

Early Detection of Hypertension in Elderly and Improving The Quality of Life through Healthy Life Behavior

Fazidah A Siregar, Asfriyati, Lita Sri Andayani*

Faculty of Public Health, Universitas Sumatera Utara, Medan, 20155, North Sumatera, Indonesia

Abstract. Hypertension is common in the elderly people. The disease is related to unhealthy lifestyles including unhealthy food habitual and lack of physical activity. Delay in detecting and handling the symptom will have an impact on the quality of life. A community service had been carried out at Tanjung Anom Village, Pancurbatu subdistrict, Deli Serdang. The purpose of this activity was to detect hypertension through health examination (height, weight, waist size, blood pressure, blood sugar levels, cholesterol and uric acid level). The activity was followed by education for the elderly on healthy lifestyles, elderly gymnastic exercise and preparation of their healthy menu. Of the 49 elderly were present, 26 people (53.1%) were obese, 12 people (24.5%) had diastolic hypertension, and 30 people (61.2%) were at the stage of prehypertension. Based on the risk factors, 7 people (14.3%) had high blood glucose levels, 38 people (77.6%) had high cholesterol levels and 28 people (57.1%) with high uric acid levels. It was concluded from the results that most of elderly have high blood pressure. To reduce the number of hypertensive patients in the elderly, it is necessary to have an early symptom detection and apply a healthy lifestyle.

Keywords: Hypertension, High Blood Pressure, Elderly People, Healthy Life Styles, Quality of Life

Abstrak. Hipertensi sering terjadi pada orang tua. Penyakit ini terkait dengan gaya hidup tidak sehat termasuk kebiasaan makan yang tidak sehat dan kurangnya aktivitas fisik. Keterlambatan dalam mendeteksi dan menangani berdampak pada kualitas hidup. Layanan masyarakat telah dilakukan di Desa Tanjung Anom, Kecamatan Pancurbatu, Deli Serdang. Tujuan dari kegiatan ini untuk mendeteksi hipertensi melalui pemeriksaan kesehatan (Tinggi, berat badan, ukuran pinggang, tekanan darah, kadar gula darah, kolesterol, dan kadar asam urat), diikuti dengan pendidikan tentang gaya hidup sehat dan latihan senam lansia dan persiapan menu

*Corresponding author at: Jalan Universitas no 21, Kampus USU. Padang Bulan. Medan 20155

E-mail address: fazidah@usu.ac.id

sehat. Dari 49 lansia yang hadir, 26 orang (53,1%) mengalami obesitas, 12 orang (24,5%) mengalami hipertensi diastolik, dan 30 orang (61,2%) berada pada tahap prehipertensi. Berdasarkan faktor risiko, 7 orang (14,3%) memiliki kadar glukosa darah tinggi, sebanyak 38 orang (77,6%) memiliki kadar kolesterol tinggi dan 28 orang (57,1%) dengan kadar asam urat yang tinggi. Dari hasil tersebut, sebagian besar lansia memiliki tekanan darah tinggi. Dalam upaya mengurangi jumlah penderita hipertensi pada lansia, perlu dilakukan deteksi dini dan menerapkan gaya hidup sehat. Dari 49 lansia yang hadir, 26 orang (53.1%) mengalami obesitas, 12 orang (24.5%) mengalami hipertensi diastolik, dan 30 orang (61.2%) sudah pada tahap prehipertensi. Berdasarkan hasil pemeriksaan faktor risiko, 7 orang (14,3 %) memiliki kadar gula darah yang tinggi, sebanyak 38 orang (77,6%) memiliki kadar kolesterol tinggi dan 28 orang (57,1%) dengan kadar asam urat tinggi. Dari hasil terlihat indikasi lansia yang mengalami hipertensi adalah tinggi. Dalam upaya menekan jumlah penderita hipertensi pada lansia, perlu deteksi dini dan menerapkan pola hidup sehat.

Kata Kunci: *Hipertensi, Lansia, Pola Hidup Sehat, Kualitas Hidup*

Received 22 October 2018 | Revised 10 February 2019 | Accepted 1 April 2019

1. Introduction

Hypertension is a global health problem worldwide. Prevalence of the disease increases annually and it is related to lifestyle changes. Hypertension kills nearly 8 billion people every year in the worldwide and 1.5 million of them occur in the South East Asia region [1]. It was estimated that the occurrence of high blood pressure in developing countries will be increased as much 80% in 2025 [2].

In Indonesia, the frequency of hypertension tends to increase. According to Basic Health Research Data, the prevalence of hypertension increased from 7.6 per 100,000 population in 2007 to 25.8 per 100,000 in 2013, while the proportion of people with high blood pressure in North Sumatra was 24.7% [3].

Globally, the proportion of elderly people was 11.7% of the total world population in 2013 and it was estimated that the number will raise with the increasing age life expectancy [1]. The aging process will have an impact on the decrease in the elasticity of blood vessel walls which causes the emergence of health problems in the elderly, including hypertension. Hypertension is a common health problem in the elderly (60%). The incidence of hypertension increasing with age. The disease commonly begins at the age of 30 years, and reach the peak at the age of 40-50. A study reported that 87% of hypertension was found at the age of 50-59 years old [4].

The cause of most of hypertension (90%) are unknown [5]. Therefore, if the disease is not detected early and treated with adequate treatment, it will initiate a big problem, because the disease will attack the target organs and cause heart attacks, strokes, kidney disorders and blindness that having an impact to quality of life [6].

Pancur batu District is one of the sub-districts in Deli Serdang Regency with a high number of hypertensive patients. The data from Pancur batu Health Center in 2016 showed that there were 2469 hypertensive patients. Tanjung anom village is one of the villages in Pancur batu District where the number of hypertensive patients is quite high. Data from the village showed that there were 2931 elderly people consisting of 1416 men and 1515 women. As many as 30% of elderly men and 40% of elderly women experience hypertension. The incidence of hypertension is quite high and needs more attention.

Hypertension could affect productivity and quality of life elderly and related to unhealthy lifestyle such as unhealthy diet, lack of physical activity, and metabolic risk factors underlying hypertension such as the high blood sugar, high cholesterol and high uric acid levels. The incidence of hypertension in the elderly is increasing. Therefore, it is necessary to identify the risk factors that can trigger hypertension in the elderly through the measurement of blood pressure, blood sugar, blood cholesterol and uric acid levels. Then, training is held to educate the elderly to apply gymnastic and healthy diet to accomodate the elderly with good quality of life and productive. The aim of this community activities was to increase knowledge of participants on how to prevent hypertension through healthy lifestyle and healthy diet.

2. Methods

Method of the community service was:

- a. Checking health status underlying hypertension including blood pressure, blood sugar levels and cholesterol levels, and examination of uric acid level. From the results, it was expected that elderly people know health conditions and make intervention.
- b. Health education regarding hypertension and prevention
- c. Training activity including exercise and healthy diet for the elderlies

3. Results and Discussion

The community service activities were held on Saturday 12 May 2018 at Tanjung Anom Village, Pancur Batu, District of Deli Serdang with the target of 49 elderly people. Most of them were women of 42 (85.7%), while men were only 7 (14.3%). Based on nutritional status, most of them (53.1%) were obese, 18.4% with excess body weight, 26.5% with normal weight and only 2% with less weight. Based on the waist circumference, 8 people (16.3%) were with a risk waist circumference.

Based on measurement of systolic blood pressure, it was found that 17 people (34.6%) had systolic hypertension, while 30 people (61.2%) were at the stage of prehypertension. Moreover, the evaluation based on diastolic blood pressure discovered that most of them (69.4%) were at the stage of the prehypertension and 12 people (14.5%) had hypertension.

The mechanism of high blood pressure is due to overweight, through insulin resistance and hyperinsulinemia and activation of sympathetic nerves and the renin-angiotensin system. According to National Institutes for Health USA, prevalence of high blood pressure in people with Body Mass Index (BMI) > 30 (obesity) is 38% for men and 32% for women. In the meantime, people with BMI < 25 have a high blood pressure prevalence of 18% and 17% for men and women, respectively.

Based on the examination of non fasting blood sugar levels, most of the elderly (85.7%) had normal blood sugar levels, while 7 people (14.3%) had high blood sugar levels. Based on the observation of their cholesterol, it was reported that most of the elderly (77.6%) had high levels of cholesterol and only 22.4% of them had normal cholesterol levels. Likewise, the results of uric acid examination showed that half of elderly (57.1%) had high levels of uric acid.

Framingham heart research states the relationship between cholesterol levels and blood pressure. In line with this research, it was discovered that high blood cholesterol levels is found in many people with hypertension. The increase of cholesterol levels is related with fat deposits that can reduce the elasticity of blood vessels in regulating blood pressure causing high blood pressure [9]. Many epidemiological studies have shown an increase in the risk of Congestive Heart Disease (CHD) and hypertension related to high serum total cholesterol [10]. Moreover, hyperuricemia is often encountered and

associated with factors that play an important role in metabolic syndrome such as hypertriglyceridemia, obesity, hypertension, and hyperglycemia [11].

After completion the health examination, the results are recorded and notified to the participants regarding their health conditions. Then the participants are given leaflets with the title "Hypertension and how to prevent it" and "Elderly Healthy Nutrition". Then, health counseling was continued, focusing on issue related to hypertension and things that need to be done in order to prevent hypertension and/or to prevent hypertension complications and how the menu should be consumed so that the elderly remain healthy and fit. The participants enthusiastically listened and asked questions about their health conditions and what efforts they should be done to maintain their health. At the end of the activity, training regarding the elderly's healthy diet and exercise was held.

From the results of the activities, it can be concluded that most participants have high blood pressure in the pre-hypertensive stage. Likewise, most of them have some risk factors such as obesity and metabolic risk factors such as high cholesterol levels and high uric acid levels. In other words, most of them had risk factors for hypertension. Therefore, it was necessary to overcome the symptom through healthy lifestyle to avoid hypertension and the complication because of it. Therefore, team of community service give guideline book regarding prevention of hypertension through healthy life style to increase quality of life in elderly.

4. Conclusions

Based on this activity we conclude that most of participant had blood pressure at pre hypertension stage and they also have a risk factor for hypertension. Therefore, we suggested them to apply healthy lifestyle through healthy diet and exercise for elderly.

Acknowledgment

We would like to thanks to the Lembaga Pengabdian kepada Masyarakat Universitas Sumatera Utara and all those who assist in this activity.

References

- [1] World Health Organization (2015). World Health Statistic. Geneva.
- [2] Armilawaty, Amalia H, Amirudin R. Hypertension and Risk Factors in the Epidemiology Study. 2007 Epidemiology Section of UNHAS FKM. [cited 2014

Dec 12]. Available from: [http; // www.CerminDuniaKedokteran.com/in dex.php? Option = com_content & task = view & id = 38 & Itemid = 12](http://www.CerminDuniaKedokteran.com/in dex.php? Option = com_content & task = view & id = 38 & Itemid = 12)).

- [3] Ministry of Health. Republic Indonesia . 2013. Basic Health Research. Jakarta.
- [4] Anggraeni, AD, Waren, A., Situmorang, E., Asputra, H., Siahaan, SS, 2009, Factors Associated with Hypertension in Patients Treating at the Adult Bangkinang Health Center Polyclinic for the January-June 2008 Period, Research Report: Faculty of Medicine, University of Riau.
- [5] Ministry of Health. Republik Indonesia. 2014. InfoDatin Hypertension. Jakarta.
- [6] World Health Organization (2013). A global brief on hypertension. Geneva.
- [7] Hall, J. E. (1994). Louis K. Dahl Memorial Lecture. Renal and cardiovascular mechanisms of hypertension in obesity. *Hypertension*, 23(3), 381-394.
- [8] Cortas K, Hypertension. Last update May 11 2008. [cited 2015 Jan 10]. Available from: [http://:www.emedicine.com](http://www.emedicine.com).
- [8] Akuyam S, Aghogho U, Aliyu, Bakari A. Serum total cholesterol in hypertensive Northern Nigerians. *Int J of Med and Med Sci* (serial on the internet). 2009. 1(3) :73 -74 Available from:<http://academicjournals.org/article/article1379078>.
- [9] Libby.P.The pathogenesis, prevention, and treatment of atherosclerosis. In: Fauci AS, Braunwald E, Kasper DL, Hausen SL, Longo DL, Jameson JL, et al, editors, *Harrison's principles of internal medicine*.17 th ed. New York "Mc Graw Hill, p.1501-1503.
- [10] Facchini FS, Carlos DoNascimento, Gerald MR, Jeannie W. Yip Xi. Blood pressure, sodium intake, insulin resistance, and urinary nitrate excretion.
- [11] *Hypertension*. 1999; 33 (4):1008-1012.