



RISK BEHAVIOR, HEALTH PROMOTION, AND HYPERTENSION IN PRODUCTIVE COMMUNITIES IN THE UPTD TAPOS DEPOK AREA

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Abstract

In 2021 at the Tapos Health Center, out of 9,352 hypertensive patients aged ≥ 15 years, only 1,547 people (16.5%) received standard services. This problem is a serious health challenge because hypertension contributes to the high mortality rate in the region. The purpose of this study is to identify the problem and its causes and provide alternatives to the existing problem. The research design used for this study is descriptive analytical. This research aims to identify problems and their causes and provide alternatives to existing problems. Data collection and observation were carried out offline and then the data was processed using the Matrix Criteria Method. The results obtained for the problem that is the top priority is the low public interest in health promotion. Therefore, alternative problem solving is needed that can increase public interest in participating in health promotion. As a solution, planning sustainable health programs related to hypertension is a top priority to increase public awareness and participation in hypertension prevention. The program includes periodic health checks, counseling, and joint sports activities. It is hoped that through this program, it can overcome the low public interest in health promotion and ultimately help reduce the risk of hypertension and improve overall public health.

Keywords: Community Interest, Hypertension, Health Promotion, Sustainable Programs, Productive Age

Introduction

WHO data shows that the number of people with hypertension continues to increase, estimated to reach 1.5 billion people by 2025, this increase occurs mainly in productive age.¹ In the population ≥ 18 years old, the prevalence of hypertension based on blood pressure measurements decreased from 34.1% in 2018 to 30.8% in 2023. West Java Province occupies the third position with a high hypertension rate, which is 34.4%. Meanwhile, the prevalence of hypertension in the productive age group in Depok City is 34.13%.^{2,3}

Risk factors such as genetics, age, and unhealthy lifestyles such as lack of physical activity, consumption of unhealthy foods, smoking, and alcohol consumption are the main causes of hypertension in the productive age group.⁴ In addition, individuals with a family history of hypertension have a higher risk of developing this condition, as genetic factors play an important role in blood pressure regulation.⁵

Hypertension at productive age can have an impact on a person's quality of life, especially if it is not managed properly.⁶ The quality of life can decline due to mobility restrictions, dependence on medical care, and the financial burden that may arise from long-term treatment.⁷ If not treated properly, hypertension can lead to complications such as heart attacks, kidney failure, obesity, and other metabolic diseases. The prevalence of kidney failure caused by hypertension in productive age in

Indonesia reaches 3.8 percent. The disease is also responsible for 40% of deaths from heart disease and 51% of deaths from stroke while individuals with *overweight* and obesity has a 4.37 times higher risk of developing hypertension compared to those with normal nutritional status.^{8,6}

Factors such as poor diet, lack of physical activity, and excessive consumption of alcohol and tobacco also contribute to the increase in hypertension cases. In addition, hypertension is often referred to as "*silent killer*" because it does not always show obvious symptoms.⁹ People who are less physically active have a 1.57 times greater risk of developing hypertension compared to those who engage in heavy physical activity. In addition, individuals with an unbalanced diet have a 4.69 times higher chance or risk of developing hypertension compared to those with a balanced diet. Excessive consumption of alcohol and tobacco also increased the chance or risk of developing hypertension by 4.69 times compared to those who did not consume alcohol and tobacco excessively.^{10,11}

Prevention of hypertension through a healthy lifestyle, such as regular physical activity and quitting smoking and alcohol consumption, is essential.⁶ Awareness of blood pressure is also key in early detection and proper treatment of hypertension at productive age.⁹ Thus, knowledge, awareness, and preventive actions are very important in maintaining an optimal quality of life at productive age.

Based on the results of blood pressure measurements of patients in the Tapos Health Center area in 2021, out of a total estimated 9,352 people aged ≥ 15 years who suffer from hypertension, only 1,547 people receive services according to standards. This figure shows that only about 16.5% of hypertension sufferers in the region receive treatment that meets the standards. The problem of hypertension at the UPTD Tapos Depok Health Center is a health challenge because high prevalence of hypertension in the region which is influenced by factors such as lack of physical activity, an unbalanced diet, and excessive consumption of alcohol and tobacco. This challenge is exacerbated by a lack of awareness the importance of a healthy lifestyle and the need for effective preventive interventions to reduce the risk of hypertension the . Berdasarkan data yang dikumpulkan oleh UPTD Puskesmas Tapos Depok, hipertensi adalah salah satu penyebab utama kematian dini.¹²

If the risk of hypertension in productive age is not prevented, the impact can be very detrimental both individually and in society. Patients are at high risk of serious complications such as coronary heart disease, stroke, kidney failure, and blood vessel damage, which can result in premature death. Hypertension can also lead to decreased work productivity, high absenteeism, and increased medical care costs, which burden individuals as well as the health system as a whole. In addition, uncontrolled hypertension can affect quality of life by causing chronic fatigue, shortness of breath, and decreased physical ability.¹³ Therefore, this study aims to find out the picture of health problems and provide priority for solving the problem of hypertension of productive age in the working area of the Tapos District Health Center in 2023.

Method

This study uses an analytical descriptive research method that aims to identify health problems, causes of health problems and provide alternative solutions to the problem of hypertension incidence in people of productive age in the Tapos Health Center work area. This research was carried out from November 1 to January 17, 2024. by interviewing 65 people as respondents. Data collection is carried out directly, including by means of observation, interviews, and literature studies. The data was analyzed using the data analysis method used by the *Criteria Matrix Technique*.

Result

The results of field observation and identification of problems in the UPTD Tapos Health Center work area show health problems related to hypertension in the area, including:

1. High exposure to passive cigarette smoke in productive age groups both in the home environment and in the public environment. It becomes serious which is mainly associated with an increased risk of hypertension disease, with a look at the risk of health problems. In addition, negative economic and social impacts, such as rising health costs and decreased productivity in times of illness, are also a concern. The toxic substances in cigarette smoke inhaled by non-smokers can also cause health problems, Nicotine, Tar, and Carbon dioxide in cigarettes trigger vasoconstriction, improve heart work, and thicken the blood. Carbon dioxide competes with oxygen so that it decreases the supply of oxygen to the body. Damage to the walls of blood vessels makes it easier to clot blood, increasing blood pressure. Active and passive smokers have the risk of causing reduced vascular elasticity and increased blood pressure due to vasoconstriction or tightening of blood vessels.¹⁴ Efforts to reduce the risk of exposure to secondhand smoke include limiting smoking spaces in public places (Non-Smoking Areas). However, there are still obstacles due to the high number of smokers in the household environment, so the risk of exposure in the home environment is not protected by
2. Lack of physical activity in productive age communities.
Low physical activity is also a significant problem, especially in people of productive age who are not active enough in daily life. Factors that cause massive physical activity in the community include the wrong perception that homework is included in sufficient physical activity and the lack of infrastructure that is easily accessible to the public in carrying out daily physical activities. This problem occurs when people of productive age do not do enough physical activity in daily life. Lack of physical activity leads to an increase in heart rate frequency and workload on the heart when pumping blood. This can increase the blood pressure that is loaded on the artery walls. It can also lead to decreased vascular elasticity and decreased endothelial function, which can reduce the ability of blood vessels. This problem occurs when people of productive age do not do enough physical activity in daily life, causing an increase in heart rate frequency and workload on the heart when pumping blood. This can increase the blood pressure that is loaded on the artery walls. It can also lead to decreased vascular elasticity and decreased endothelial function, which can reduce the ability of blood vessels to respond to and regulate blood pressure effectively.⁴
3. The low utilization of health promotion programs about hypertension by the community. The low public interest in health promotion can be caused by a lack of understanding of the importance of hypertension prevention, indifference to health problems, lack of access to appropriate information, or lack of active involvement in health promotion activities. The low interest of the public in utilizing health promotion related to hypertension is also a concern. Lack of awareness of the importance of a healthy lifestyle, limited access to health information, and low participation in health promotion programs can lead to an increase in the incidence of hypertension due to a lack of motivation in adopting healthy behaviors, such as a good diet, physical activity, and stress management. It can also result in a lack of understanding of the symptoms and risks of hypertension, as well as delays in searching, proper medical care, affecting long-term health.¹³
4. Lack of availability of instruments and methods of health promotion for hypertension prevention in the productive age community

The ineffectiveness of health promotion methods carried out such as counseling, dissemination *Leaflets* installation *banner* and posters as media. This occurs due to a lack of adjustment to the needs and preferences of the community, a lack of community participation in health promotion programs. Lack of awareness of the importance of a healthy lifestyle, limited access to health information, and low participation in health promotion programs are among the ineffectiveness of

health promotion methods. In theory, the ineffectiveness of health promotion methods in reducing the risk of hypertension in the productive age community can be caused by inadequate information delivery. Lack of awareness of the importance of a healthy lifestyle, limited access to health information, and low participation in health promotion programs are among the ineffectiveness of health promotion methods. In theory, the ineffectiveness of health promotion methods in reducing the risk of hypertension in the productive age community can be caused by inadequate information delivery, lack of community involvement, and obstacles in program implementation. Messages that are irrelevant or unappealing to the community can reduce the effectiveness of the program. In addition, the lack of active participation from the community in program planning and evaluation can also hinder the achievement of targets. Implementation constraints such as limited resources and accessibility to health services are also inhibiting factors.¹²

After all the problems are identified and collected, then formulate them. Not all problems can be solved at the same time, therefore it is necessary to simplify the problem so that priority problems are obtained.

In choosing a prioritized problem, the solution can be determined by various methods, in this case the author uses the *Criteria Matrix Technique*. This technique is further simplified by being divided into 3 types of assessments, namely: Importance of the problem (*Importancy*), Availability of technology to overcome the problem (*Technical Feasibility*), and Available resources (*Resources Availability*). The more important the problem, the more priority is to solve it. It consists of 3 assessment criteria:

1. **Importance of the problem (*Importancy*)**

The more important the problem, the more priority is to solve it. It consists of 3 assessment criteria:

a. **P (*Prevalency*)**

Assess how often the problem occurs with a score of 1 (problem never found) to 5 (Problem is very often found, so it is very important to prioritize)

b. **S (*Severity*)**

Assess how much impact the problem has caused with a score of 1 (the result of a non-serious problem) to 5 (The result of the problem is very serious, so it is very important to prioritize)

c. **RI (*Rate of Increase*)**

Assessing the average or rate of increase over time, if the increase in the number of problems is higher and faster than the previous period, then the problem is worth prioritizing. With a score of 1 (very slow problem increase) to 5 (Problem increase is very fast, so it is very important to prioritize)

2. **Availability of technology to solve problems (*Technical Feasibility*)**

The more feasible the technology available and that can be used to solve the problem, the more priority the problem is, the feasibility of the technology referred to here refers to the mastery of appropriate science and technology. Score 1 (technology is not available) to 5 (Technology is highly available and supportive, so it is very important to prioritize)

3. **Resources Availability**

The resources referred to here include man, funds, *materials*, methods and machines. If the resources available to solve a problem are available, the problem deserves to be prioritized. Score 1 (funds, facilities, manpower are not available) to 5 (Funds, facilities, and manpower are very available and supportive, so it is very important to be prioritized)

After each problem criterion has been assessed, the next step is to add up the total value by summing up the *Importancy criteria*

$$I=P+S+RI$$

Then it is multiplied by the criteria of *Technical Fesibility*, and *Resource Avability*. To be able to prioritize these problems, it is assisted by using the *Criteria Matrix Technique*.

Table 1. Matrix Priority of Risk Behavior Problems and Health Promotion on the Incidence of Hypertension in Productive Age Communities in the Work Area of UPTD Tapos Health Center, Depok City

| Problem | I | | | T | | R | IxT xR | Priority scale |
|---|---|---|---|---|---|-----|-----------|-------------------|
| | P | S | R | | | | | |
| High exposure to secondhand smoke in passive smoker: | 5 | 4 | 3 | 3 | 2 | 72 | IV | |
| Low physical activity in people of productive age | 4 | 4 | 4 | 4 | 3 | 144 | II | |
| Low public interest on the use of health promotion related to hypertension | 3 | 3 | 3 | 4 | 4 | 160 | I | |
| Lack of availability of instruments and methods of health promotion for hypertension prevention in the productive age community | 3 | 4 | 3 | 3 | 3 | 90 | III | |

Based on the results of the weighting of the problem priority matrix, the highest priority problem is the low public interest in health promotion (Priority Scale I). This shows the urgency to increase public awareness and participation in efforts to prevent hypertension.

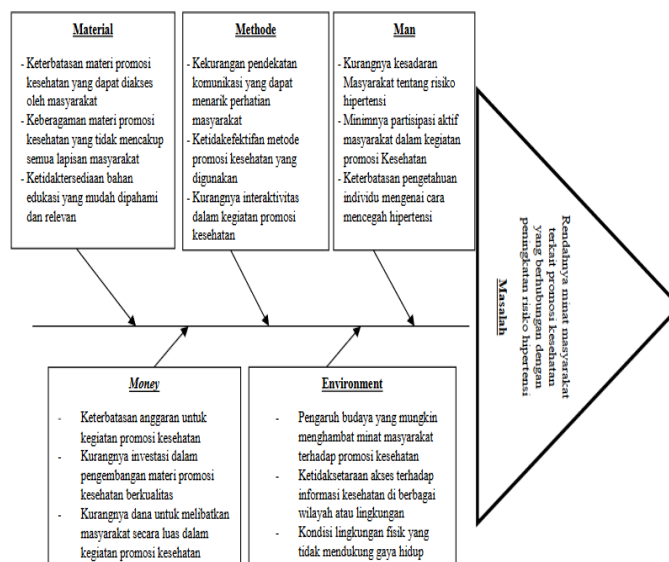


Figure 1. Diagram Ichikawa

The results of the analysis related to the causative factors in the priority of the above problems, it is known that based on *the material aspect*, there is a limited availability of health promotion materials about hypertension that can be accessed by the public or the available health promotion materials are not in accordance with the target community so that they are irrelevant or difficult to understand. In the aspect of methods, the lack of public interest in participating in health promotion is considered to be due to the less attractive health promotion method. In the aspect *of man*, the lack of public interest is caused by, among other things, the low level of public knowledge regarding the importance of hypertension prevention and control education. Based on the money aspect, it was found that there were budget limitations in the development of supporting instruments for health promotion or the allocation of funds to be involved in health promotion activities. Meanwhile, in the environmental aspect, the low interest of the community is due to cultural influences, unequal access to health information and physical environmental conditions that do not support lifestyles.

The lack of interest of the productive age group in participating in health promotion about hypertension has internal impacts, including a decrease in health, a decrease in quality of life, and a high risk of financial burden due to the need for necessary care and treatment costs. Broadly speaking, external impacts that may be caused include the burden of financing on the health system, lowering the degree of public health by increasing the risk of complications of the productive age community and obstacles to economic development.

Based on the results of the discussion, alternative problem solving includes:

1. Creating digital health media related to hypertension
2. Creating a facilitation program for the prevention of hypertension of productive age

Table 2. Problem-Solving Priority Techniques

| Alternative | Effective | | | Efficient | MxIxV C | Priority |
|---|-----------|---|---|-----------|------------|----------|
| | M | I | V | C | | |
| Creating an Application or Digital Media on Hypertension | 4 | 4 | 3 | 3 | 16 | II |
| Creating a Hypertension-related Continuing Health Program | 5 | 5 | 4 | 4 | 25 | I |

After identifying alternatives, then a priority is made to solve the problem using the Matrix Criteria Method Technique by paying attention to the level of effectiveness (*effectiveness*) by paying attention to the magnitude of the problem solved, the importance of how to solve the problem and the sensitivity or health of the way to solve the problem with a score of 1 (not effective in overcoming the problem) to 5 (very effective in overcoming the problem) while the level of efficiency (*efficiency*) is based on the cost required to carry out the method of solving problems with a score of 1 (solving problems with the most efficient costs) to a score of 5 (solving problems with very large costs or the least efficient).

Based on the results of the calculations, the priority of solving the selected problem is to prepare a facilitation program for the prevention of hypertension at productive age. Hypertension-related sustainable health programs include a range of activities aimed at improving overall public health, including hypertension prevention and management. With this approach, the community can be directly involved in health promotion activities, such as periodic health checkups, counseling, and joint sports activities. The main advantage of sustainable health programs is their effectiveness in providing a sustainable impact on public health. With continuous prevention, this program can create long-term behavioral change and affect an overall healthy lifestyle.

Discussion

During this study, problems were found at the research site, mainly related to the low public interest in health promotion. This is due to the lack of public awareness about the risk of hypertension, the lack of active participation of the community in health promotion activities and the limited knowledge of individuals on how to prevent hypertension. In overcoming this problem, the main step put forward is to create a sustainable health facilitation program related to hypertension prevention. There are several factors that affect the effectiveness of sustainable health programs related to hypertension, including community involvement, quality of health services, resources, communities, governments, non-governmental organizations, health industry, education, media, and technology.¹⁴

The hypertension-related health facilitation program is an initiative designed to provide holistic solutions in the treatment and prevention of hypertension in a community. The program involves a variety of interrelated strategies to achieve optimal health goals. This program emphasizes the importance of comprehensive health education to the public about hypertension, including its causes, symptoms, and long-term consequences on health. In addition, the promotion of a healthy lifestyle is the main focus by inviting people to adopt a balanced diet, reduce the consumption of salt, saturated fat, alcohol, and tobacco, and increase regular physical activity. The program includes a series of

activities that focus not only on knowledge about hypertension, but also on prevention, management, and long-term behavior change.

The effectiveness of the health facilitation program with the prevention of hypertension has been researched and developed through various strategies, one example of health facilitation that has been carried out is the theme "ATTENTION WITH CERDIK" this activity is to arouse the enthusiasm of participants to increase knowledge and improve physical activity and diet through the CERDIK program.¹⁵ Then in another study there is a health facilitation program with the theme BERSATU Overcome HypertensionI (BERANI) which focuses on family support in minimizing risk factors, lifestyle modifications, and hypertension management.¹⁶ In order to improve the effectiveness of the program, it is important to pay attention to risk factors for hypertension, such as an unbalanced diet, lack of physical activity, and stress, as well as to monitor the complications that can arise from uncontrolled hypertension.¹⁷

In this case, the researcher first carried out program planning by setting a clear goal, namely reducing the risk of hypertension through increasing public awareness and participation. The target population of the program is the productive age community in the work area of the Tapos District Health Center. The schedule of activities is prepared by taking into account the time and needs of the community, including periodic health checks, counseling, and joint sports activities. The budget was also set to finance all activities, including the purchase of props and print media. In previous research, it was stated that the flow of sustainable program planning with effective hypertension prevention involves several important stages, including goal determination, situation analysis, strategy development, program development, program implementation, program evaluation, media development, and technology development.¹⁸

Extension aids are carefully selected to maximize the effectiveness of information delivery. Poster *Leaflets*, and models of heart and blood pressure were used to provide a clear picture of hypertension and the importance of a healthy lifestyle. Additionally, animated videos and infographics are created to pique participants' interest and explain complex information in an easy-to-understand manner. This is in line with the statement of previous researchers that when a program is relevant to the interests and needs felt by the community, they will tend to be more interested in participating in the program.¹⁹

In the previous study, the same method was obtained where the implementation stages began with health checks, gymnastics, delivering material by the facilitator where participants were grouped first. After the implementation of health facility activities regarding the prevention and control of hypertension, the results were obtained that this health facilitation activity provided a difference in the knowledge of the participants before and after the activity.¹⁵ The health facilitation designed in this study has a novelty, namely providing education through flip sheet media and also with games related to hypertension prevention.

The program is carried out by identifying the health needs of the community or certain groups that have been carried out in this study. Furthermore, the planning of the development program includes implementation strategies, determination of the resources needed, as well as the design of educational materials and health activities that are in accordance with the needs of the participants, followed by the implementation of activities where at this stage the use of flip sheet media and educational games related to hypertension prevention. During and after the implementation of the program, monitoring and evaluation are carried out to measure the success and impact of the program on participants. This involves collecting data, measuring health or behavioral indicators, as well as objectively assessing the achievement of program objectives in this case using *pre-test* and *post-test*.

In its implementation, this program involves various parties, including the community, health workers, and community organizations. Evaluations are carried out periodically by collecting data on the number of participants, participation rates, knowledge, and behavior changes. The results of the

evaluation are used to prepare a final report and recommendations for future program improvement and development. Thus, this program is expected to have a significant positive impact on public health and reduce the risk of hypertension in the working area of the Tapos District Health Center.

Conclusion

Based on an overview of health problems faced by the productive age community in the work area of the Tapos District Health Center in 2023, there are several problems that are the main priority is overcoming the low public interest in health promotion. The identified solutions include digital health applications and sustainable health programs. Sustainable health programs are prioritized because they involve the community in the prevention and management of hypertension through periodic check-ups, counseling, and joint exercise. This approach is expected to increase public interest, reduce the risk of hypertension, and improve overall health. High exposure to secondhand smoke, low physical activity, low public interest in health promotion, and ineffectiveness of health promotion methods are challenges that must be overcome to reduce the risk of hypertension

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