest control rate, indicating the need for more intensive preventive measures for ethnic Mongolians (15). Research on Caucasian tribes in the United States shows that intervention efforts using health information technology (REDUCE-BP) have succeeded in reducing the number of hypertension sufferers. This intervention was also designed to utilize behavioral science to increase the number of Caucasian people who control hypertension (16).

2 PARTICIPANTS & METHODS

In this research, a type of qualitative research is used which examines natural conditions, different from testing or experimentation, so that the researcher becomes the key instrument. Data integration was carried out using a combined method or triangulation to ensure the validity and reliability of the data. Data analysis is inductive, meaning that ideas and ideas are generated from direct observation, and explained in a more general context. Thus, the results of qualitative research prioritize deep meaning and understanding rather than broad generalizations. The data collection process was carried out through in-depth interviews, document review, observation...
and literature study, which provided a holistic picture of the phenomenon under study. The qualitative approach used in this research is ethnography, which focuses on the views of indigenous or local communities. Ethnography has the characteristics of holistic-integrated and in-depth description, requiring a relatively long research period to gain a comprehensive understanding of the culture and daily life of the people being studied. This research was carried out in October-December 2023, with a location in the Kaili tribal community in the working area of the Talise Health Center and Lere Health Center, Palu City, Central Sulawesi. The snowball sampling process began with interviews with the traditional head of the Kaili tribe, who then directed the researcher to other subjects until data saturation was reached. The ethnographic data analysis techniques used include domain analysis, taxonomy, components, and themes, all of which aim to capture original points of view, relationships with everyday life, and the meaning of the phenomena observed.

3 FINDING

3.1 HEALTH FACILITIES AND DISEASE PATTERNS

The Palu City Government is determined to improve access and quality of health services with equitable distribution, having 12 community health centers from 2001 to 2012, which then increased to 13 in 2020. These health centers are supported by auxiliary and mobile health centers. Community Resource Health Efforts (UKBM) are also being encouraged, involving the community in health care, such as Posyandu, Poskesdes, and others. Morbidity data, which includes disease incidence and prevalence rates, is used to evaluate health status, with the morbidity rate in Palu City in 2021 reaching 1.96, an increase from the previous year. The disease pattern is still dominated by infectious diseases, but degenerative diseases are also still significant.

The research was conducted in the working areas of the Talise Community Health Center and Lere Community Health Center in Palu City with a total of 12 informants, including the Kaili tribe community, tribal leaders and health workers. Interviews in October-December 2023 showed that efforts to prevent hypertension in the Kaili tribe involve providing health information from health workers, physical activity as a general protective norm, consumption of fruit and vegetables to reduce fat and cholesterol, and the habit of regular blood pressure checks. However, there are still obstacles in society in implementing efforts to prevent hypertension optimally.
3.2 HEALTH VALUES

1. Kaili Tribe Community Knowledge About Hypertension

Based on the results of in-depth interviews conducted by researchers with key informants regarding their opinions regarding hypertension, it was found that hypertension is a condition where a person experiences an increase in blood pressure above normal which results in morbidity and mortality.

"I feel dizzy and irritable, but I found out from the health center staff that my hypertension pressure is more than 120/80)"

“Yes, the pressure rises, it feels like a headache. If people at the health center say that the normal blood pressure limit is 120/80, it is usually said that the increase is due to an unhealthy lifestyle."

It was said by another informant, namely a health worker, the same as the previous informant, that high blood pressure or hypertension occurs when the pressure in the blood vessels exceeds the normal pressure of 120/80 mmHg and is very dangerous if left alone. This informant also said that the triggering factor for the high blood pressure of the Kaili people was their habits of not maintaining a healthy lifestyle so that the hypertension they experienced could cause complications from other diseases.

2. How to Prevent Hypertension in the Kaili Tribe

Prevention of hypertension in the Kaili tribe community is carried out by holding health activities at the community health center and they receive information about ways to prevent hypertension.

"As far as I know, there are a lot of activities here, not just at the community health center, the posbindu is created, but also here we have one called Healthy Friday, most of which is the material that is presented about healthy living, how we can prevent hypertension, are we here strong enough to eat salt, a little bit of salt? plus food"

"In the city of Palu, the highest number of non-communicable diseases is hypertension. Various factors cause the high number of hypertension sufferers, one of which is people's lifestyles. On average, the people of Palu City come from the Kaili tribe, but immigrant communities are also influenced by the culture here. For example, the habit here is to like to eat salty food, and don't exercise enough. These are all factors that cause high levels of hypertension here. Therefore, the mayor of Palu together with several government sectors is trying to ensure that the people of the city of Palu can live healthier lives by carrying out the Healthy Friday program which is routinely implemented, apart from that, the non-communicable disease control program is also still being carried out at the community health center, namely at the PTM Posbindu."
"Activities in Healthy Friday and Posbindu both seek to change the lifestyle of the people here to better maintain their own health."

3. Process of Fostering Health Values in Efforts to Prevent Hypertension in the Kaili Tribe Community

The process of determining health values for preventing hypertension in the Kaili tribe was carried out by means of health guidance and promotion involving several influential figures.

"I think the process is good, because it is supported by the mayor with Healthy Friday and at the health center there is a posbindu. Here we are invited to take part in health activities. Because our lifestyle is not healthy, we still eat a lot of salt."

The process of developing health values to prevent hypertension in the Kaili tribe does rely on collaboration with several parties, as stated by previous informants. The community health center did this because most of the Kaili tribe people only trust certain people such as the tribal chief.

"Yes, the people from the community health center are inviting cooperation, like the sub-district side. Because every time there is an activity related to the community here, people definitely go to the sub-district first, because here, if you are not a sub-district person or tribal chief, it is very difficult to gather people, especially in the Vatutela section up there, it is difficult. Lots of pata pens there"

4. People Involved in Building Health Values as an Effort to Prevent Hypertension

According to several informants, the involvement of certain people in fostering health values for hypertension prevention efforts was carried out to optimize the prevention program which was implemented in collaboration with influential people such as tribal heads and local sub-district officials.

"In the Healthy Friday activities there are officers from the community health center, including doctors and nurses, there are also from sub-districts and tribal heads, because usually not too many people come, usually the tribal heads come to people's homes on the previous day, Thursday so that We take part in community health center activities. "There are also announcements going around from the health center using ambulances and announcements from the mosque, just alternating."

They played an active role by going around houses and inviting the Kaili tribe community to take part in health activities, and the village head also explained their duties in this participation.
"We, together with the village people, are involved in the activities carried out by the community health center officers. Yes, we are the only ones who are heard by the indigenous Kaili tribe community here, so with our invitation they are convinced to take part in the community health center's activities which try to teach the community how to prevent disease. For our job, we go around houses, or announce at the mosque if there is an activity that will be carried out to the local community and we are also present when the activity takes place, even though we only provide an introduction and reinforcement at the beginning of the activity. "The community health center officers themselves have carried out their duties well as far as I can see when the activities took place."

5. Forms of Information Delivery in Building Health Values as an Effort to Prevent Hypertension

The delivery of information on fostering health values to prevent hypertension is carried out in the form of counseling at every health activity and the messages conveyed are related to values and ways to prevent hypertension in the Kaili tribe community.

"Yes, the delivery is through counseling, every special activity there must be a health delivery delivered by the community health center. The message conveyed is about how we must regularly do sports activities, eat healthy food, and have regular health checks."

"The message from health workers is to promote and try to empower the community so that they are able and willing to maintain their health. The message conveyed is related to preventing hypertension, such as the public being advised to check their health regularly, avoid cigarette smoke, be diligent in physical activity, regulate their diet, and take antihypertensive medication according to the prescribed dosage given by the doctor."

6. Instilling Confidence So that People Understand, Are Willing and Able to Take Efforts to Prevent Hypertension

Efforts made by health workers for the Kaili tribe community to understand, so that they are willing and able to make efforts to prevent hypertension by carrying out awareness efforts through health programs, where they play an active role in every activity carried out.

"Yes, health workers from the community health center are very active in holding health activities here."

"I think the community health center officials have worked well with community leaders here as a form of their efforts to invite us and make this activity a success. Because actually we, if not the tribal chiefs, are directing some of us to be lazy about participating in activities. "However, after we were trusted by the tribal chief, we, the people here, wanted to take part in this activity and thank God, it turned out that apart from being a free activity, it really helped us to prevent hypertension."
Furthermore, another informant explained the things that were done during the process of instilling confidence so that the Kaili tribe people knew, were willing and able to adopt a healthy lifestyle, namely during these health activities, the Kaili tribe community was introduced as early as possible to understanding hypertension and what steps to take so they can carry out in preventing and managing the hypertension they suffer from.

"Our efforts to instill confidence in the community are through introducing more information about hypertension and easy ways to prevent and treat hypertension. The people here also control their health through examinations carried out on them, which can be seen from individual medical records, so that the community is not only instilled in only health values, but they are also encouraged to always adopt a healthy lifestyle."

7. The impact of the information provided in preventing hypertension in the Kaili tribe community

The information conveyed to prevent hypertension in the Kaili tribe has really had a positive impact, according to key informants, many changes have been experienced, they have become more controlled in maintaining their health, for example in maintaining their diet, reducing excessive salt consumption, and being able to control compliance with taking antihypertensive medication.

"Yes, it is very, very helpful, because with the activities of the community health center for us residents, hypertension can automatically be prevented. The change that I feel is that we know we have a healthy lifestyle and it feels like we are under control when we are older. (Yes, it is very, very helpful, because with the activities of the community health center, we as residents can automatically prevent hypertension. The change that I feel is that we know we have a healthy lifestyle and that we are taking medication under control)"

"It doesn't have much of an effect, maybe because I've had hypertension for a long time. I keep taking medication, but I still live a healthy life."

3.3 GENERAL PROTECTION NORMS (PHYSICAL ACTIVITY)

1. Routine Physical Activity Rules as an Effort to Prevent Hypertension in the Kaili Tribe Community

There are no definite provisions or rules relating to physical activity in the Kaili tribe as an effort to prevent hypertension, but they are reminded to carry out routine physical activity every day.
"I remember the exercise rules and then something was conveyed by the community health center officers, saying that you have to exercise for at least 30 minutes per day, but there are many types, if I'm not mistaken, there are light sports and heavy sports. Like what I do every day, I exercise diligently in the morning, go for a walk in the morning, only 15 minutes at most."

It's not specific how health workers should exercise. We were told to do sports, the most important thing is to have it, I usually do gymnastics and participate in community health center activities. Just once a week, exercise every Friday. It's a little over 30 minutes, so if you're doing gymnastics, there's a lot of movement.

2. Public Understanding of Light Physical Activity

According to them as informants, the understanding of the Kaili tribe regarding light physical activity as an effort to prevent hypertension is an activity that does not require excessive effort, is done almost every day and only lasts 5-20 minutes.

"Yes, the morning walk is only 15 minutes, so put him in light exercise, because I also take a leisurely walk, not a jog. During that week, I exercised every day."

"Here we are informing the public that light physical activity is a sports activity that does not require a lot of energy. For example, when we sit, read, write or take a leisurely walk, it is still considered light physical activity. Done every day of course. The length of time required is not limited."

3. Public Understanding of Moderate Physical Activity

The Kaili tribe's understanding of moderate physical activity as an effort to prevent hypertension is in the form of activities that make the body sweat a little, the heart rate is faster. Examples of physical activities that the Kaili tribe do are lifting light furniture, gardening, collecting salt, and cycling for a short period of time not too long, 10-30 minutes every day.

"Yes, sometimes work that is neither heavy nor light, for example for activities outside the home, is a 10 minute walk to the garden. Housework is like lifting light furniture to sweep the floor."

According to them, the moderate physical activity carried out by the Kaili tribe as an effort to prevent hypertension has been implemented quite well, as they conveyed to the community, where moderate physical activity is in the form of activities that make the body sweat a little and the heart beats faster, then within a week it must be done with a duration of 30 minutes but depends on the abilities of each individual.

"We convey light physical activity to the public as an activity when we do it with our body sweating a little and our heart beating faster. Examples include walking fast,
cycling, gardening and so on. Within a week it must be done. Whether it's light, moderate or heavy, you have to get physical activity in your body. Depends on the needs for the types of things you want to do. The time used also depends on each person's abilities, but it is recommended that the minimum standard for each exercise is 30 minutes."

4. Public Understanding of Heavy Physical Activity

The Kaili community's interpretation of heavy physical activity is an activity that causes a lot of sweat due to heavy activities such as climbing mountains and lifting heavy objects. They do it almost every day with a time of 5-20 minutes.

"For us, it's a hard job, like going uphill and going to the garden because we're going up a mountain. Because of our work, we do it almost every day"

Another informant said that the same explanation was that heavy physical activity was sports that made the body sweat, for example playing volleyball twice a month with a playing time of 25-60 minutes.

"Hey, if I do heavy exercise, it's only once in a while... I play volleyball, that's why I think we can sweat a lot once we play. Just play volleyball twice a month, play for a maximum of 25-60 minutes."

"Basically, we here understand that heavy exercise can make our bodies tired quickly because we sweat a lot. For example, if we lift heavy objects. I lifted the heavy things myself and then my tomatoes would bear fruit. We harvest once every three months, it takes about 10 minutes to lift because we only lift it into the car."

5. The Impact That Occurs After Regular Physical Activity in Preventing Hypertension

The changes that occur in the Kaili tribe after carrying out routine physical activities to prevent hypertension are that they feel healthier, because their blood circulation becomes smoother and their blood pressure becomes normal.

"Yes, because we do a lot of work, our stamina automatically becomes healthier. The way to see it is that if we usually don't move much, then we eat a lot, the pressure will usually rise again if we measure it, but if we work diligently, the blood pressure will not rise."

"Yes, Alhamdulillah, there will definitely be a good influence. "I personally think that when you finish exercising, your body feels fresher, and it's also good for improving blood circulation."
3.4 CULTURE / LIFESTYLE (FRUIT AND VEGETABLE CONSUMPTION PATTERNS)

1. Types of Fruit Consumed to Prevent Hypertension
The types of fruit consumed to prevent hypertension in the Kaili tribe include fruit such as bananas, papaya, oranges, mangoes and apples.

"If the fruit we often eat is banana and papaya, that's the fruit we have in the garden. Yes, the culture here is that every time you finish eating rice, you always eat a banana to wash your mouth."
"My family and I often eat bananas. We also usually eat papaya or oranges. "Because according to health workers, consuming fruit is good for lowering blood pressure."

2. Portion of Fruit Consumed to Prevent Hypertension
The large portions of fruit consumed to prevent hypertension in the Kaili community are 1-2 pieces per meal a day.

"We eat 1-2 pieces of fruit, 3 times in the morning, afternoon and evening. "For papaya, it's the same, 1-2 pieces per meal."

3. Cultural Rules for Consuming Fruit to Prevent Hypertension
The cultural rule of the Kaili tribe in consuming food as an effort to prevent hypertension is that there is a habit that the Kaili tribe follow when they finish eating, they eat bananas as dessert. The following is what the informant said:

“Like before, here we have a culture of eating bananas after eating rice. That's why every time there's an event there are always bananas provided."

4. Types of Vegetables Consumed to Prevent Hypertension
According to them, the types of vegetables consumed by the Kaili tribe to prevent hypertension are various, such as kale, spinach, mustard greens and moringa, but they consume moringa almost every day.

"Most often it's Moringa vegetable cooked in coconut milk, it's very delicious if eaten with grilled anchovies, with lots of salt, it's very delicious. Same as usual, stir-fry kale vegetables."

5. Portion of Vegetables Consumed to Prevent Hypertension
The portion of vegetables consumed by the Kaili tribe to prevent hypertension is an average of 1 medium plate for each breakfast, lunch and evening meal.
“We eat vegetables every day, we can't do it if we don't have vegetables. There are 4 people here for each meal, 1 plate for each breakfast, lunch and dinner. "So, for Moringa, you can get up to 5 bunches in 1 day, for medium kale, 3 bunches."

6. The Impact of Changes After Consuming Vegetables and Fruit in Preventing Hypertension
They feel that their blood pressure has become normal, because fruits and vegetables contain vitamins that can improve blood flow, here's what they convey:

"I don't know exactly how, but what I heard from the community health center staff is that it's good to eat vegetables because they can improve blood flow and improve digestion."
"Eee, the impact is good. I think that's the only downside. We still like to eat coconut milk, so sometimes our blood pressure is normal, sometimes it's high."

3.5 HABITS (HEALTH CHECK)

1. Kaili Community Views on Health Services That Should Be Provided to Prevent Hypertension
The Kaili community's view of the health services that must be provided to prevent hypertension is that the services are considered to be quite good because almost every week health services are provided for the community.

"Alhamdulillah, the health services we provide here are quite good, for example, almost every week there is an event from the community health center. There are free health checks on Healthy Fridays and there is also Posbindu, we can check our health and ask the doctor about our hypertension"

2. Kaili Tribe People's Routine Habits of Carrying Out Health Checks to Prevent Hypertension
The Kaili tribe's routine habit of carrying out health checks to prevent hypertension was expressed by the following informant, where they carry out health checks 1-3 times a month depending on the provision of health services by the health center, as follows:

"Usually we take part in Healthy Friday 1-3 times a month, which is the mayor's event. Posbindu is usually scheduled, but if we want to check, go directly to the puskesmas."

3. Health Checkpoint to Prevent Hypertension
Places for health checks to prevent hypertension, it was found that they did this at the health center by carrying out personal examinations and when participating in health activities carried out by the health center.

“The place is at the health center. If we go to the hospital, it's far from here, we usually go to the community health center if it's serious then we usually go to the general hospital, but thank God we've never been seriously ill.”

4. Types of Health Checks That the Kaili Tribe People Get to Prevent Hypertension

The types of health checks received by the Kaili tribe to prevent hypertension include blood pressure checks, blood sugar checks, urine tests, general check-ups and also counseling by health workers.

"Usually we have our blood pressure checked, we also have our blood checked, we also have our urine checked. After the examination, we usually talk to the doctor to discuss complaints and give health advice."

5. Giving Antihypertensive Medication to Kaili Tribe People During Health Checks to Prevent Hypertension

Giving antihypertensive drugs to the Kaili tribe community during health checks to prevent hypertension, it was found that antihypertensive drugs, namely 12 mg catopril, were given to people whose blood pressure was still high to reduce the risk of hypertension complications.

"Yes, I got the drug catopril from the community health center, so I have to take it regularly."

6. Controlling the Kaili Tribe Community's Habits of Carrying Out Health Checks to Prevent Hypertension

How to control the habits of the Kaili tribe in carrying out health checks to prevent hypertension, it was found that they checked their health progress through counseling services by controlling medical record books. Here's the statement:

"Medicines are given, but we are also monitored through consultations with puskesmas doctors. "So there is a history book about our illnesses, there maybe the doctor will see if we are still giving medicine or not, if we don't give regular medicine, we will just remind you how to maintain your health."
4 DISCUSSION

This research uses the Five Leaves of Prevention theory which is related to efforts to prevent hypertension in the Kaili tribe community. This theory is the theory used to help this research to see how efforts to prevent hypertension in the Kaili tribe community and to analyze efforts to prevent hypertension, with true prevention or primary prevention efforts occurring in the prepathogenesis period and involving: health promotion (health promotion) and general and specific protection (general and special protection). Then the secondary prevention stage can occur in the early period of pathogenesis. Included in this period is early diagnosis and prompt treatment (early diagnosis and fast, appropriate treatment). The next period is disease control, including disability limitation, namely preventive measures so that the consequences and complications of disease can be minimized. And the period at the tertiary prevention level is prevention targeting sufferers of certain diseases, which includes rehabilitation, namely efforts to restore optimal physical, psychological and social function. From the research results, four themes were obtained based on the research objectives.

1. Health Values

Dynamic health education is important in changing individual or group behavior based on awareness, not just the transfer of material. Knowledge about hypertension, including its symptoms, meaning, and dangers if left untreated, influences patient behavior. The Kaili tribe in Palu understands hypertension as blood pressure above 120/80 mmHg with symptoms such as headaches, dizziness, and associates it with an unhealthy lifestyle. WHO determines that hypertension occurs at blood pressure of 140/90 mmHg or more, needs to be treated to prevent serious complications. One of the causes of high rates of hypertension is the habit of eating excessive salt and coconut milk(13). Researchers' observations found that the food served was very salty and contained coconut milk, in line with research by Zhang (2024) which suggested using salt rich in potassium to reduce the risk of hypertension (17).

Interviews with the Kaili tribe community revealed that they prevent hypertension by participating in health activities such as Posbindu PTM and Healthy Fridays held by the community health center. This activity provides information on preventing hypertension and is supported by various parties to encourage the adoption of a healthy lifestyle. The chief added that they also maintain their health by eating healthy, exercising and having regular health checks. This is in accordance with Minister of Health Regulation Number 71 of 2015 concerning Management of Non-Communicable Diseases, which requires active community
participation through community-based health activities such as Posbindu PTM for early detection and monitoring of NCD risk factors (18).

The Kaili tribe community prevents hypertension by participating in health activities such as Posbindu PTM and Healthy Fridays, which provide information on preventing hypertension and are supported by various parties to encourage healthy lifestyles. The process of fostering health values is carried out through health guidance and promotion by health workers, who are supported by influential figures. A personal approach is used to approach the community more effectively in optimizing efforts to prevent non-communicable diseases such as hypertension, by expanding the reach of Posbindu PTM. Hypertension prevention also involves tribal leaders inviting community participation in health activities and promoting preventive measures such as physical activity, healthy eating patterns, and regular check-ups, in accordance with Minister of Health regulations that support the implementation of healthy eating patterns in the community.

The Kaili tribal community shows that the involvement of the tribal chief and sub-district officials in fostering health values to prevent hypertension has had a positive impact. This collaboration makes the community more confident and participates in health activities, with health workers providing services and tribal heads and sub-district officials inviting and convincing the community to participate. This approach is expected to optimize the implementation of health activities and reduce hypertension sufferers, in line with government programs that support healthy lifestyle education and improved health services (19).

2. General Protection Norms/Rules (Physical Activity)

There are no definite rules or customary provisions regarding physical activity in preventing hypertension in the Kaili tribe, but health workers recommend physical activity at least 2-3 times a week for 15-30 minutes. This is in line with the Indonesian Ministry of Health (2022) guidelines which recommend physical activity of at least 30 minutes per day or 150 minutes per week at moderate, regular and measurable intensity, divided into 3 categories based on intensity and calories used: light, moderate and heavy (18). The Kaili tribe understands light physical activity as activities that do not require excessive force, such as walking, sweeping and working while sitting. They also understand moderate physical activity as activities that make you sweat but not too much, such as salt mining and gardening. Counseling from health workers about light and moderate physical activity in accordance with community understanding and followed by routine activities such as leisurely walking, salt farming and gardening (20).

The Kaili tribe understands heavy physical activity as activities that require more energy, carried out 3-5 days a week for 10-30 minutes, such as gardening by climbing mountains or
being a salt farmer who lifts heavy sacks. They think that heavy physical activity makes the body tired easily, sweats and increases heart rate, according to research by Kusumo (2020). After doing regular physical activity, some people feel healthier, fresher, less stressed and calmer. Regular physical activity can provide benefits for controlling blood pressure and maintaining overall health (20).

3. Culture / Lifestyle (Fruit and Vegetable Consumption Patterns)

Kaili tribal people often consume local fruit such as bananas, papaya, mangoes and oranges to prevent hypertension, as recommended by health officials. They are advised to consume fruit that is easily available so they can consume it regularly every day. This recommendation is in line with the Indonesian Ministry of Health's recommendation (2022) for hypertension sufferers to consume 5 portions (400-500 grams) of fruit and vegetables per day, where 1 portion is equivalent to 1 orange, apple, mango or banana (18). The people of the Kaili tribe have the habit of consuming bananas as dessert after eating because they are considered a symbol of blessing and are a local fruit that is common in their area. Health workers support this habit because the content in bananas is believed to be good for reducing high blood pressure. They also often consume green vegetables such as moringa, especially in the form of coconut milk called uta kelo, almost every day (21).

However, some people process vegetables with coconut milk, which has the potential to increase fat levels and cause high blood pressure. The recommendations of health workers are in line with the recommendations of the Indonesian Ministry of Health (2022), which recommends consuming 4-5 exchanges of vegetables every day in portions of 1 small serving plate to 1 medium serving plate that have been processed and prepared properly. (18). After consuming vegetables and fruit regularly to prevent hypertension, some people from the Kaili tribe felt good effects, such as lowering blood pressure and reducing headaches due to the vitamin content in fruit and vegetables. Even though some people are still experiencing slight changes because they often process vegetables incorrectly, the majority of people have felt the positive benefits of regular consumption of fruit and vegetables. This is in line with Fitri's research (2023), which shows that consuming vegetables and fruit can prevent hypertension by maintaining blood vessels and sodium balance in the body (22).

4. Habits (Health Check)

The Kaili tribe community has a positive view of health services in preventing hypertension, with routine health checks carried out every week. They consider the service to be good and support the health programs being implemented. This routine habit is in line with health service standards which stipulate minimum health screening for people over 60 years of
age, including hypertension detection, blood sugar checks and cholesterol checks. Health workers also strive to provide optimal services by carrying out examinations according to standards and collaborating with local governments and influential figures in the local area. Even though they carry out health screening 1-3 times a month, depending on the health service program held by the health center, this is still in line with the recommendation of the Ministry of Health of the Republic of Indonesia (2016) to carry out routine health checks at least once a month (23).

The place for health checks for the Kaili tribe to prevent hypertension is at the community health center and during health activities such as Posbindu and Healthy Friday (24). They receive general examinations, blood pressure, blood sugar and urine, as well as counseling by health workers. This type of health examination is adapted to health ministry standards and is carried out in every health activity(6).

Some people from the Kaili tribe who had high blood pressure during health checks were given antihypertensive medication, such as 12 mg catopril, by health workers. People whose blood pressure is still within normal limits are not given antihypertensive drugs. This action is in accordance with the recommendations of the Indonesian Ministry of Health which states that administering antihypertensive drugs can reduce the risk of hypertension complications (19). The Kaili tribe community controls their health check habits to prevent hypertension through counseling services and through their respective medical record books. This is in line with suggestions from (Mumpuni, 2023) who emphasize the importance of counseling services in increasing adherence to taking antihypertensive medication in hypertensive patients (25).

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AUTHOR CONTRIBUTIONS

Mustaqima, Ridwan Mohtar Thaha, Muhammad Syafar: Study concept and design. Mustaqima: Collect and process research data. All authors: creation of publication manuscript.
CODE OF ETHICS
This research was conducted with refers to the recommendation for ethical approval which has a number 4634/UN4.14.1/TP.01.02/2023 and published by the Faculty of Public Health, Hasanuddin University

REFERENCES


