

Prevention of Hypertension through Screening and Education for At-Risk Populations in Prancak Glondong

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Abstract The prevalence of hypertension based on doctors' diagnosis in D.I Yogyakarta Province ranks second highest at the national level as reported in the 2018 Basic Health Research. Hypertension prevention is an important pillar of public health, especially in at-risk populations. Hypertension continues to be a public health threat, especially during the COVID-19 pandemic, where patients with comorbid hypertension have a six times higher risk of dying if infected with COVID-19. During the COVID-19 pandemic, non-communicable diseases, including hypertension, are slightly neglected due to the focus on the COVID-19 pandemic. The offered solution is to conduct offline and online screening and education activities related to hypertension. This program aims to mobilize community empowerment to prevent a non-communicable disease, hypertension. Offline and online screening and education activities related to hypertension were carried out on 75 people in 3 RTs (RTs 3, 4, and 5), Prancak Glondong Hamlet, with on-the-job training for cadres. Based on the results of the program, 23% of the screening results showed normal blood pressure. In comparison, the other 48% were found with the ACC/AHA classified as type II hypertension during the examination, with the majority of the age range of 45-65 years (59%). Community development was carried out through job training with three cadres. This program can help reactivate the community empowerment. Health promotion carried out during this community service can increase awareness of non-communicable diseases, especially hypertension.

1. INTRODUCTION

Kuliah Kerja Nyata (KKN), the student service learning program, at Universitas Gadjah Mada (UGM) has been implemented since 1971 as an optional intracurricular program for students and was stabilized in 1979 and set as a compulsory intracurricular program. Since 2006, KKN has changed to Student Community Services – Community Empowerment Learning (KKN-PKM) as a learning process for students and media for community empowerment. The program is planned based on a theme extracted from the community's potential, formulated and implemented by the community, which is expected to support the development of the community and the region to increase community's

welfare (KKN PPM Universitas Gadjah Mada, 2021). This paper discusses the intervention carried out in the third period (October-November) of KKN-PPM UGM 2021 in Panggungharjo Village, Sewon Sub-district, Bantul District, D.I Yogyakarta Province.

The KKN-PPM UGM unit assigned to Panggungharjo Village was divided into two sub-units; each sub-unit held its own program in particular hamlets in the village, namely Krapyak Kulon Hamlet and Prancak Glondong Hamlet. Prancak Glondong is one of the hamlets located in Panggungharjo Village, Sewon Sub-district, Bantul District, D.I Yogyakarta Province, Indonesia. Based on the 2018

aggregate population data, the population of Panggunharjo Village was 28,141 people, consisting of 14,140 males and 14,001 females. Prancak Glondong consists of eight RTs (Neighbourhood Units) (Pemerintah Kalurahan Panggunharjo, 2021). In this context, the intervention was specifically carried out by the sub-unit for Prancak Glondong Hamlet. channels with online transactions to reach potential. Based on the 2018 Basic Health Research (Riskesdas) by the Ministry of Health, the prevalence of non-communicable diseases in the D.I. Yogyakarta Province was consistently higher than Indonesia's average prevalence. The prevalence of hypertension based on doctor's diagnosis in the population aged older than 18 years in which this province ranked second with a percentage of 10.68% which is slightly above the average national prevalence of 8.4%. The target for people with hypertension aged 15 years in Yogyakarta City who received health services according to standards is 82% of the prevalence target or a total of 26,400 people, with a total achievement of 26,400 (100%) in 2019 (Departemen Kesehatan Republik Indonesia, 2013; Kementerian Kesehatan Republik Indonesia, 2019).

Hypertension is a comorbid disease with a risk of death six times greater than non-hypertension patients if infected with COVID-19. During the COVID-19 pandemic, people with hypertension are highly vulnerable to being exposed to COVID-19. During the COVID-19 pandemic, People with hypertension are highly vulnerable position to being exposed to Covid-19. The results of previous studies showed that the prevalence of hypertension was 31.2% among COVID-19 patients. In addition, 58.3% of hypertensive patients were admitted to the intensive care unit, compared to 21.6% of normotensive patients (Peng et al., 2021).

In the current pandemic, efforts to prevent and control hypertension have to be carried out as early as possible. Besides, prevention and control of hypertension can also anticipate or prevent disease worsening and prevent further complications (Kementerian Kesehatan Republik Indonesia, 2020). Prior to the COVID-19 pandemic, non-communicable disease screening became one of the routine programs of community health center (*Puskesmas*). During the COVID-19 pandemic, it is suspended, and when COVID-19 cases have dropped, this program still cannot be continued as community health center (*Puskesmas*) still needs to focus on the COVID-19 vaccination acceleration program. The COVID-19 vaccination program helps raise awareness and the importance of monitoring hypertension as blood pressure status becomes one of the requirements for vaccination (Kementerian Kesehatan Republik Indonesia, 2021)

Routine blood pressure checks are one of the preventive efforts against hypertension that can be done independently (CDC, 2023). Besides, hypertension-related education is also needed to increase awareness through health promotion and training for residents and cadres to increase public awareness of hypertension and the interest of cadres to carry out and facilitate these preventive activities independently.

2. METHOD

This program was held in 3 RT (3, 4, 5) in Prancak Glondong Hamlet, Panggunharjo Village, Swon District, Bantul Regency, Special Region of Yogyakarta, Indonesia in September-October 2021 with a total duration of 50 hours. Purposive sampling technique was applied to determine the sample with a target of 75 people recommended by cadres in the hamlet of Prancak Glondong.

The program was carried out in 3 stages, that was: Screening for hypertension in Prancak Glondong Hamlet offline, Providing offline education on hypertension in Prancak Glondong Hamlet, and Providing online education on hypertension in Prancak Glondong Hamlet. We were using sphygmomanometer, weight scales, and measuring tape for screening. For education, we use Leaflet, Poster, and Video of Education. Community Involvement in this program were: Community health center (*Puskesmas*) Sewon II to helping provide the tools needed, Cadres and the head of the village to helping facilitate activities, including schedule planning, site selection, and selecting target communities to participate in the events, and Student Community Services to prepare materials for the activities, conducting health checks, providing education, distributing materials to residents and health cadres and reporting data collection results to regional stakeholders.

3. RESULT AND DISCUSSION

From the interventions that have been carried out, we get a data of diagnostic hypertension in sample and population, distribution of participants with hypertension and get the education. We can also see the interest and impact of the education that has been given.

3.1 Determination of sample and population

From the predetermined target population, screening was carried out with the results of diagnostic data and participants with hypertension would receive education both online and offline. The following is data from samples and populations from both interventions.

3.1.1 Hypertension online education screening

The screening of non-communicable diseases held by KKN-PPM UGM involved 70 participants. The distribution of the participants by gender and age group can be seen on Table 1. The age ranges were based on the classification of the Ministry of Health of the Republic of Indonesia in 2009, covering Late Adolescents (17-25 years), Adults (26-45 years), Young Elderly (46-65 years) and Old Elderly (>65 years). Distribution of participants for screening and education for hypertension by age group shown in Table 2. Based on Figure 1 showed that the majority of blood pressure increases were in the age range of 46-65 years (100%), with Type 1 hypertension on the age range of >65 years (33%), Type 2 hypertension on the age range of 46-65 years (59%), and a hypertensive crisis on the age range of 26-45 years (50%) and 46-65 years (50%). The majority of the people suffering from hypertension are in the age range of 46-65 years.

Table 1 . Distribution of participants attending hypertension screening and education by gender

Gender	Amount
Man	24
Woman	46
Total	70

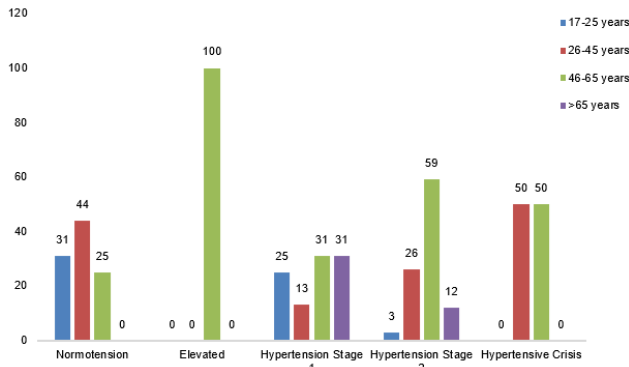


Figure 1 . Distribution of participants with hypertension by age range

Table 2 . Distribution of participants for screening and education for hypertension by age group according to the Indonesian Ministry of Health 2009

Classification	Description(years)	Amount
Late Adolescence	17-25	10
Adult	26-45	19
Pre-Elderly	46-65	32
Elderly	>65	9
Total		70

3.1.2 Online education

Seventy people who participated in screening and education, 54 (77%) experienced increased blood pressure or hypertension, either type 1, 2, or hypertensive crisis. Then, 12 (22%) of them could participate in online education using WhatsApp groups by sending a video presentation of material related to hypertension in the WhatsApp group. The material contained in it is risk factors for hypertension, signs and symptoms of hypertension, the importance of routine blood pressure checks, and management.

3.2 Prevention

The interventions carried out were screening, offline education and online education. From each intervention to get different results.

3.2.1 Hypertension screening

Based on Figure 2 showed that 16 people have normal blood pressure (23%), 2 people experience increased blood pressure or pre-hypertension (3%), and 52 people with the criteria of ACC/AHA stage I hypertension (23%), 34 people with ACC/AHA stage II hypertension (48%), and 2 people with ACC/AHA hypertensive crisis (3%). Table 3 shows the data on blood pressure screening results on 70 participants in RT 3, 4, 5 in Pracak Glondong Hamlet, Panggunharjo, Sewon, Bantul, DI Yogyakarta according to ACC/AHA 2017 (Whelton et al., 2018).

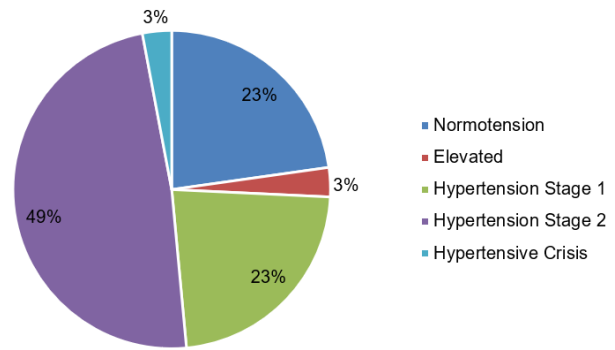


Figure 2 . Distribution of Pracak Glondong community screening participants based on the 2017 ACC/AHA blood pressure classification

Table 3 . Blood pressure classification for participants in Pracak Glondong, Panggunharjo, Sewon, Bantul, DIY based on ACC/AHA 2017

Classification	Systole (mmhg)	Diastole (mmhg)	Amount
Normotension	<120	and <80	16
Elevated	120-129	and <80	2
Hypertension Stage 1	130-139	or 80-89	16
Hypertension Stage 2	>140	or >80	34
Hypertension Crisis	>180	or >90	2
Total			70

3.2.2 Offline hypertension education

Activities were held on September 19th, 2021. It used educational media in the form of educational videos and leaflets that were distributed to participants during screening (Figure 3). During the implementation of the program, the community showed high enthusiasm proved by the number of attendance (70) of the total invitees (75). Indeed, the implementation complies with the health protocols. All participants wear masks and control the distance from one another, with a maximum of 6 people coming together. The results of offline screening showed that the rate of hypertension, especially undetected hypertension, was still quite high. In practice, the participants stated that they did not feel sick and had any symptoms that required a physical examination.

In other words, they did not want to go to the doctor or community health center (*Puskesmas*) as they did not feel sick. Besides, discussions with cadres revealed that even before the COVID-19 pandemic, this hypertension screening had been carried out, public education about hypertension, especially the importance of blood pressure checks that were still low. The previous screening had to wait for help and orders from community health center (*Puskesmas*) Sewon II. In this activity, prolanis cadres are included in the target of the activity so that at the same time educating cadres regarding health measurements,

especially blood pressure, blood sugar, and hypertension. It can be said that job training is also carried out for cadres. High-quality evidence from RCTs or programmatic evidence from NRCTs regarding the effectiveness and costs or disadvantages of various screening strategies for hypertension (mass, target, or opportunistic) to reduce hypertension-related morbidity and mortality is lacking. However, in several studies and opinions that by screening, for individuals who have been diagnosed with high blood pressure, disease management programs are recommended to improve hypertension care. Disease management is an organized, proactive, multicomponent approach to the delivery of health care for a specific disease such as high blood pressure. Disease management programs involve tracking and monitoring individuals with high blood pressure by a coordinated care team to prevent complications and the development of comorbid conditions such as diabetes (Schmidt et al., 2020).



Figure 3 . Screening and education documentation

3.2.3 Online hypertension education

Among 70 participants of the screening and education, 54 of them (77%) experienced increased blood pressure or hypertension, either type 1, 2, or a hypertensive crisis. Among 54 people, 12 people (22 participated in online education using WhatsApp groups. Online education was conducted on October 12, 2021, by providing hypertension education videos and a question-and-answer session. The barriers and challenges during implementation were finding the correct way to provide education without disturbing participants' comfort and the prioritized activities, such as accelerating vaccination programs. Online education using video conferencing platform faced some limitations, such as many participants stating that they could not use the handphone due to being used by their children or other family members. The use of WhatsApp as a means of educational media also caused low public interest, so that the study used video for socialization or education.

However, only a few participants responded via WhatsApp groups. Responses can be seen from the questions asked. Only 3 out of 12 participants asked questions related to hypertension. However, from WhatsApp media analysis, participants have seen the socialization video provided. Participants are more enthusiastic about participating in offline activities than offline screening and education activities. In the process, offline education is more interesting than online education,

so online education needs more careful preparation to provide more ideas, provide interesting things so that it can attract the enthusiasm of participants, and perhaps more precise scheduling is needed regarding the provision of education.

4. CONCLUSION

The community services program can help reactivate the community empowerment. Health promotion carried out during this community service can give important information about non-communicable diseases, especially hypertension, like signs and symptoms of hypertension, which are often neglected, inform about risk factors, and promote routine checkups as screening for hypertension. It also requires preventive efforts that can be carried out both in the long term and short term, which requires the role of the community component in its implementation. Screening for hypertension and other non-communicable diseases by community health center (*Puskesmas*) Sewon II provides an overview of the current status of health in Prancak Glondong Hamlet which can lead to future public health programs carried out by the community health center (*Puskesmas*).

Sustainable community development requires long-term follow-up and re-evaluation to ensure the size of the impact on society. The author suggests that the KKN-PPM UGM program advises future participants to continue the previous major initiatives in addition to creating new ones. Therefore, cadres and others will truly feel being part of a larger goal and path to create a healthier and more independent society so that this program can continue and it is hoped that this program can improve early diagnosis for patients with hypertension and can get the right treatment.

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CONFLICT OF INTERESTS

There was no conflict of interest during the implementation of the programs.

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