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Community Service Activities - Counseling And Blood Pressure Screening (Hypertension Disease)

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Abstract

High blood pressure, also known as hypertension, is a severe health issue that has a significant impact on the quality of life of individuals. The purpose of community service activities that emphasize counseling and screening for high blood pressure is to raise public awareness of the significance of maintaining normal blood pressure and detecting and preventing hypertension early. Through this community service project, it is anticipated that greater awareness will be generated regarding the significance of maintaining normal blood pressure and preventing hypertension. People are becoming more committed to adopting a healthy lifestyle and undergoing routine blood pressure tests. The result will be a decrease in the incidence of hypertension, an improvement in life quality, and a decrease in the severity of complications associated with high blood pressure. Counseling and screening for high blood pressure are concrete measures in efforts to prevent and control diseases that pose a threat to public health. Through this strategy, it is anticipated that individuals will be more aware of the significance of cardiovascular health and have the necessary knowledge and skills to maintain normal blood pressure.

Keywords: Blood Pressure, Hypertension, Progression, and Early Detection

1. INTRODUCTION

High blood pressure affects all age groups. The number of individuals with high blood pressure continues to rise; approximately 50 million American adults (21.7%), 17 million Thai adults, 34.6% Vietnamese adults, 24.9% Singaporeans, and 29.9% Malaysians have high blood pressure. Approximately 30% of the global population is estimated to have undiagnosed hypertension (underdiagnosed condition). In Indonesia, hypertension prevalence ranges from 6 to 15%. This is because individuals with hypertension typically exhibit no symptoms or moderate symptoms. Organs such as the heart, kidneys, brain, eyes, and other organs are typically damaged by hypertension. Seventy percent of individuals with hypertension will experience heart injury. (Slamet Edi Susanto 2022)

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It is difficult to detect and control hypertension, making it a silent murderer. According to the World Health Organization (WHO), 1.13 billion people worldwide suffer from hypertension, with the majority (two-thirds) residing in low- and middle-income nations. In 2015, one in four men and one in five women have hypertension. In the meantime, hypertension is the leading cause of premature mortality worldwide. One of the global goals for non-communicable diseases is to reduce hypertension prevalence by 25 percent by 2025 (Balitbang Kemenkes RI 2018)

1. Uncontrolled hypertension (hypertension) can pose grave health risks and complications. If blood pressure remains elevated for an extended period of time, it can impair vital organs. Here are some of the risks and complications that can result from uncontrolled hypertension:
2. Cardiac Disease: Hypertension is a significant cardiovascular disease risk factor. Persistent elevated blood pressure can damage the arteries and lead to atherosclerosis (hardening of the arteries). This can induce coronary heart disease, heart attack, heart failure, and arrhythmias by reducing blood flow to the heart.
3. Stroke: High blood pressure is the leading cause of strokes. Blood vessels in the brain can be damaged by uncontrolled hypertension, resulting in rupture (aneurysm) or obstruction of blood flow to the brain. This can cause permanent brain damage, which can result in disability or even mortality.
4. Kidney Disease: Uncontrolled high blood pressure can cause kidney injury (nephropathy) by damaging the blood vessels in the kidneys. This can result in chronic renal failure requiring treatment with dialysis or a kidney transplant.
5. Eye Damage: Uncontrolled hypertension can damage the blood vessels in the eyes and result in retinal damage (retinopathy). Visual impairment, blindness, and eye disorders such as cataracts and glaucoma can result from diabetic retinopathy.
6. Problems with Blood Vessels: Uncontrolled high blood pressure can cause injury to the body's blood vessels. This can result in aneurysms, peripheral arterial disease, impaired circulation, and necrosis (tissue death) in the extremities.

Education and early screening are essential for the prevention, early detection, and management of high blood pressure. Education about high blood pressure provides the public with essential knowledge about hypertension, risk factors, symptoms, and the consequences of uncontrolled hypertension.(Fakhriyah et al. 2021)

People can learn through counseling the significance of maintaining normal blood pressure and how to adopt a healthy lifestyle to prevent hypertension. Information regarding the significance of a balanced diet, reducing salt intake, regular exercise, avoiding tension, and healthy weight management can assist individuals in taking the necessary precautions.(Hariawan and Tatisina 2020)

Early screening for high blood pressure also plays a significant role in identifying individuals at high risk or in the earliest phases of hypertension. Blood pressure can be routinely measured and individuals' health conditions can be monitored through early detection. This allows for earlier detection of hypertension and initiation of preventative measures.(Indriawati and Usman 2018; Nopa 2020)

With effective counseling and early screening, individuals can gain a greater understanding of high blood pressure and the measures that can be taken to prevent and treat it. Individuals can take proactive measures to adopt a healthy lifestyle, take regular blood pressure readings, and adhere to the treatment prescribed by medical professionals if they have a better understanding.(Ariyanti, Preharsini, and Sipolio 2020)

Counseling and early detection of high blood pressure are important in order to reduce the risk of hypertension-related complications such as heart disease, stroke, renal failure, and other health issues. Individuals can reduce their risk, enhance their quality of life, and maintain their long-term health through early detection and appropriate management.(Indriawati and Usman 2018; Nopa 2020)

Based on the background above, we carried out activities in the form of counseling and early blood pressure screening at productive age at Kalam Kudus II Jakarta High School which involved employees from the Kalam Kudus Jakarta Foundation.

2. METHOD AND MATERIAL

Methods, activity steps, and PDCA (Plan-Do-Check-Act) that can be carried out in blood pressure counseling and screening activities are as follows:

Method:

1. Extension: Extension methods may include lectures, group discussions, individual counseling, provision of written materials or brochures, as well as the use of visual media such as videos or presentations. The method chosen must be adapted to the audience to be conveyed, so that information can be conveyed clearly and easily understood.
2. Screening: Blood pressure screening methods usually involve measuring blood pressure using a sphygmomanometer. Screening can be done at health centers, workplaces, or locations that are easily accessible to the public. Procedures for measuring blood pressure must be carried out according to appropriate standards, including the use of calibrated devices and clear instructions for the individual being tested.

Activity Steps:

1. Planning: The planning stage involves identifying the target audience, determining the location and time of activities, and preparing educational materials. Planning also includes coordination with the medical team or related parties, preparation of screening tools, and recruitment of support personnel.
2. Implementation: In counseling, the material is conveyed to the audience using the chosen method. Information about high blood pressure, risk factors, symptoms, and prevention is provided in a clear and interactive way. During screening, the medical team carefully measured the participants' blood pressure and recorded the results.
3. Examination and Analysis: After the implementation of the activity, the data from the screening result is analyzed to identify individuals with high blood pressure or high risk. The data can also be used to evaluate the effectiveness of activities and identify trends or patterns in the incidence of hypertension in the community.
4. Corrective Actions: Based on the results of the analysis, corrective steps can be taken. This includes providing further information, individual counselling, referral to an appropriate health facility, or more intensive preventive measures. At this stage, it is necessary to take corrective actions and improve activities based on evaluation and feedback from participants and the medical team.

PDCA is a management cycle that can be applied in blood pressure counseling and screening activities. In this context, PDCA can be applied in the following steps:

1. Plan:
 - a. Identification of activity objectives, for example increasing public awareness about the importance of measuring blood pressure and preventing hypertension.
 - b. Plan the methods to be used, such as lectures, group discussions, or individual counseling.
 - c. Determine the target audience and location of activities.
 - d. Prepare clear and informative extension materials.
 - e. Coordinate with the medical team or related parties, and arrange activity schedules.
2. Do:
 - a. Carry out outreach activities using the planned method.
 - b. Deliver counseling materials clearly and interactively.

- c. Perform blood pressure screening carefully and follow the correct measurement procedures.
- d. Record screening results accurately.
- 3. Check:
 - a. Analysis of screening results to identify individuals with high blood pressure or high risk.
 - b. Evaluation of the effectiveness of counseling and screening activities, whether the goals have been achieved and whether there are aspects that need to be improved.
 - c. Review the data collected to identify trends or patterns in the prevalence of hypertension in the community.
- 4. Act (Remedial Action):
 - a. Based on the results of the analysis, take the necessary corrective steps.
 - b. Provide participants with further information, individual counselling, or referral to an appropriate health facility.
 - c. Re-evaluate the counseling materials and methods used, and make changes or improvements based on feedback from participants and the medical team.
 - d. Implement more intensive preventive measures where necessary.

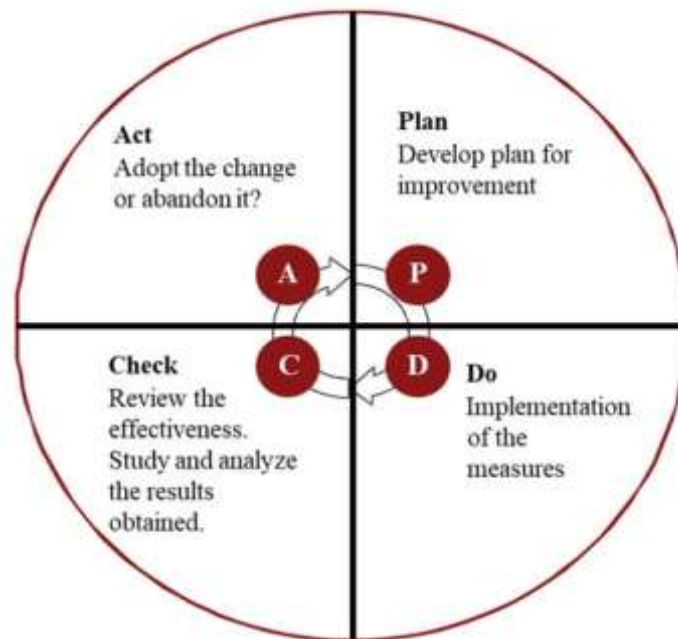


Figure 1. Plan, Do, Check, and Act Diagram (Nguyen et al. 2020)

3. RESULT AND DISCUSSION

There were 72 participants in this Community Service Activity, comprising 20 males and 52 women. All respondents received counseling, and their blood sugar levels were measured at the same time. Table 1 describes the outcomes of all events, while Figures 2-3 show images of the activities.

Table 1. Basic Data of Participants

Parameter	N (%)	Mean (SD)	Med (Min – Max)
Ages (years)		38,94 (13,18)	37 (19 – 60)
Gender <ul style="list-style-type: none"> • Male • Female 	20 (27,8%) 52 (72,2%)		
Systolic Blood Pressure (SBP) <ul style="list-style-type: none"> • SBP < 140 mg/dL • SBP ≥ 140 mg/dL 	55 (76,4%) 17 (23,6%)	125,46 (21,07)	120 (89 – 180)
Diastolic Blood Pressure (DBP) <ul style="list-style-type: none"> • DBP < 90 mg/dL • DBP ≥ 90 mg/dL 	55 (76,4%) 17 (23,6%)	82,74 (10,73)	84 (62 – 112)



Figure 2. Questionnaire Filling Process in the Context of Disease Risk Factor Detection



Figure 3. Activities in Checking Blood Pressure

High blood pressure, often known as hypertension, is a condition in which the blood pressure in the arteries remains consistently over normal. High blood pressure is mostly caused by hereditary factors, an unhealthy lifestyle, and environmental factors. A family history of high blood pressure, bad eating habits (heavy in salt and fat), obesity, lack of physical activity, smoking, excessive alcohol consumption, stress, and old age are all risk factors for developing hypertension.(Hoeper et al. 2013; Nerenberg et al. 2018)

High blood pressure is caused by an imbalance between blood volume and vascular resistance. Excess sodium in the diet, hormone imbalances, blood vessel damage, and nervous system malfunction are also contributors. Hypertension can also be caused by an underlying disease, such as renal disease, heart disease, diabetes, or thyroid problems.

High blood pressure can lead to major consequences if it is not controlled. Among these complications are:(Cerasola et al. 1996; Ogah et al. 2012; Sawicka et al. 2011)

- a. **Coronary Heart Disease:** High blood pressure damages the artery walls, increasing the risk of coronary heart disease, heart attack, and heart failure.
- b. **Stroke:** Hypertension can damage blood arteries in the brain, raising the risk of an ischemic (clogged) or hemorrhagic (ruptured) stroke.
- c. **Kidney Disorders:** Hypertension can cause kidney damage or failure by damaging the blood vessels in the kidneys.
- d. **Eye Disorders:** Hypertensive retinopathy, which causes vision loss, is caused by damage to the blood vessels in the eye.
- e. **Aneurysm:** Because high blood pressure causes expansion and weakening of blood vessel walls, the risk of an aneurysm (expanded blood vessel) rupturing increases.
- f. **Vascular Issues:** Hypertension can lead to circulation problems, restricted blood vessels, and decreased blood flow to the body's organs.

Understanding the meaning, risk factors, causes, and implications of high blood pressure is critical for raising public awareness of the issue. Individuals can take suitable preventive actions, such as living a healthy lifestyle, maintaining an optimal body weight, exercising frequently, minimizing salt consumption, avoiding stress, and undergoing regular health exams for detection, if they have a good knowledge.(Cerasola et al. 1996; Ogah et al. 2012; Sawicka et al. 2011)

Counseling and blood pressure screening have a critical role in preventing hypertension-related problems. Counseling on high blood pressure can give the public with accurate and clear information about the necessity of keeping blood pressure within normal ranges, as well as the variables that can influence it. Individuals can learn about the risks connected with hypertension and how to avoid them through counseling.(Indriawati and Usman 2018; Nugraha, Niniek, and Prasetyo 2019; Siregar, Sitanggang, and Paula 2019)

Furthermore, blood pressure screening can be a useful first step in the early diagnosis of hypertension. High-risk individuals can be recognized early by obtaining regular blood pressure measures. As a result, suitable interventions, such as lifestyle changes, food adjustments, exercise, or medication, can be provided swiftly. Regular screening also aids in the monitoring of variations in blood pressure over time, allowing for improved control and detection of any issues.(Indriawati and Usman 2018; Nugraha, Niniek, and Prasetyo 2019; Siregar, Sitanggang, and Paula 2019)

Integrated blood pressure education and screening encourages people to take preventive measures and better manage their blood pressure. Individuals tend to adopt a healthy lifestyle, maintain an optimal body weight, regulate their diet, exercise regularly, and stick to prescriptions recommended by medical experts when they have a better grasp of the hazards and importance of keeping blood pressure within normal limits. Thus, the importance of counseling and blood pressure screening in preventing hypertension consequences is critical for enhancing quality of life and lowering the disease burden associated with this condition.

4. CONCLUSION

Counseling informs the public on the importance of keeping blood pressure within normal ranges, risk factors, and preventive measures that can be implemented. Blood pressure screening, on the other hand, provides for the early identification of high-risk patients, allowing for early action to prevent consequences.

Individuals are more aware of the need of maintaining blood pressure within normal limits as a result of effective blood pressure counseling and screening. This can stimulate the adoption of a healthy lifestyle, dietary changes, frequent exercise, stress reduction, and regular blood pressure monitoring. As a result, the chance of developing serious hypertension problems such as heart disease, stroke, and organ damage can be considerably reduced.

The purpose of counseling and blood pressure screening is to educate the public about the importance of preserving cardiovascular health and recognizing and treating hypertension effectively. It is intended that by implementing preventative measures such as counseling and screening, the burden of diseases connected to hypertension will be reduced, the quality of life will improve, and society's life expectancy will be extended.

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