Hypertension Among The Elderly in The Tzu Chi Flat, West Jakarta,Indonesia

ABSTRACT

Aims: Hypertension is a cause of premature death in the world that should be prevented. As well as being the number 3 cause of death after stroke and tuberculosis in Indonesia. This study aims to get an overview of the blood pressure of the elderly in the tzu chi flat so that it can inform especially the elderly, accompanying families, health cadres and health workers so that they can make various efforts to anticipate the occurrence of hypertension, care and rehabilitation measures
Study design:cross sectional survey
Place and Duration of Study: Sample in this research is elderly in the Tzu Chi Flat, Jakarta between February – June 2022.
Methodology: Quantitative research was used using the survey method with a cross-sectional approach which was conducted on 95 elderly people. This research was divided into 4 phases, namely the preparation phase, the implementation phase, the integration phase and the dissemination
Results: In the implementation, data collection was carried out, namely visual acuity measurements and interviews using a questionnaire where the results obtained were 35 elderly (36.8%) experiencing pre-hypertension. And as many as 38 elderly (40%) experienced hypertension in the age range of 60-74 years. Where 28 (73.7%) elderly hypertension is predominantly not working with (100%) having a low level of education.
Conclusion: However, the elderly who have hypertension in the Tzu Chi Flat still have a high level of independence in carrying out their daily activities. Based on these results, it shows that the hypertension rate is strongly related to age, physical activity and level of education in the Tzu Chi flat. For this reason, there must be treatment that can be done, such as prevention and control of hypertension in the elderly, namely early detection which involves the role of the family and even health workers. Health workers can work together with integrated healthcare center cadres as the first line to reach the elderly (an extension of the hand) to increase the knowledge of the elderly about the health status of the elderly.

Keywords: [Hypertension, elderly, hypertension of elderly, the tzu chi flat, west Jakarta]

1. INTRODUCTION

Elderly is an individual aged over 60. They will experience the aging process as a normal condition in every life phase. The aging process is not a disease but can affect an individual's immune system to respond to internal and external body stimuli [1]. During the aging process, problems associated with physical, cognitive, emotional, social, and sexual changes will occur [2]. The elderly are at higher risk of many diseases than young people, such as degenerative diseases. Degenerative diseases are chronic conditions that change a person's quality of life [3]. One of the dominant degenerative diseases in the elderly is related to the cardiovascular system, namely hypertension [2,3].

Hypertension is a condition of above-normal blood pressure. *The World Health Organization* determines 140/90 mmHg as the maximum-normal limit of blood pressure; thus, $\geq$ 160/95 mmHg is considered a hypertensive condition [2]. This is a general limitation that does not include age and sex classification [4,5]. The global prevalence of hypertension in 2021

was 1.28 million and occurred at the age of 30-79 years [8]. In Indonesia, the prevalence of hypertension is dominated by people aged 55-64 (55.2%), 65-74 (63.2%), and > 75 (69.5%) DKI Jakarta ranks ninth with a national prevalence of 33.43% in the elderly [6].

Hypertension is classified as a non-communicable disease, but it is a serious health problem. Currently, it is postulated that hypertension triggers global premature death that should be prevented. In Indonesia, hypertension ranks third in death after stroke and tuberculosis. In fact, hypertension is a common disease in the community. Insufficient special attention to individuals' health influences people's *awareness* of the emerging symptoms and rarely health checks. People usually recognize that they have hypertension when they do a physical examination for certain disease problems. Referring to this condition, hypertension is considered a *silent killer.* Hypertension should become the community's main focus that should be followed up by comprehensive and integrated prevention and treatment [3,5,7,8].

The incidence of hypertension in the elderly will continue to increase every year and affect the morbidity and mortality. Therefore, immediate treatment is necessary to prevent other complications, such as stroke, ischemic heart, and kidney failure [9]. In the elderly, the highest prevalence of non-communicable diseases is hypertension by 32.5% [12]. Based on Riskesdas 2018, the prevalence of hypertension continues to increase with age [10]. Hypertension in the elderly is 31.9% while that in young adults is 21.2%; these percentages indicate that the elderly are vulnerable individuals [11]. DKI Jakarta ranks ninth in the national prevalence of hypertension in the elderly; West Jakarta ranks third in the provincial prevalence of hypertension in elderly for 43.22% [12].

Several treatment to prevent and control hypertension in the elderly is an early detection by involving the role of family and health workers. Unfortunately, inadequate family support and health workers for the elderly with hypertension makes them less obedient to take medication and not understand the complications of hypertension [8,9]In addition, health workers can work together with integrated healthcare center as the first party who can reach the elderly to increase their knowledge of health status. Increased knowledge certainly affects the elderly's strategies to overcome relapse [3,13]. This research aims to describe the elderly's blood pressure in Tzu Chi Flats; thus, the elderly, accompanying families, health cadres, and health workers can make various efforts to anticipate the incidence of hypertension, perform treatment, and conduct rehabilitation measures.

2. METHODOLOGY

This study is a quantitative research using a survey method with a cross-sectional approach. The research was divided into four phases: the preparation phase, implementation phase, integration phase, and dissemination. The preparation phase consisted of the preparation of proposals, development of research instruments, and ethical assessment. The number of research respondents was 95 with the simple random sampling method used to select samples that match the inclusion criteria, namely the elderly who are willing to be examined at the time of data collection.The data used in this study are primary data obtained through direct interviews with the elderly.We use formula to determine the minimum sample size. The total population during the preliminary study was 112, with a minimum sample of 84 for this study. When data was collected, it was found that only 95 elderly people were willing to be interviewed.

This study uses independent variables, namely age, gender, occupation and co-morbidities, and the dependent variable (dependent) on the independencyof the elderly.Data source for this research is primary data where the data is taken directly by researchers through guided interviews onthe elderly.This research has passed ethical testing process from the Faculty of Medicine and Health Sciences Ethics Unit, KridaWacana Christian University, Jakarta. Each respondent's participation in the study was voluntary. Research subjects who are willing to be interviewed and come to the examination site are the inclusion criteria, while the exclusion criteria are elderly people who are not willing to be examined and are physically unable to come to the examination site. Consent was free and informed, by verbal and paper with signing the informed consent letter. The implementation phase consisted of data collection (blood pressure measurements and interviews using questionnaires), elaboration, and discussion of temporary measurement results.

Before gathering data, the researcher collaborated with the apartment management to assemble the elderly participants. Following this, the researcher outlined the goals of the research activities while the elderly individuals assumed a comfortable position. Subsequently, the researchers conducted individual interviews with each elderly person and performed blood pressure measurements while they were seated. The blood pressure measurement instruments employed included a calibrated sphygmomanometer, and stethoscope to ensure accuracy.The research questionnaire consisted of an informed consent sheet, elderly demographic data in the form of initials, name, age, gender, employment status, health history, blood pressure, pulse and dependency level questionnaire adopted from the Katz Index of Independence in Activities of Daily Living. After all data had been collected, they were processed using SPSS to edit, code, entry, and clean the data.

3. RESULTS AND DISCUSSION

The elderly in Tzu Chi flats consist of various cultural races such as Javanese, Betawi, Batak and Chinese. The majority do not work (lower middle economic status), live with their families. Health conditions are also very varied, in general they have comorbidities such as rheumatism, diabetes, hypertension, cataracts, cardiac disease and thyroid disorders.

The data of hypertension in the elderly is summarized Table 1.

Table 1. Classification of Hypertension in Elderly in Tzu Chi Flat Based on Hypertension Stages

Classification	n	Percentage (%)
Normal	22	23.2
Pre-Hypertension	35	36.8
Stage I hypertension	21	22.1
Stage II hypertension	17	17.9

Table 1 shows that 95 elderlies took the examination. The elderlies with hypertension are classified into four: 22 elderlies with normal blood pressure (23.2%), 35 elderlies with pre-hypertension (36.8%), 21 elderlies with the stage one hypertension (22.1%), and 17 elderlies with the stage two hypertension (17.9%).

Table 2. Classification of Hypertension in Elderly in Tzu Chi Flat Based on Age

Age	n	Percentage (%)
45 – 59 year	1	1.05
60 – 74 year	88	92.63
75 – 90 year	6	6.32
>90 year	-	-

In the examination of the elderly, it is classified into three age groups, namely 45-59 years, 60-74 years, and 75-90 years. Based on the results in Table 2, it is shown that elderly individuals with hypertension aged 45-59 years are 1 elderly person (1.05%), 60-74 years are 88 elderly individuals (92.63%), and 75-90 years are 6 elderly individuals (6.32%).

Table 3. Classification of Hypertension in Elderly in Tzu Chi Flat Based on Sex

Sex	n	Percentage (%)
Males	42	44.22
Females	53	55.78

Table 3 shows 42 male elderlies (44.22%) and 53 female elderlies (55.78%) have hypertension.

Table 4. Classification of Hypertension in Elderly in Tzu Chi Flat Based on Activities

Activities	n	Percentage (%)
Employed	33	34.74
Unemployed	65	65.26

Table 4 shows that 65 elderlies experiencing hypertension are employed (65.26%) while only 33 elderlies are unemployed (34.74%).

Table 5. Classification of Hypertension in Elderly in Tzu Chi Flat Based on Education

Education	n	Percentage (%)

Primary Education	95	100
(Elementary Schools &	-	-
Junior High Schools)		
Higher Education (High		
Schools & Universities)		

Table 5 shows that all elderlies (95 people/100%) with hypertension have a low level of education, namely elementary schools to junior high schools.

Table 6. Classification of Hypertension in Elderly in Tzu Chi Flat Based on Independence Levels

Independence	n	Percentage (%)
High	93	97.90
Low	2	2.10

Table 6 shows that most elderlies with hypertension still have a high level of independence in carrying out daily activities. The data show that 93 elderlies (97.90%) have a high level of independence, and two elderlies (2.10%) have a low level of independence. The results of blood pressure checks on 95 elderlies in Tzu Chi Flat werecategorized into three: normal hypertension, pre-hypertension, and hypertension listed in Table 1. Systole blood pressure in the normal category is <120 mmHg, that in pre hypertension is 120-139mmHg, stage hypertension is 140-159 and stage hypertension $\geq$ 150 mmHg.

3.1 THE IMPACT OF AGE ON THE INCIDENCE OF HYPERTENSION

In the examination, age groups were divided into the elderly, namely 45-59 years, 60-74 years, and 75-90 years. The results show that the majority of elderly individuals with hypertension are in the age range of 60-74 years. Research conducted by Adam in 2019 states that hypertension occurs in old age because the aging process affects the quality of organ function, including the cardiovascular system[2] have revealed that hypertension occurs in elderlies because the increasing age affects the quality and ability of organs, including the cardiovascular system. An Individual's aging will affect the elasticity of the arteries associated with the lack of ability to pump blood and increase blood pressure. Increased blood pressure in the elderly is considered natural because it is included in the body's natural changes [14].

Elderlies aged > 75 commonly have hypertension because age is the most risk factor [18]. Elderlies aged 60-64 have a risk of hypertension by 2.18 times, those aged age 65-69 years have a risk by 2.45 times, and those aged > 70 have a risk by 2.97 times. These conditions occur because the artery flexibility is lost and becomes stiff. As a result, blood is forced to pass narrow blood vessels, which affects blood pressure [14].

3.2 EFFECT OF SEX ON HYPERTENSION

The results of blood pressure examination in 95 elderly individuals show that 35 elderly individuals have pre-hypertension, 21 have stage I hypertension, and 17 have stage II hypertension. Out of these, 42 male elderly individuals (44.22%) and 53 female elderly individuals (55.78%) are experiencing hypertension. Sex becomes one of the irreversible factors affecting blood pressure. Wahyuni and Eksanoto (2013), in [16] have revealed that women contribute more to hypertension than men. It is reported that 58% of women have hypertension, and 27.5% of men have hypertension. This phenomenon occurs because women aged > 45 years encounter menopause. Menopausal women have low estrogen levels that affect estrogen's function to increase HDL levels; HDL supports vascular health [16].

The examination at the Tzu Chi Flat in Cengkareng was carried out at the community hall functioning as a Posbindu (an integrated development post) place with the assisstance of health cadres. This effort attracted the elderlies to attend the examination program. Most elderlies who attended the examination program were women because the majority of the elderly in the flat were females and male elderlies prefer having the examination at other health facilities. This condition is similar to other studies, stating that most male elderlies have treatment in clinics or hospitals. Elderly women have a higher desire to gather and carry out health checks, especially in apartment environments likes integrated healthcare center.
[17].

However, this finding disagrees with other studies, discovering no relationship between an elderly's sex and hypertension. It is found that there was no meaningful relationship between an elderly's sex and hypertension. Definitively, female sex are not a risk factor for hypertension [18].

3.3 IMPACTS OF PHYSICAL ACTIVITIES ON HYPERTENSION

This study has found that hypertension is more significantly found in not working elderlies in Tzu Chi Flat (62.26%) than in working elderlies. According to Riskesdas[19], the cause of hypertension is insufficient physical activities. When a person does not perform routine activities, such as work, he does not move his limbs. As a result, his calorie or energy is released for less than 150 minutes per week. Such a condition classifies a person as having less physical activities. This statement is comparable to the research data in Table 4. The hypertension classification of the elderlies in Tzu Chi Flat based on activity denotes that 28 respondents (73.7%) do not perform physical or routine activities, such as working.

Dana [20] discovered a significant relationship between physical activities and hypertension stages. The results of this study show that the majority of respondents perform moderate physical activities (35 people or 79.5%). Meanwhile, 23 people (52.3%) have hypertension. The results are supported by Hasanudin and Ardiyani(21), stating that individuals with rare physical activities will mostly experience hypertension. They discover that 31 people (60.78%) do physical activities, and all respondents (41 people or 81.39%) have blood pressure categorized in stage 1 hypertension. These findings indicate a relationship between physical activities and blood pressure in people with hypertension in Tlogosuryo, Tlogomas Village, District Lowokwaru, Malang.

3.4 IMPACT OF EDUCATIONAL LEVELS ON HYPERTENSION

This study has found that all elderlies (95 people or 100%) with hypertension have a low level of education, namely elementary schools and junior high schools. This result concludes a relationship between educational levels and hypertension control behavior of elderlies' in Tzu Chi Flat. This result agrees with the result of Maulidina, Harmani, and Suraya (22), revealing a relationship between education and the incidence of hypertension; people with low education (63.6%) is more like to have hypertension than those with higher education (29.1%). This is also supported by Nugroho and Sari [23], who investigated the relationship between education level and age with the incidence of hypertension in the Palaran Health Center. They assert that low levels of education can be a risk factor for hypertension. Most respondents in the Palaran Health Center are poorly educated because they prefer earning the economic level and working to continuing their education.

This study concludes that individuals with a better level of education have extensive knowledge and will maintain health more precisely. The description above shows that an educational level strongly influences the elderly to experience hypertension because he has insufficient knowledge about hypertension prevention, strategies to handle it, and its treatment. Meanwhile, Rasmussen [24] argues that higher education that allows an individual to have knowledge is not enough to permanently change his behavior. Therefore, other components are necessary to change behavior; for example, social support from people around him.

3.5 IMPACT OF INDEPENDENCE LEVEL OF THE ELDERLY ON HYPERTENSION

Based on the research results, it is found that the majority (97.90%) of the 93 elderly individuals have a high level of independence, while the remaining (2.10%) 2 elderly individuals have a low level of independence. It can be concluded that the majority of hypertensive elderly individuals in Rusun Tzu Chi still have a very high level of independence. Therefore, hypertension is not a barrier for the elderly to engage in activities independently. Darmawati and Kurniawan (25) have revealed that different hypertension stages in the elderlies indicate their different independence levels; the higher the elderlies' grade of hypertension, the lower their independence level. Therefore, families and nurses in the primary order should optimize the fulfillment of daily living activities of the elderly with hypertension. This statement agrees with Novitasari and Wirakhmi[26], who deploy that increasing age will decrease several organ functions, so that the elderly are vulnerable to various kinds of chronic diseases. In addition, Wakhid[27] asserts that the elderly with hypertension find difficulties performing daily activities and lie down more often; thus, their bodies are weak and their head feels dizzy. The elderly with hypertension have an independence level with assistance due to the aging process. Such a condition decreases the elderly's physical and psychological abilities that can affect their independence levels.

4. CONCLUSION

Hypertension is considered a non-communicable disease but presents a serious health concern. In Indonesia, it stands as the third leading cause of death, following strokes. This is often attributed to a lack of specific attention to individual health, resulting in low awareness of emerging symptoms and infrequent health check-up. The majority of elderly residents in this apartment complex are categorized as having moderate hypertension. Collective efforts are required from individuals, families, apartment management, and relevant health centers to address and prevent potential complications.While most elderly individuals with hypertension in this complex can carry out normal activities, it's crucial to anticipate symptoms or potential heart attacks. Therefore, seniors and their families should consider limiting strenuous activities, reducing the intake of high-salt foods, engaging in regular and suitable physical activities, and monitoring blood pressure regularly. Consistent and regular medication adherence is a crucial key to optimizing the health status of elderly individuals with hypertension. And limitationsnot exclude samples with normal blood pressure in the hypertension grouping in the elderly.

Ethical approval and Consent:

This research has passed ethical testing process from the Faculty of Medicine and Health Sciences Ethics Unit, KridaWacana Christian University, Jakarta. Each respondent's participation in the study was voluntary. Research subjects who are willing to be interviewed and come to the examination site are the inclusion criteria, while the exclusion criteria are elderly people who are not willing to be examined and are physically unable to come to the examination site. Consent was free and informed, by verbal and paper with signing the informed consent letter.

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