

Case Report Paper

Effect of Foot Reflection Massage on Blood Pressure Reduction in Hypertension Patients

Sri Suryaningsih¹, Rian Tasalim¹, Subhannur Rahman¹

¹ Department of Nursing, Study Program of Nursing Professional, Faculty of Health, Sari Mulia University. Banjarmasin, Indonesia.

Article History

Received:

15.06.2022

Revised:

01.07.2022

Accepted:

10.07.2022

***Corresponding Author:**

Sri Suryaningsih

Email:

srisuryaningsih042@gmail.com

This is an open access article,
licensed under: [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/)



Abstract: Hypertension is a chronic condition caused by an increase in blood pressure above normal limits. Many non-pharmacological treatments have been found to lower blood pressure, such as foot reflexology, which has a relaxing effect to improve blood circulation. Objective: To analyze the effect of foot reflexology on reducing blood pressure in hypertensive patients. Methods: foot reflexology is given which has 3 stages of administration where each treatment is given for 15-20 minutes. This research is a pre-experimental research with an approach using the One Group Pretest Posttest Design. The population in this study were hypertension sufferers in the village of Paku Alam RT 02. In taking the sample the researchers used the purposive sampling technique with a total of 15 respondents and performed foot reflexology massage. The analysis used Paired t-test. Results: the results showed that blood pressure decreased after giving foot reflexology. After processing, based on the paired t-test, p value <0.005 (0.00<0.05) was obtained, so H0 was rejected and Ha was accepted. Conclusion: The Effect of Foot Reflexology Massage on Blood Pressure Reduction in Hypertension Patients in Paku Alam Village.

Keywords: Blood Pressure, Foot Reflexology, Hypertension.



1. Introduction

Hypertension is a chronic condition that occurs due to an increase in blood pressure above the normal limit of general blood pressure [1]. Hypertension is defined as a physical condition characterized by systolic blood pressure greater than 140 mmHg and diastolic blood pressure more than 90 mmHg based on two or more measurements [2].

Hypertension is often referred to as the Silent Killer because people with hypertension who have not experienced symptoms of disorders that have occurred for years cause damage to vital organs [3]. Common symptoms include headache, shortness of breath, palpitations, fatigue, tinnitus (ringing in the ears), nosebleeds, blurred vision due to brain, eye, heart and kidney damage.

Data from the prevalence of patients with hypertension globally is 22% of the total world population [4]. The World Health Organization in the 2015-2020 period stated that around 1.13 billion people in the world suffer from hypertension, which means that 1 in 3 people in the world is diagnosed as having hypertension and this number will continue to increase every year which is estimated to be 1 in 2025. 5 people are diagnosed with hypertension and it is estimated that 9.4 million people die every year due to hypertension and its complications [5].

Indonesia has a prevalence of hypertension that continues to increase every year. The incidence of hypertension in Indonesia and other developing countries will be estimated to continue to increase by 80% in 2025, as many as 15 million people are estimated to suffer from hypertension in Indonesia, and from this data only 4% of patients control their hypertension [6]. According to data on the prevalence of hypertension in Indonesia as much as 34.11% [7]. South Kalimantan Province ranks first with the highest incidence of hypertension in Indonesia, namely 44.13% [7] while the lowest prevalence of hypertension sufferers comes from Papua Province as much as 22.2%. In South Kalimantan, the highest prevalence of hypertension sufferers is in Banjarmasin City at 57,257, and the lowest is in Tanah Spice Regency at around 2,896. Data from the Banjar District Health Office in 2021 showed 15,083 hypertension sufferers [7]. Based on 2021 data obtained from Sungai Tabuk Health Center 2, 868 people suffer from hypertension.

The risk factors for hypertension are divided into 2, namely hypertension that cannot be changed and hypertension that can be changed. Risk factors for hypertension that cannot be changed include age, gender, education, occupation and family history [8]. Risk factors for hypertension that can be changed include obesity, smoking, lack of activity, excessive salt consumption, dyslipidemia, excess alcohol consumption, psychosocial and stress [9]. Hypertension often does not cause symptoms in sufferers so that hypertension is often considered a silent killer. If not treated, high blood pressure will cause the heart to work hard until at some point serious damage will occur. Whereas hypertension is the primary cause of stroke, heart attack, heart failure, kidney failure and dementia [10]

Hypertension can be treated by pharmacological methods, namely antihypertensive drugs or by non-pharmacological methods, namely by modifying lifestyle or it can be a combination of both [10]. When anti-hypertensive drugs are needed, non-pharmacological treatment can be used as a complement to get a better treatment effect. Several studies have proven that non-pharmacological treatment is a mandatory intervention that must be carried out in every hypertension treatment [10].

Preventing complications from hypertension can be done comprehensively, both in a promotive, preventive, curative and rehabilitative manner. The curative role that nurses can do non-pharmacologically is by way of relaxation with foot massage [11], [12]. The choice of non-pharmacological actions is the main because the action of using pharmacological therapy has side effects that are not good for the future that will be experienced by clients [13].

Reflexology is the practice of massaging specific points on the hands and feet. The benefits of reflexology for health are no longer in doubt. One of the most popular properties is to reduce pain in the body [14]. Other benefits include preventing various diseases, increasing endurance, helping to deal with stress, relieving migraine symptoms, helping to cure chronic diseases, and reducing dependence on drugs [14].

The soles of the feet are nerve endings that can be stimulated by gentle massage with the hands. Reflexology can facilitate blood flow, reduce norepinephrine levels, reduce cortisol hormone levels, and reduce muscle tension, so that it can reduce stress which indirectly lowers blood pressure [15].

According to research conducted by [16] that foot reflexology can reduce stress because it creates a relaxing effect, so that cortisol levels in the blood decrease and increase the effect of endorphins which results in a decrease in blood pressure. Similar research on foot reflexology on blood pressure has also been conducted by [10] which states that foot reflexology therapy is used for a person who

suffers from hypertension. His systolic blood pressure before treatment was 180 mmHg after 30 minutes of therapy, the systolic blood pressure decreased by 150 mmHg.

Based on the problems that occurred above and the data obtained from the Sungai Tabuk 2 Public Health Center, Banjar Regency, it was found that the most hypertension sufferers were found in the village of Paku Alam, namely 45 people with high blood pressure who ranked first in the highest disease. At the time of measurement, the average blood pressure was systolic > 140 mmHg and diastolic > 90 mmHg. The management of foot reflexology intervention has never been carried out in Paku Alam village, RT 02.

2. Literature Review

Hypertension is a condition that occurs when blood pressure is abnormal continuously when blood pressure checks are carried out several times [17]. Hypertension generally occurs when the systolic value is >140 mmHg and the diastolic value is >90 mmHg [1].

Hypertension can be classified into 2, namely essential hypertension of unknown cause and secondary hypertension caused by abnormalities in the kidney blood vessels, hyperaldosteronism (adrenal gland) and hyperthyroidism (thyroid gland disorders) [18].

Data from the prevalence of patients with hypertension globally is 22% of the total world population [4]. The World Health Organization in the 2015-2020 period stated that around 1.13 billion. According to data on the prevalence of hypertension in Indonesia as much as 34.11% [7].

Preventing complications from hypertension can be done comprehensively, both in a promotive, preventive, curative and rehabilitative manner. The curative role that nurses can do non-pharmacologically is by means of relaxation with foot massage [11]. The selection of non-pharmacological actions is the main because the action of using pharmacological therapy has side effects that are not good for the future that will be experienced by clients [13].

The soles of the feet are nerve endings that can be stimulated by gentle massage with the hands. Reflexology can facilitate blood flow, reduce norepinephrine levels, reduce cortisol hormone levels, and reduce muscle tension, so that it can reduce stress which indirectly lowers blood pressure [15].

One of its properties and the most popular benefits is to reduce pain in the body. Other benefits are preventing various diseases, increasing endurance, helping to deal with stress, relieving migraine symptoms, helping cure chronic diseases, and reducing dependence on drugs. The basic techniques that are often used in reflexology include: the thumb spread technique, rotating the hands and feet at one point, as well as pressing and holding techniques. Stimuli in the form of pressure on the hands and feet can emit waves of relaxation throughout the body [19].

The similarity of this study with the research conducted by [20] of which both used foot reflexology intervention with a pre-post test design with an intensity of 3 doses and obtained a significant decrease in blood pressure. Based on the theory and facts found, the researchers concluded that foot reflexology therapy can reduce blood pressure by stimulating the nervous system and making the body in a relaxed and calm condition so that it increases the production of endorphins in the brain and decreases the production of the hormone cortisol so that the heart pumps and blood flow becomes more intense controlled. Based on this research, the researchers suggest that giving foot reflexology therapy is balanced with regular exercise, controlling diet by avoiding foods that contain saturated fat, reducing coffee and cigarette consumption and consuming drugs according to indications in order to achieve more optimal results.

3. Methodology

This study uses a pre-experimental research method with an approach using the One Group Pretest Posttest Design which was carried out on 02-04 August 2022 in hypertension sufferers in the village of Paku Alam RT 02 in the Sungai Tabuk 2 Puskesmas area with 15 respondents with hypertension who met the criteria. The inclusions were hypertensive patients who were ready and willing to become respondents, hypertensive patients aged >26-65 years and previously respondents had never received foot reflexology massage. In taking the sample, the researcher used the Purposive Sampling technique

The respondent's blood pressure was measured using a sphygmomanometer (Digital). Measurements were made twice before treatment and after treatment by taking the average measurements before and after treatment calculated at 10 minutes intervals. Respondents will be given foot reflexology massage which has 3 stages of administration where each treatment is given for 15-20 minutes.

The implementation stage in this study using the instrument is an observation sheet with indicators of blood pressure examination results and contains general data of respondents such as initials of name, gender, age, education, length of suffering from hypertension and suffering from comorbidities. The results of data collection will be carried out data processing in the form of editing, tabulating, scoring, and cleaning then the researchers conducted a data normality test to determine the distribution of data. Statistical tests used bivariate analysis to determine the difference before and after foot reflexology massage on decreasing blood pressure in hypertensive patients using hypothesis testing using Paired T-Test (with lpha 0.05 or 95% confidence level) alpha value (0.05).

4. Finding and Discussion

4.1. Characteristics of Respondents

Based on Table 1, it shows that 15 people are female (100%). The most age group is 46-55 years old as many as 10 people (66.6%). The highest level of education, namely the education level of SD/equivalent, amounted to 8 people with a percentage of 53.3%. The highest work among the three jobs is found in farmers, amounting to 6 people with a percentage of 40%.

Table 1 Characteristic Frequency Distribution
 Hypertension Patients in Paku Alam Village RT 02

Characteristics	Frekuensi (n)	Persentase (%)
Gender		
Man	0	0%
Woman	15	100%
Age		
26-35	0	0%
36-45	5	33,3%
46-55	10	66,6%
56-65	0	0%
>65	0	0%
Education		
Elementary School	8	53.3%
Middle School	5	33.3%
High School	2	13.3%
Work		
Housewife	4	26.6%
Trader	5	33.3%
Farmer	6	40%

Based on gender, the highest sufferers of hypertension are women with 15 people each and the percentage is 100%. Research conducted by [10] states that women have a higher risk of hypertension than men, in his research it was found that women who suffer from hypertension with a percentage of 45% compared to men who have a percentage of 25%, women in old age will experience hypertension. Menopause and this is one of the factors that cause women to suffer from hypertension because at the time of menopause the levels of the hormone estrogen in the body decrease, the function of this hormone is to increase levels of High Density Lipoprotein (HDL) which plays a very important role in the health of blood vessels [21].

Based on age, the highest number of respondents suffering from hypertension is in the range of 46-55 years (early elderly) with a total of 10 people and a percentage of 66.6%. Research conducted by [22] states that the increasing age, the risk of hypertension in a person will increase. With increasing age, there will be changes in the arteries becoming stiffer and resulting in reduced recoil of blood flowing into the blood vessels. This causes the systolic blood pressure to increase [23].

Based on the education level, the highest respondent suffering from hypertension was at the elementary/equivalent education level with a total of 8 people and a percentage of 53.3%. A person's level of knowledge will be influenced by his education level, the higher a person's level of education, the more information he has and the more he understands how to maintain his health. A low level of

education will have a major influence on the hypertension he suffers, this happens because of a lack of insight into health which causes the way of thinking to be less effective in dealing with and maintaining relationships with health problems experienced.

Based on occupation, the highest number of respondents suffering from hypertension is at the farmer level with 6 people and a percentage of 40%. In accordance with research conducted by Ikhwan et al (2017) which states that stress is one of the factors associated with hypertension, namely farmers who work in the fields from morning to evening, farmers who work hard from the morning and have a long time to complete their work, but the results what a farmer gets is not in accordance with what he does so that most farmers have a low economic status that triggers hypertension.

4.2. Univariate Analysis

Table 2 shows that there are 15 respondents and categorized based on the MAP value. In the high normal category there are 1 person with a percentage of 6.6%, in the stage 1 category (mild hypertension) there are 8 people with a 53.3% percentage, the stage 2 category (moderate hypertension) is 4 people with a 26.6% percentage and the stage 3 category (severe hypertension) is 2 people with a percentage of 13.3%. Mean Arterial Pressure (MAP) is the result of the average blood pressure in the arteries used for circulating blood to the brain. MAP has a normal range between 70-100 mmHg. If the MAP value is <70 or >100, the client will experience complaints such as blurred vision, irregular heartbeat, dizziness, headache, weakness, shortness of breath and fainting [24].

Table 1 Results of Blood Pressure Measurements to 15 Respondents Before and After Foot Reflexology Massage for 3 Days

Hypertension Range	Foot Reflexology Intervention			
	Pre	%	Post	%
	day-1 (n)		day-3 (n)	
Normal	0	0%	2	13.3%
Normal High	1	6.6%	7	46.6%
Stage 1 (Mild Hypertension)	8	53.3%	5	33.3%
Stage 2 (Moderate Hypertension)	4	26.6%	1	6.6%
Stage 3 (Severe Hypertension)	2	13.3%	0	0%
Stage 4 (Malignant Hypertension/ Very Severe)	0	0%	0	0%
Total	15	100%	15	100%

Based on Table 2, the results obtained were hypertension on foot reflexology before treatment (Pre-Test) and after treatment (Post-Test). The number of respondents on foot reflexology in the Pre-Test was in the hypertension range, Stage 1 (mild hypertension) with a total of 8 people and a percentage of 53.3%. While in the Post-Test the highest number of respondents was in the Normal High range as many as 7 people with a percentage of 46.6%.

Hypertension can cause a person's death suddenly, as for the factors that cause a person to get hypertension including age, gender, heredity, excessive salt consumption, lack of exercise, smoking habits, stress and obesity or overweight [15].

High blood pressure or commonly referred to as hypertension can be treated by non-pharmacological and non-pharmacological methods. One of the non-pharmacological treatments is foot reflexology. Foot reflexology can prevent various diseases, increase endurance, help deal with stress, relieve migraine symptoms, help cure chronic diseases, and reduce dependence on drugs [14].

Pre-test blood pressure measurements were carried out by looking at the results of systolic and diastolic blood pressure which were measured using a tension meter in a sitting position before being given foot reflexology treatment. The working principle of reflex massage is to apply oil or body lotion so that the skin does not blister. With one direction from the bottom up regularly to facilitate the flow of blood and do massage according to the point.

Based on the results of the foot reflexology, the mean value of the MAP is 106.33 mmHg. It can be seen that the average value of respondents after treatment (Post-Test) falls into the range of Stage 1 Hypertension category (mild hypertension). When compared with the pre-treatment (Pre-Test), there

was a decrease in blood pressure based on the MAP value of 10.34 mmHg who was given foot reflexology treatment for 3 meetings for 3 consecutive days.

Blood pressure in respondents decreased after being given foot reflexology therapy, the researchers concluded this was due to the intervention that was carried out correctly and consistently for 3 times so that it gave a relaxing effect and increased endorphin production in the body besides massage at meridian points in the body can facilitate blood flow blood so that circulation becomes smoother. The decrease in blood pressure in addition to the effect of giving foot reflexology therapy is also because respondents are given education to maintain a diet and do light exercise every day [16].

Foot massage is the best alternative for reducing blood pressure levels among hypertensive patients. Massage has a mechanical effect that improves circulation, removes waste products from the body, increases joint mobility, reduces pain and reduces muscle tension. It has psychological benefits such as relaxation and an increased sense of well-being.

Stimulation of relaxation that is able to accelerate blood pressure and body fluids in the parts of the body associated with the nerve points of the feet being massaged is called foot reflexology. When blood circulation is smooth, it will have a relaxing effect on the body so that the body can be balanced. Massage given to people with hypertension is useful for facilitating a person's blood flow, so that other disease disorders can be prevented by doing palm reflexology [15].

4.3. Bivariate Analysis

Table 3 shows the Paired T Test Results of foot reflexology therapy on reducing blood pressure in patients with hypertension in Paku Alam Village RT 02.

Table 3 Paired T Test Results of foot reflexology therapy
 Hypertension Patients in Paku Alam Village RT 02

Mean		N	Dev. Mean	P-Value
Blood Pressure (Pretest)	Blood Pressure (Postets)			
116.67	106.33	15	10.34	0.000

Based on Table 3 of the 15 respondents who have been studied, it can be seen that there is a decrease in blood pressure on the average difference in blood pressure before and after the intervention. The average blood pressure before the foot reflexology was done was 116.67 mmHg and after the foot reflexology intervention was given it was 106.33 mmHg and decreased by an average difference of 10.34 mmHg. Statistical test results show p-value = 0.000 (<0.05).

Foot reflexology or often referred to as reflexology massage is done by massaging the reflexology points of the feet. Foot reflexology can provide relaxation stimulation that is able to facilitate the flow of blood and body fluids in body parts associated with the nerve points of the feet being massaged [15].

When doing massage on the leg muscles, the pressure on these muscles can gradually relax the tension so that it helps facilitate blood flow to the heart. Massage on the feet ends with a massage on the soles of the feet that will stimulate and restore the body's balance system so that it can lower blood pressure. One of the best ways to lower blood pressure is with reflexology therapy, because if foot massage is done regularly it can reduce levels of the stress hormone cortisol and reduce sources of depression and anxiety, so blood pressure will continue to fall and body functions will improve.

There are influences and changes in blood pressure in hypertensive patients after foot reflexology treatment. Of the 15 respondents who were studied after having foot reflexology massage, there was a change with an average blood pressure of 106.33 mmHg and there was a decrease based on the MAP value of 10.34 mmHg.

5. Conclusion

The knowledge of mothers of reproductive age couples about birth control pills, the majority of them having sufficient knowledge that is 72.5%, and the minority having good knowledge of 10%. Mothers of couples of childbearing age who accept birth control pills in the use of birth control pills in Kubu

Colia Village, Dolat Rayat District, Karo Regency in 2016 who are obedient in using birth control pills 67.5% and non-compliant in using birth control pills 32.5%. There is a significant relationship between knowledge of women of childbearing age about birth control pills and adherence to the use of birth control pills where the better the knowledge of women of childbearing age about birth control pills, the better the probability of being obedient in using birth control pills, with p value is 0.004

References

- [1] M. Ilham, A. Armina, and H. Kadri, "Effectiveness of Progressive Muscle Relaxation Therapy in Reducing Hypertension in the Elderly". *Baiturrahim Jambi Academic Journal*, vol. 8, no. 1, pp 58–65. 2021.
- [2] A. Nurmaulina and H. Hadiyanto, Foot Soak Therapy Using Warm Water in the Elderly in Lowering Blood Pressure. *Lantern: Scientific Journal of Health and Nursing*, vol. 4, no. 1, pp. 36-39, 2021.
- [3] R. Azwaldi and I. Erman, "Progressive Muscle Relaxation Exercises to Lower Blood Pressure Of Hypertension Patients In RT 13, 29 Ilir Subdistrict, Ilir Barat Ii District, Makrayu Health Center, Palembang," *Abdi Lecturer: Journal of Community Service*, vol. 5, no. 1, 2021.
- [4] H. M. Cheng, H. J. Lin, T. D. Wang and C. H. Chen, "Asian management of hypertension: Current status, home blood pressure, and specific concerns in Taiwan," *Journal of Clinical Hypertension*, vol. 22, no. 3, pp. 511–514, 2021.
- [5] A. S. Jabani, A. Kusnan, and B, I. M. C. "Prevalence and Risk Factors of Grade 2 Hypertension in the Working Area of the Poasia Health Center, Kendari City." vol. 12, no.2, pp. 31-42, 2022.
- [6] A. O Putri, T.N. Rahmadayanti, A.R. Chairunnisa, & S. Santi, S. "Online Counseling with Booklets And Videos As An Effort To Control Hypertension." *Selaparang Journal of Advanced Community Service*, vol. 4, no. 2 pp. 451-458, 2022.
- [7] Riskesdas. South Kalimantan Province RISKESDAS 2018 Report in 2019 National Riskesdas Report, 2019. [Online]. Available: <https://ejournal2.litbang.kemkes.go.id/index.php/lpb/issue/view/253>. [Accessed: 17 September 2022].
- [8] N. I Azizah, A. Ismunandar, and T. Winarno, "Comparison of Hypertension Therapy on Blood Pressure Reduction in Prolanis Patients at the Banyumas District Health Center, East Region." *Pharmacy Civilization Journal*, vol.1, no. 1, pp 32-40, 2021.
- [9] S. Supriyono, "Comparative Study of Hypertension Events in Healthy Family Training of Trainer at BBPK Ciloto and Bapelkes Batam," *Journal of Health*, vol. 12, no. 1, pp. 8-18. 2021.
- [10] E. Sihotang, E. "The Effect of Foot Reflexology on Blood Pressure Reduction in Hypertension Patients in Medan Tuntungan District in 2020," *Pandu Husada Journal*, vol. 2, no. 2, March 2021.
- [11] K. Febriyanto, "Community Service Through the Use of Therapeutic Paths for the Elderly in Sumber Sari Village, Kutai Kartanegara," *Sarwahita: Journal of Community Service*, vol. 16, no. 2, pp. 167–174, 2022.
- [12] M. Fandizal, Y. Astuti, and D. N. Sani, "Implementation of Solawatan Music on Pain Decrease in Clients with Hypertension," *Journal Prima Health Science*, vol. 1, no. 2, pp. 53–56, 2022.
- [13] R.A Rezky, Y. Hasneli & O. Hasanah, "The Effect of Foot Reflexology Therapy on Blood Pressure in Patients with Primary Hypertension," *Student Online Journal*, vol. 2, no. 2, pp. 1–20, 2015.
- [14] S. Hartutik and K. Suratih, "Effect of Foot Reflexology Therapy on Blood Pressure in Patients with Primary Hypertension," *Gaster*, vol. 15, no. 2, pp. 132. September 2017.
- [15] F. Umamah, and S. Paraswati, "The Effect of Foot Reflexology Therapy Using Manual Methods on Blood Pressure in Hypertensive Patients in the Karangrejo East Wonokromo Region," *Jurnal Ilmu Kesehatan*, vol. 7, no. 2, Mei 2019.
- [16] I. Lutvitaningsih, and M. Maryoto, "Pengaruh Terapi Pijat Refleksi Kaki terhadap Penurunan Tekanan Darah pada Lansia dengan Hipertensi," in *Seminar Nasional Penelitian Dan Pengabdian Kepada Masyarakat*, pp. 412-416, 2021.
- [17] R. D. Astuti, *Application of Foot Reflexology Therapy for Blood Pressure in Patients with Mild Hypertension*. Magelang: Muhammadiyah University of Magelang, 2020.
- [18] Indonesian Ministry of Health. Overview of Hypertension in Indonesia, 2020. [Online]. Available: <https://www.kemkes.go.id>. [Accessed: September 2022].

- [19] A. Arianto, S. Prastiwi, S. and A. Sutriningsih, "The Effect of Foot Reflexology Therapy on Changes in Blood Pressure in Hypertensive Patients," *Nursing News*, vol. 3, no. 1, pp. 584–594, 2021.
- [20] R. Aditya, & K. Khoiriyah, "Application of Foot Reflexology Therapy for Lowering Blood Pressure in Hypertensive Patients in Lowokwaru District, Malang City." *Holistic Nursing Care Approach*, vol. 1, no. 1, pp. 33. Maret 2021.
- [21] S. B Suryonegoro, M. M. Elfa, & M. S Noor, "Literature Review: Relationship of Hypertension in Menopausal Women and Old Age on Quality of Life," *Homeostasis*, vol. 4, no. 2, pp. 387-398, 2021.
- [22] N. Luh, P. Ekarini, J. D. Wahyuni, and D. Sulistyowati, "Factors Associated with Hypertension in Adult Age," *JKEP*, vol. 5, no. 1, pp. 61–73. 2021.
- [23] E. Nuraeni, "Relationship between Age and Gender at Risk with Hypertension Incidence at Clinic X Tangerang City," *JKFT Journal*, vol. 4, no. 1, pp. 1- 6. Marc 2021.
- [24] R. Tasalim, R. M Putri, and Masdayani, *Hypertension and its Handling Method (Based on Evidence Based Practice)*. Bogor: Guepedia, 2020.