



The Evaluation of Blood Pressure and Hypertension Awareness of Residents Around Shofa Integrated Healthcare Center Cileunyi Bandung and Comprehensive Solution to Increase Hypertension Awareness

Evaluasi Tekanan Darah dan Kesadaran Hipertensi Warga di Sekitar POSYANDU Shofa Cileunyi Bandung dan Solusi Komprehensif untuk Meningkatkan Kesadaran Hipertensi

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Abstract

Hypertension is a non-communicable disease which is one of the main causes of premature death in the world and one of the most prevalence disease in Indonesia. Therefore, the control and the awareness of hypertension is considered as important, especially during current pandemic which is hypertension as one of the comorbidity of COVID-19. The community service was held in 26th February 2022 and collaborates with integrated healthcare center Shofa 11 Cileunyi, Bandung. The community service activities including health counseling, blood pressure measurement, and health consultations. Information about the hypertension awareness of the participants was collected with discussion method during the health consultation and counselling. The participant demography was dominated by female within the age of 31-40 and 50-60 years old. Only 24 % of the participants has normal blood pressure and the majority blood pressure status are categorized as pre-hypertension. Only 8% percent of the participants are aware of their blood pressure status and get checked routinely. A comprehensive action is necessary to improve the hypertension awareness and prevalence, which include a free telemedicine and monitoring mobile application system, digital healthcare system conducted by government, paired with the establishment of medical check-up sites nearby each of the neighbourhood.

Keywords: Awareness, Checking, Counseling, Hypertension, IHC

Abstrak

Hipertensi merupakan penyakit tidak menular yang menjadi salah satu penyebab utama kematian di dunia dan salah satu penyakit dengan prevalensi terbanyak di Indonesia. Oleh karena itu, pengendalian dan penyadaran terhadap hipertensi dinilai penting, terutama pada masa pandemi karena hipertensi merupakan salah satu komorbiditas COVID-19. Pengabdian kepada masyarakat ini dilaksanakan pada tanggal 26 Februari 2022 bekerjasama dengan Puskesmas Shofa 11 Cileunyi, Bandung. Kegiatan pengabdian kepada masyarakat meliputi penyuluhan kesehatan, pengukuran tekanan darah, dan konsultasi kesehatan. Informasi tentang kesadaran hipertensi peserta dikumpulkan dengan metode diskusi selama konsultasi dan konseling kesehatan. Demografi peserta didominasi oleh perempuan berusia 31-40 tahun dan 50-60 tahun. Hanya 24% partisipan yang memiliki tekanan darah normal dan sebagian besar berstatus prehipertensi. Hanya 8% persen dari peserta yang mengetahui status tekanan darah mereka dan memeriksakan diri secara rutin. Diperlukan tindakan komprehensif untuk meningkatkan kesadaran dan prevalensi hipertensi, yang mencakup sistem aplikasi selular

seperti *telemedicine* dan pemantauan, sistem kesehatan digital dari pemerintah, dilengkapi dengan pendirian tempat pemeriksaan kesehatan yang dekat dengan pemukiman warga.

Kata Kunci: Hipertensi, Kesadaran, Konseling, Pemeriksaan, Posyandu

1. INTRODUCTION

Hypertension is a non-communicable disease which is one of the main causes of premature death in the world. The World Health Organization (WHO) estimates that currently the global prevalence of hypertension is 22% of the total world population. Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first cases of this new disease began in Wuhan, China, in December 2019. Some research results show that the mortality rate in COVID-19 varies, some say 2.84%, other studies say 15%, and 33%. The severity of COVID-19 is influenced by endurance, age, and several comorbid diseases, including asthma, diabetes mellitus, and hypertension.

COVID-19 co-morbidities are diseases that the patient suffered or had before being infected with the corona virus. This co-morbidity can worsen the patient's condition because the body's immune system is low and has to work harder to fight the virus. Therefore, they are more susceptible to the corona virus and the death rate is higher[1]. Although the vast majority of people who contract COVID-19 have only mild or uncomplicated illness, about 14% have severe illness requiring hospital care and oxygen support, and 5% need to be admitted to an intensive care unit. Hypertension can be an intermediary for cardiovascular risk factors which can show an increasing prevalence with increasing age [2].

Restrictions on activities outside the home, which are included in the health protocol during the pandemic, have an impact which is related to increasing self-medication by the community and early prevention for those who have co-morbidities. With the current goal of maintaining better health conditions during the pandemic, many people have started to check themselves to the nearest public medical center when they experience symptoms of comorbid disease including hypertension. So it is necessary to provide education related to hypertension disease counseling and routine blood pressure monitoring.

Community service related to hypertension have been carried out at various location in Indonesia which are dominantly in Java, and a few in Sumatra, and Kalimantan island. Generally, the target of community service are the community or/and local health cadres. The methods that are often used in providing health education are lectures and discussion methods. The media used are generally in the form of powerpoint presentations, leaflets, and flipcharts with common topics covered including hypertension disease, the urgency of hypertension prevention and treatment, signs and symptoms of hypertension, hypertension prevention, hypertension treatment, diet for hypertensive patients, and blood pressure test demonstration. The pre-test and post-test method are commonly used as the community service evaluation method with most of the results show an increase in the knowledge of the audience[3]–[21].

The team of lecturers from the Pharmacy Study Program, University of Muhammadiyah Bandung held community service with counseling related to hypertension and free blood pressure measurement for residents of the Villa Pajajaran Permai Complex, Kec. Cileunyi, Kab and Posyandu Shofa 11 partners C. It is hoped that in the future this service activity with the theme of health will become a scheduled socialization activity, as well as an appeal and education to the community to keep active in carrying out a healthy lifestyle, not only during the pandemic. In the discussion during the health consultation, several information related to the hypertension awareness among the participants were collected and evaluated in this journal as the consideration for future community service.

2. MATERIALS AND METHOD

The community service was held in 26th February 2022 and collaborate with integrated healthcare center Shofa 11 Cileunyi, Bandung. The community service activities including health counseling, blood pressure measurement, and health consultations. The consultation used a brochure as the education media, while the health counselling use power point presentation. The presentation topic was about the definition, causes, signs, management and prevention of hypertension.

Information about the hypertension awareness of the participants was collected with discussion method during the health consultation and counselling. The results of the discussion during the consultation were analysed, concluded descriptively, and elaborated in the discussion section of this paper. Figure 1 illustrate the topic of the community service conducted which are related to the most common causes and the risk factors of hypertension in major life aspects including residents, environment, and lifestyle. The topic of the conducted community service shown in Fig 1 along with the documentation of event in Fig 2.

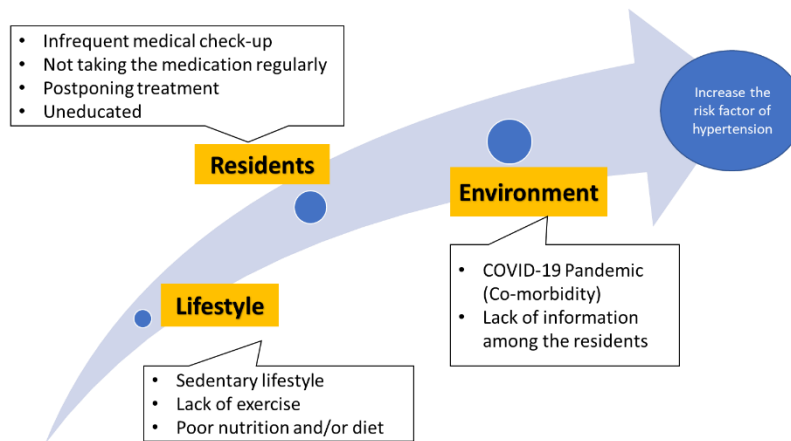


Figure 1. The topic of the conducted community service

3. RESULTS AND DISCUSSION

3.1 Evaluation of Blood pressure measurements and discussion during the health consultation



Figure 2. Documentation of the community service. (A) Blood pressure measurement, (B) Hypertension education

Based on the criteria of the Joint National Committee on Prevention Detection, Evaluation, and Treatment or High Pressure VII/JNC-VII 2003, the categories of hypertension are as follows: Normal (<120/<80 mmHg), Pre-hypertension (120-139/80-89 mmHg), stage 1 hypertension(140-159/90-99 mmHg), stage 2 hypertension (>160/>100 mmHg). From the results of blood pressure checks, data obtained from the number of correspondents as many as 25 people with 23 female and 2 male. Age 20-30 years as many as 4 people, 31-40 years as many as 7 people, 41-50 years as many as 3 people, 51-60 years as many as 7 people, 61-70 years as many as 4 people. From 25 people there are 6 people with normal blood pressure, 8 people with pre-hypertension, 7 people with stage 1 hypertension and 4 people with stage 2 hypertension, age 20-30 years, 2 people with normal blood pressure and 2 people with pre-hypertension; age 31-40 years 2 people with normal blood pressure, 4 people with pre-hypertension, and 1 person with stage 1 hypertension; age 41-50 years 1 person with normal blood pressure, 1 person with stage 1 hypertension, and 1 person with stage 2 hypertension; age 51-60 years 3 people with pre-hypertension, 2 people with stage 1 hypertension and 2 people with stage 2 hypertension; age 61-70 years 1 person with pre hypertension, 2 people with stage 1 hypertension and 1 person with stage 2 hypertension. Out of 23 women there are 6 people with normal blood pressure, 8 people with pre hypertension, 6 people with stage 1 hypertension and 3 people with Stage 2 hypertension. For men, there is 1 person with stage 1 hypertension and 1 person with stage 2 hypertension.

The examination and education activities went well and the participants became more aware to their blood pressure and and know more about hypertension management and prevention since it was emphasized

during counseling to monitor blood pressure and have a healthy diet to prevent or manage hypertension. Most of the question asked during the QnA session after the counselling are about the treatment of hypertension, the side effect of the treatment, the consequence of not treating the disease, and whether the hypertension can be totally cured or not. During the health consultation, it was found Most of the patient which the majority have abnormal blood pressure are not aware about their blood pressure before. Only 2 participants, who are spouses, are aware about their blood pressure condition and routinely monitored. Most of them also not aware about the symptoms and consequence of having an abnormal blood pressure or hypertension as the most common comorbidity COVID-19. The distribution of patients' data can be seen in Fig 3.

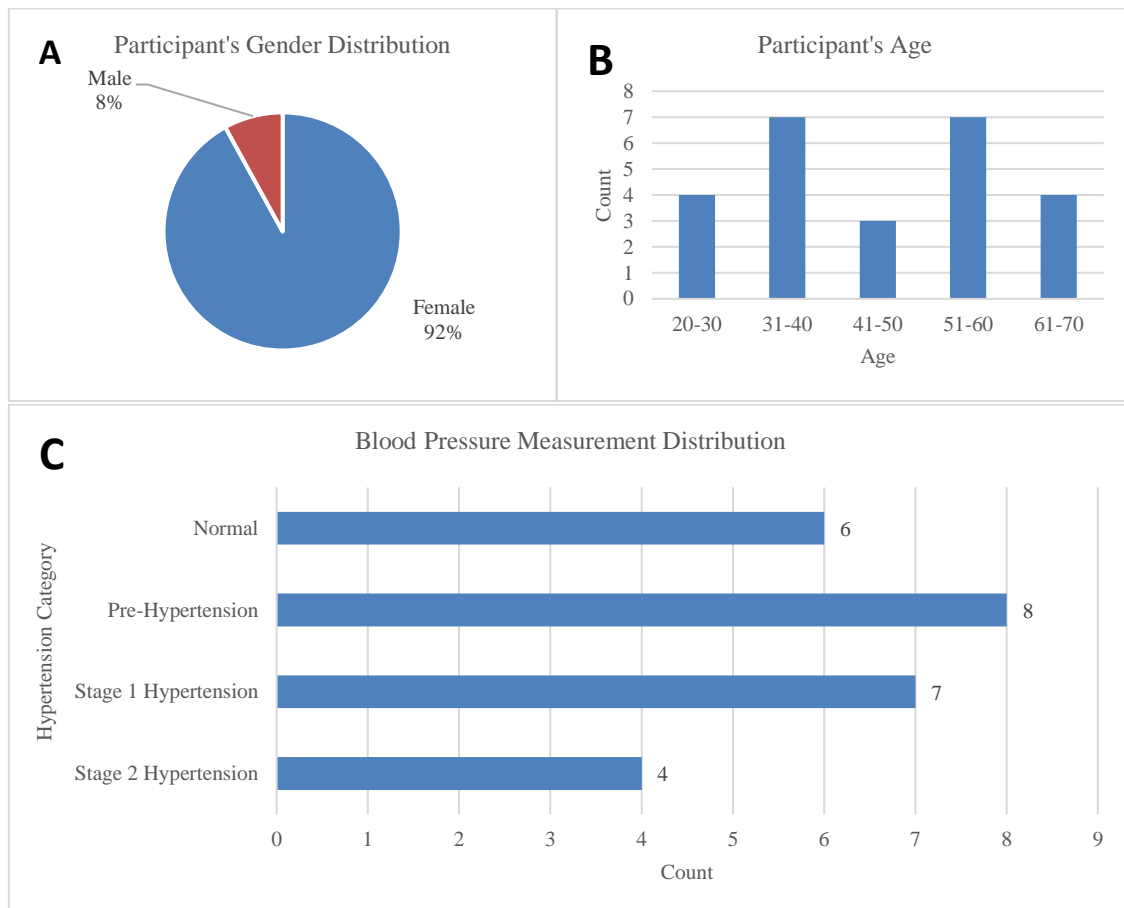


Figure 3. The distribution of (A) gender, (B) age, and (C) blood pressure of the participants.

3.2 Hypertension awareness in IHC Shofa as depiction of awareness in national scale

In 2013 the results of the Riskerdas show that the prevalence of hypertension in Indonesia is high, reaching 25.8% and increasing to 34.11% in 2018 in the population >18 years. In addition, hypertension control has not been adequate even though effective drugs are widely available[22]. In 2015 it was estimated that 1 in 4 men and 1 in 5 women had hypertension[23]. This indicates that hypertension patient is dominated by men but that the number of men who are aware of hypertension is far less than women based on the number of participants in this counselling.

From the gender factor, men tend to be more prone to hypertension, this is likely because men have more factors that drive hypertension including stress, fatigue, and uncontrolled eating patterns. In general, men over the age of 31 are more susceptible to hypertension, while in women it occurs after the age of 45 years, namely after menopause[24]. This shows that hypertension in Indonesia occurs evenly at various ages and increases with age. A person will be more susceptible to experiencing hypertension if there is a family member with a history of hypertension. In addition, someone who is over 65 years old and has congenital diseases such as diabetes and kidney disorders are also at a higher risk of developing hypertension. Risk factors for hypertension that we can control can be present from an unhealthy diet, a sedentary lifestyle, consumption of cigarettes and alcohol, and obesity[23].

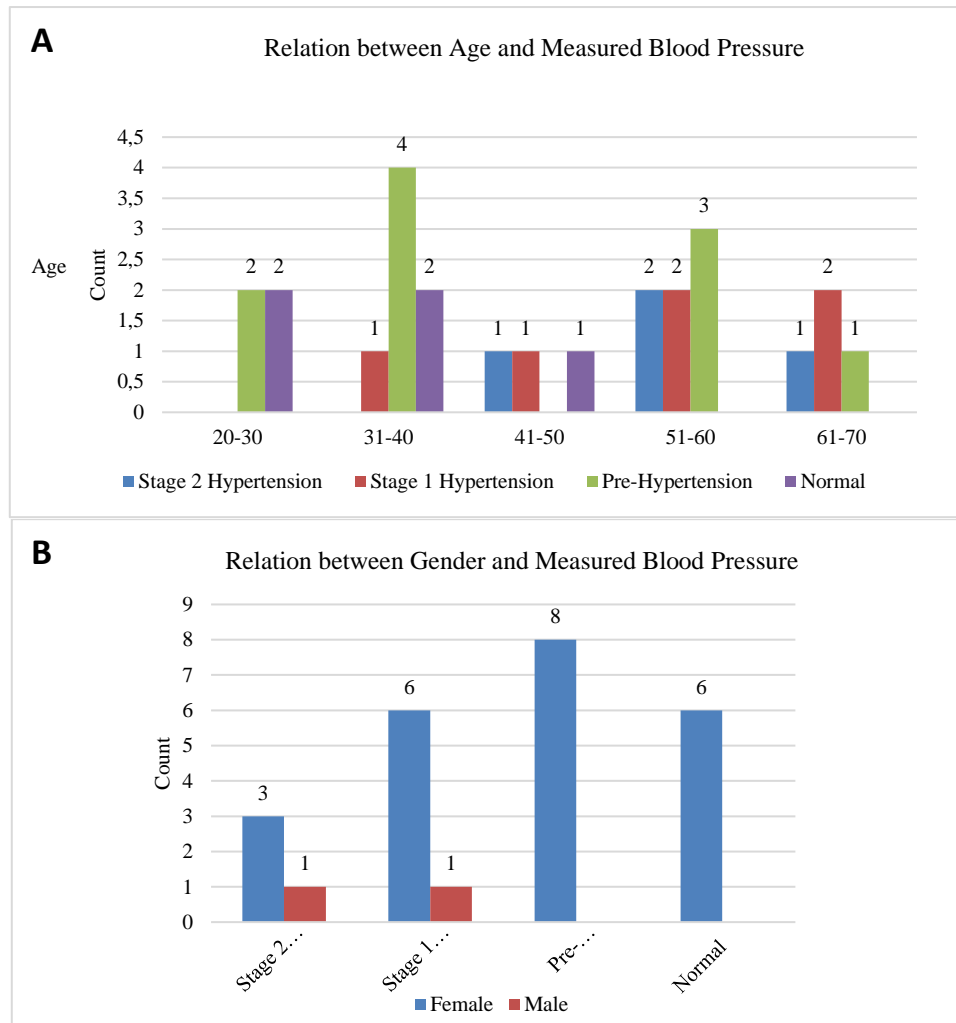


Figure 4. The relationship of blood pressure with (A) age and (B) gender.

The lack of awareness is majorly due to lack of awareness of the complications caused by the untreated hypertension and asymptomatic characteristic of hypertension. These things brought the name of the silent killer for hypertension. Basic health research conducted by the Indonesian ministry of health reported that in public health care only one-third of hypertension cases were clinically diagnosed by the health professional and only 0.7% were treated[25]. Other than the characteristic of the disease, the cause of the unawareness might be due to the economic condition of the Indonesian majority which consists of 44.5% of the low middle class (earnings between Rp. 532.0000-Rp. 1.200.000)[26]. Therefore, most Indonesian consider healthcare as a luxurious and the consequence is that they will not treat the disease until it decapacitates them to earn for living which in the case of hypertension are the developed complication such as heart attack and kidney failure which have already occur and difficult to treat due the organ damage and cost of treatment. It can be observed from research that there is relationship between blood pressure and age and gender as shown in Fig 4.

3.3 The urgency of improving awareness of hypertension in Indonesia

The awareness of hypertension improvement can bring benefits directly to governments and citizens. In 2019, about 230 million of citizens were registered in the Health Social Security Agency (BPJS) and about 30-40% of the budget goes to take home treatment. Among the registered BPJS participants, 11 million are hypertension patients. The number is considered as huge especially considering the cost needed for the following treatment if the complications such as stroke, heart disease, and kidney failure. These catastrophic complications absorbed 30% of the total budget[27]. Furthermore, in addition to budget consideration, a lifelong treatment is necessary to control hypertension. In the perspective of each citizen, hypertension and its complications may cause degradation towards life quality and welfare. The disease may inhibit routines and increase the risk when doing daily activities. In addition, since the treatment is lifelong, the patient should get their blood pressure checked routinely which should consider schedule, cost, and effort. Hence both

government and citizens are in an urge to improve the awareness and prevent the occurrence of hypertension in order to save cost, effort, and time.

3.4 Approach in improving awareness and prevent the occurrence of hypertension

All parties including Government, health professionals, public policies maker, IT expert, and citizens have to cooperate in order to lower the number of hypertension occurrences because the risk factors of hypertension are integrated into each party and systematically. Each of the parties should act according to their functions and authority. Several programs can be implemented such as physician for family which can be integrated in BPJS, community service by health education institute in a form of health consultation and counselling, routine free medical check-up by public health centre which play as the first health care facilitation [28].

Several innovative approach of community service approaches including the utilization of local resource such as tea from Dayak shallot (*Eleutherine palmifolia*) to lower blood pressure, the demonstration of hypertension exercise, and developing a buddy or group of local hypertension patients in order to support each other well being. More comprehensive and important topic also have been brought, which are including the implementation of non-conventional treatment to lower blood pressure, methods to decrease headache caused by hypertension, and prevention of coronary heart disease as the complication of hypertension [3]–[21].

Most of the programs have been done and each party has taken actions, but the number of occurrences is still high. This hypothetically are caused by the incomprehensiveness and solitary effort. To achieve significant results, all of the risk factors should be minimized simultaneously which are summarized in the program of Indonesian Ministry of Health called ‘CERDIK’. The program are campaigning about regular health checks, smoke cessation, routine physical activity, healthy diet with balanced calories, and adequate rest and stress management [12]. The program comes with efforts and should be embedded in the lifestyle and systematically in order to be established.

The comprehensive and integrative solutions required a multidisciplinary collaboration since the approach involving health science, technologies, and public policies. To build a system as a sustainable solution, it is a compulsory to include financial consideration which drive the system as a business model. Therefore, to increase the rate of success, optimum design of integrated system as solution should be developed and the gap towards the actualization should be diminished to the minimum which is feasible especially in this era of technology. In addition, the feasibility increases due to the possibility to integrate the citizen’s daily routine with the most adjacent gadget of human being, the handphone, which enables people to use mobile applications to track their health, or for government to provide digital healthcare.

Several local applications have been built to control hypertension including Detection of hypertension (Detensi) and Application of Control of Hypertension (AKSI)[27], [29]. Both applications can be used to monitor risk factors of hypertension including body mass index and hereditary risk factor. Another approach to close the gap was free telemedicine consultation which should be held routinely. Nowadays, one of the most frequently used applications for telemedicine consultation is halodoc (<https://www.halodoc.com/>). This opens the possibility for the government to make digital primary first care with the bill integrated into the BPJS system. This has become one of the National Health Service of United Kingdom programs which is published in 2019. The online tools provide online consultation request which will be responded according to the clinical condition of the patients. The responds may be an offer of the face-to-face, a video, or online message consultation. Digital solution is a suitable solution especially during the pandemic COVID-19 which have the hypertension as one of its comorbidity [30].

Despite all the possible technologies and solutions, the fundamental hindrance in closing the gap is that the blood pressure measurement cannot be conducted by handphone. Current technology still uses an additional device that connects to the phone to monitor the blood pressure and the device might be considered as costly by the majority of Indonesian. Hence, the adjacent healthcare facility, such as public health care centre, pharmacy, and if possible, including each neighbourhood center, ideally can provide blood pressure measurement and other important health check-up as well. The combination of adjacent blood pressure measurement sites, monitoring by the application, and digital healthcare can feasibly address awareness, risk factor, and prevention of hypertension. The effort or cost to build the system of prevention of hypertension, and other high prevalence diseases such as diabetes, is comparable to the budget of the treatment of hypertension and its complications.

4. CONCLUSION

The community service in IHC Shofa 11C Cileunyi, Bandung has been carried out well in 26th February 2022. Through health checks and education, it is hoped that residents will help maintain and improve the blood pressure status as an effort to prevent and treat hypertension, which is a co-morbid condition of COVID-19. For significant improvement in the awareness and lower occurrences of hypertension, a comprehensive systemic solution is necessary, which drive further community service to be directed more into established a free telemedicine and monitoring mobile application system, digital healthcare system conducted by

government, paired with the establishment of adjacent medical check-up sites nearby each of the neighbourhood.

ACKNOWLEDGMENTS

The community service was supported by Muhammadiyah Bandung University. We thank our colleagues from Shofa Integrated Healthcare Cileunyi Bandung who provide the facilitations for the community service.

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