The Actions to Control the Blood Pressure among a Community Hypertensive Elder in Denpasar City

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Abstract

Objectives: To evaluate the actions of hypertensive elders in Primary Health Care among Denpasar City in maintaining blood pressure.

Method: The population is patients aged ≥60 years who were admitted to the Integrated Health Care for elders between 13 March to 20 May 2019. The proportional random sampling was used, remaining the selected of 210 elders from four PHC separated by four different districts. The actions were evaluated by questionnaire that used to assess what the elders do as awareness to maintain blood pressure.

Results: The total of 210 elders were reviewed (mean age, 67.2 years) with 120 participants (57.1%) were female. Amount 187 participants (89.04%) were categorized into elderly and the rest were old. The mean of systolic and diastolic blood pressure was 148.6/88.9. There are six kinds of medicine that have been given to elders. Elders also have other condition which contribute to illness such as diabetic, hyperlipidemia, hyperuricemia and arthritis (10%). Regular control schedule and morning blood pressure monitoring as the critical points which are need attention.

Conclusion: The elders have to concern with control schedule arrangement and morning blood pressure measurement to achieve BP target.

Keywords: *Hypertensive elders, blood pressure control.*

Introduction

The health condition of elders, especially uncontrolled blood pressure, it still exist, contributes to the increase of cardiovascular disease. In South East Asia, low obedience of hypertensive elders in treatment was reported as factor that lead the rising number of death. A research was conducted in China in 2017 reported that degradation of medication proportion and blood pressure control need patient compliance and awareness to control hypertension (HTN) and minimize the risk of complication.[1]HTN in the age group ≥65, mostly in woman, known as one of trigger factors of worldwide premature death.[2]

Virdis, et al. describes the aging process with arterial stiffness and changing of inner wall arteries mainly on aorta and proximal branch. Thickening of the intima cause loosing of elasticity and affect haemodynamic. When the stiffness attack large arteries, the cushioning function was damaged, then an ejection function of the ventricle and recoil elasticity will decline. Continuity of this situation potentially increase the risk of stroke and heart failure.[3]

The 4th most populated country in the world based on the United Nations report in 2015, Indonesia, has an elders population that increased about two times during 50 years. At 2018, the percentage of the elder population reached 24,49 million (9.27%). It reveals that Indonesia is in transition to ageing population due to the percentage of persons aged, upper 60 years is more than 7% which is dominated by group of aged 60-69 years (63.39%). The Indonesian Central Bureau of Statistics in 2018 reported that five provinces in Indonesia as the most populated of elders, included Bali. This is a challenge of Indonesia to achieve independent and high quality elders and reduce the burden of the national development.[4,5]

The report of Basic Health Result in Indonesia, year

2018, was reported that the HTN of elders upper 75 years as the highest percentage in 2018 reached 69.5%. Based on this case, 13.3% have not taken any medicine and 32% irregularly medicated.[6] In Bali, HTN has been the second position from the 10 highest illness admission in Primary Health Care (PHC) and more than 2000 patients had been referred to hospital.[7]

The preliminary study was conducted in Denpasar, Central City of Bali, by counting the hypertensive elder visitation to PHC during September to December 2018, was 4088 during four months from eleven PHC.

Based on all studies, the continual study needs to perform to explore more about the awareness of hypertensive elders in controlling blood pressure. This study was involved hypertensive elders to describe the applied behavior during HTN program.

Method

This study was approved by the Committee of Ethical Approval in the Faculty of Nursing Universitas Airlangga by number 1321-KEPK. We conducted a cross sectional study which involved hypertensive elders as a participant. Cluster sampling was used to determine four PHC in Denpasar City that separated by four different sub-districts.

The total population from average visits reached 596 patients from the selected PHC, then 210 participants was chosen by using proportional random sampling. There are PHC 1 North Denpasar (41 participants), PHC 1 East Denpasar (53 participants), PHC 1 West Denpasar (88 participants) and PHC 3 South Denpasar (33 participants). To be included in this study, elders needed to be diagnosed as having HTN with 1 year minimum duration of taking medication; have history of (BP) records with Systolic Blood Pressure (SBP) ≥140 mmHg and Diastolic Blood Pressure (DBP) ≥90 mmHg for the past two months on the health record book of elderly. Each elder has been given an explanation that involved elder's family without any force to write on the inform consent.

Data collection was started from 13 March to 20 May 2019. Information collected included demographic data, BP measurement, medication, duration of diagnosed and the actions to control HTN. The elders were asked about the actions to control BP that concern to 9 points of the control schedule, morning blood pressure measurements, consultation, physical activity, diet, sleep, stress distraction, desire to look for health information and willingness to apply the advice from health care provider.

Researchers have a responsibility to ensure participants comfort and stop the process if the elderly need health services and help them to receive the treatment. The study was conducted with respect of the total confidentiality of data. Therefore, anonymous data were analyzed using SPSS 17 with descriptive analysis.

Results

Hypertensive elders with the total number amounted 210 participants aged 60 to 80 (mean, 67.24±5.096) years were included and categorized into elderly (<75 years, 89%) and old (≥75 years, 11%).Gender distribution was dominated by female (n=120, 57.14%). In this study, Omron series HEM-7121 blood pressure monitor were used to measure the BP. From 210 elders, the blood pressure was recorded for systolic with a minimum level of 120 mmHg, maximum level of 210 mmHg with mean 146.61±13.75. Systolic blood pressure was categorized into ≤160 mmHg(n=170, 81.0%) and >160 mmHg(n=40, 19%). Furthermore, diastolicwith result ≤100 mmHg was recorded on 174 participants (82.9%) and the rest was >100 mmHg with mean 88.92±8.95.

There are 17 participants (8.09%) were used more than one kind of medicine. Five kinds of medicine that the elders consumed to control blood pressure which are calcium channel blocker (amlodipine), ace inhibitor (captopril, lisinopril, ramipril), angiotensin II receptor blocker (valsartan, candesartan, telmisartan, irbesartan), beta blocker (bisoprolol), diuretic (spironolactone), and platelet antiaggregation (cilostazol, aspilet, clopidogrel). The most of the participants used calcium channel blocker such as amlodipine (75.71%). This medicine is included in health insurance from BPJS Kesehatan (Social Insurance Administration Agency of Indonesia) as the first treatment from PHC for HTN. Another medicine is an ace inhibitor (captopril). The patients who need the other medicines, mostly are specialists referred patients in hospitals, internist or cardiologist. Every 2 weeks the patients need to check the blood pressure and receive a referral form to meet the specialist.

From all participants, 9 elders (4.28%) also have diabetes mellitus, 5 elders (2.38%) with hyperlipidemia, arthritis and hyperuricemia (2 elders, 0.95%), and history of stroke or heart attack amounted 5 elders (2.38%). Based on duration of HTN diagnosed, the participants

were categorized into three groups, 128 elders (60.95%) with duration of HTN around 1 to 5 years, 70 elders (33.33%) were diagnosed 6 to 10 years, and the rest (5.71%) is the participants who diagnosed more than 10 years.

The results of 9 aspects that describe the action of elders to control HTN are described on the table below.

Table 1. The number of hypertensive elders in action to control HTN

Elders action	Perform		Not perform	
	n	%	n	%
Regular control schedule	52	24.8	158	75.2
Morning BP measurement	16	7.6	194	92.4
Consul to doctor	156	74.3	54	25.7
Regular activity	138	65.7	72	34.3
Diet (sodium restriction)	192	91.4	18	91.4
Sleep duration (7-8hours/day)	169	80.5	41	19.5
Stress distraction	205	97.6	5	2.4
Willingness to learn	153	72.9	57	27.1
Willingness to apply the suggestion	174	82.9	36	17.1

Table 1 illustrates some interesting facts about what the hypertensive elders do to control BP. It allows the percentage of participants who do and do not perform that action.

1. **Regular control schedule:** The number of elders who have arranged control schedule to PHC is only 52 persons (24.8%). It means not all elders control the health condition. Actually, the health care provider gives medicine for 2 weeks only and suggest the patient to control before the last medicine is taken. It means 1-2 days before the last tablet, the patient should come to PHC to check BP, body weight and other conditions related to HTN and receive the treatment as needed. The recommendation for hypertensive elders with ischemia is they should lower the blood pressure around <135/85 or <130/80 for elders who have diabetes mellitus or chronic kidney disease.[8]If the patients able to seek PHC, it beneficially helps them to perform appropriate self-management in controlling blood pressure.
2. **Morning blood pressure measurement:** The second action only performSwith less than 10%. It reveals that low awareness to BP monitoring, while it is the skill that they should have because the BP usually peaks also in the morning. Morning BPmeasurement should be improved with due to both ischemic stroke and coronary events often occur.[9]The trained elderly to measure and interpret BP result are beneficent to prevent complications of asymptomatic high BP.
3. **Consultation with the doctor:** From the third point, consult to doctor, counted 156 (74.3%) pay attention to seek a medical doctor if the sign and symptom of high BP still exist even though the medicine have been taken. The others were ignored and have been chosen only stay at home and take a rest. This poorly condition needs high attention, especially for the elders with complication while they should be referred to Advance Health Facilities as a recommendation from Ministry of Health Republic of Indonesia.[10]
4. **Regular activity:** The total number of 138 elders perform 30 minutes activity per day. Recommendation about regular activity included walking, jogging, swimming or cycling.[2] Based on *American Heart Association* (AHA) recommendation, the appropriate activity for elder is 30 minutes slow walking/day or 150 minutes/ week as a minimal duration to increase fitness.[11]
5. **Diet (sodium restriction):** Almost elders have paid attention to sodium restriction, more than 90%. Diet restriction based on *The Dietary Approaches to Stop Hypertension* (DASH) was proven to reduce BP by increasing the consumption of fruits, vegetables, wheat, poultry meat and fish with restriction of sweetener and red meat with sodium consumption less than 5g/day.[2]
6. **Sleep duration (7-8hours/day):** Only 41 participants have problems with sleep duration when 80.5% of all were sleeping for 7-8 hours/day. The research was proven that afternoon sleep >30 minutes or a night sleep >9 hours potentially increase the risk of death.[12] The National Sleep Foundation suggests the appropriate duration around 7 to 8 hours/day.[13] It will help the elders still have enough time to act in daily activities.
7. **Stress distraction:** Almost all participants have no matter about stress distraction. They will do some hobbies like fishing, cycling or gardening to reduce the level of stress. Stress has close linkages to BP level. Stress consistently affects the systolic and diastolic blood pressure.[14] Therefore, the elders need more activity to help them distract from the trigger of stress.

8. **Willingness to learn:** Amounted 72.9% (153) elders are active to seek information about HTN and what they have to do to achieve normal BP. The learning process is related to the increase of knowledge and experience. The elders who aware to seek information to achieve a healthy life in consequence will have more confidence and adherence to the treatment program.[15] The health care provider also has responsibility to give education as Minimal Standart of Health Services based on The Law of Ministry of Health Republic of Indonesia number 43 year 2016.[10]

9. **Willingness to apply the suggestion:** Most of the elders (n=174, 82.9%) are aware and have desire to adhere healthy life style. The important point of willingness is how to achieve elder independence to perform self-management as the key role of successful treatment.[16] This is proof that the elders have willingness to prevent the deteriorate health conditions in HTN as chronic illness.[17] It is beneficially for elders to stay healthy after received any suggestion from a health care provider.

Discussion

This study demonstrates the actions which are performed by community hypertensive elder to control BP. In contrast with self-management of HTN, two points that required the attention of elders to increase are regular control schedule and morning blood pressure measurement. Less than a quarter off total participants have low attention to these points. It might be the consideration of health care provider to remind and support them to be treated hypertensive elders and aware with complication reduction. The other risk factors of HTN such as low intensity of activity, diet, sleep and stress are the causes that can be controlled. Confident and adherence to the treatment program will increase when the elders aware to seek information to achieve meaningful healthy life. It is related to self-care behavior about how to preserve normal BP.[15]

The patient who visits irregularly or out of schedule, is potentially a loss of HTN control, while the hypertensive elders need to consume the medicine regularly and control the body weight to reduce the ischemic heart attack event. They need complex treatment because it requires continuity of caring about cardiovascular, activity and more information to achieve the target of BP.[18]

There are several limitations of the present study. The BP only documented at the moment of data collection without compared to the last 2 months BP. The patients who has another diagnosis beside HTN also included in this study, which might require more attention to detect more serious complication that may occur.

Conclusion

The seven actions that have been performed by the most of hypertensive elders included awareness in consultation based on untreatable signs and symptoms, regular activity, sodium restriction, sleep duration, stress relief, willingness to learn and apply health recommendation. However, not only less than a quarter of participants do not concern to make and follow the regular control schedule to PHC, but also less than 10% elders did not perform morning blood pressure monitoring.

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