

## THE EFFECTIVENESS OF EDUCATION IN INCREASING HYPERTENSION KNOWLEDGE IN HYPERTENSION PATIENTS AT THE PRATAMA CLINIC UIN SUNAN AMPEL SURABAYA

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### Abstract

Hypertension is a condition where the systolic blood pressure is 130 mmHg or diastolic is 80 mmHg; 80 – 95% in cases of essential hypertension. Hypertension can also be called the "silent killer" because hypertension does not show real symptoms, but can lead to life-threatening complications such as coronary heart disease, stroke, kidney failure and heart failure. Hypertension is also the biggest cause of the percentage of the population who have health complaints or disease morbidity in the world. Hypertension sufferers are estimated to reach 1.5 billion in 2025 and deaths can reach 9.4 million individuals. The purpose of this study was to determine the effectiveness of education in increasing knowledge of hypertension in patients with hypertension at the Pratama Clinic of Sunan Ampel State Islamic University (UINSA) Surabaya. The population in this study were patients with hypertension at the Primary Clinic UINSA Surabaya as many as 14 people. This study uses a quantitative method with One-Group Pretest-Posttest Design. The results of the study using the Mc Nemar statistical test obtained a value of  $p = 0.031 < 0.05$ . That is, providing education is effective in increasing knowledge of hypertension in hypertension patients at the UINSA Primary Clinic Surabaya.

**Keywords:** Hypertension, Education, Knowledge

### Introduction

Hypertension or what is usually called the silent killer is a disease that comes without symptoms. Hypertension will disrupt the circulatory system, resulting in an increase in blood pressure above normal, thereby leading to the risk of many diseases such as heart disease, kidney failure and stroke. Hypertension is a category of disease that has a major impact on death in the world. Based on estimates from the World Health Organization (WHO), the prevalence of hypertension is 22% of the world's population. Less than one fifth of the total prevalence makes efforts to control their blood pressure. The highest prevalence of hypertension is in the African region at 27%, while Southeast Asia is in third place at 25% of the total population.[14]

According to the American Heart Association (AHA), 74.5 million Americans are over the age of 20 years old suffering from high blood pressure. However, in almost 90-95% of cases the cause is unknown. In Indonesia, 1 in 10 people over the age of 18 suffered from high blood pressure in 1995, compared with 1 in 3 in 2007. Prevalence of hypertension was 31.7%, or 1 in 3 adults, and 76.1% did not know they had it.[12]

Based on Basic Health Research (Riskesdas 2018), the number of hypertension sufferers in Indonesia increased by 34.1%, compared to the number of hypertension sufferers in Riskesdas 2013 of

25.8%. In Indonesia, it is estimated that only one third are diagnosed with hypertension. This causes hypertension to become a major problem in the world of health.[12]

Hypertension is also a global public health challenge that can have a significant impact on quality of life and is also a significant risk factor its association with cardiovascular disease and death, or death due to hypertension at a young age.[1]

Hypertension can occur due to many factors such as lack of physical activity, unhealthy diet, consuming tobacco and alcohol. The factors that cause hypertension that cannot be changed come from a family history of hypertension, as well as comorbidities, namely diabetes or kidney disease. The elderly are also a factor in hypertension, most elderly people experience hypertension caused by stress and also dietary factors.

The spread of health problems is not only caused by individuals, but also by public ignorance due to a lack of correct information about diseases. Lack of public knowledge about hypertension is the main problem of uncontrolled blood pressure. One action to increase knowledge is to provide education in the form of assistance so that people can practice healthy living behavior. Various studies have shown that patient education has a positive impact on reducing blood pressure and improving patient knowledge and attitudes.

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The spread of health problems is not only caused by individuals, but also by public ignorance due to a lack of correct information about diseases. Lack of public knowledge about hypertension is the main problem of uncontrolled blood pressure. One action to increase knowledge is to provide education in the form of assistance so that people can practice healthy living behavior. Various studies have shown that patient education has a positive impact on reducing blood pressure and improving patient knowledge and attitudes.

Research conducted by Adiatman and Nursasi Pendidikan has proven to have a positive impact in increasing knowledge, attitudes and skills as well as reducing blood pressure. This study also found that the proportion of prevention education was much smaller than education for managing hypertension.[2]

The same research was also conducted by Istiqomah et al. The results show that by providing education about hypertension which includes a structured understanding & division of hypertension, clinical manifestations, etiology, control efforts, and understanding of culinary matters that must be limited for hypertension patients. Prolanis participants have a big influence on increasing knowledge by educating Prolanis participants.[3] Hypertension crisis education and screening activities carried out by Wirmando et al., hypertension sufferers in RT 5 and 6, RW 1, Batua Manggala and Makassar Districts also had a significant impact in increasing public knowledge, understanding and awareness of hypertension crisis.

Referring to the discussion above, this research aims to determine the effectiveness of education in increasing knowledge about hypertension in hypertension sufferers at the UINSA Surabaya Pratama Clinic.

## Research Methods

This research method uses a quantitative approach, combined with the nature of pre-experimental research and a one-group pre-test-post-test design, namely research with only one treatment group without a control group, pretreatment post-test and treatment examination. This research design can be explained as follows:

**Tabel 1. Desain One-Group Pretest-Posttest Design**

Pretest	Perlakuan	Posttest
O1	X	O2

Information:

O1 = Pretest value before treatment.

O2 = Posttest score after receiving treatment.

X= Treatment by implementing an educational process with the theme "Beware of Hypertension"

The subjects of this research were 14 hypertension sufferers who had been screened at the Pratama Clinic, Sunan Ampel State University, Surabaya. Research instrument The tool used to measure hypertension knowledge was adapted from a previous researcher (Purnama) [18] consisting of 10 questions with multiple choice answers and with a score of 10 for the correct answer and 0 for the wrong answer.

The educational material provided includes understanding, facts, risk factors, you and your symptoms, as well as preventing and treating hypertension, as well as how to regulate the diet of hypertension sufferers, and increasing compliance with taking medication in hypertension sufferers.

Furthermore, to test the hypothesis in this research, non-parametric statistics are used, namely the McNemar test. The use of non-parametric statistical tests is because the sample is very small, namely 14 people <30 people, which assumes that the data distribution is not normal. Meanwhile, the choice of the Mc Nemar test was due to the data in this research, the nominal data category. Apart from that, the McNemar test is a hypothesis testing method that is used if there are two paired samples, in this case the pre-test and post-test groups.

## Results

The research results can be described as follows:

**Tabel 2. Patient Characteristics**

No.	Characteristics	frequency	Percentage (%)
Age (Years)			
1.	30 – 40	3	21,3
2.	41 – 50	7	50
3.	51 – 60	4	28,7
4.	61 – 70	0	0
	Total	14	100
Gender			
1.	Male	4	28,5
2.	Female	10	71,5

Education			
1.	SD	0	0
2.	SMP	0	0
3.	SMA	3	21,4
4.	S1	6	42,9
5.	S2	5	35,7
6.	S3	0	0
Total		14	100

  

History of Hypertension			
1.	1-5 Tahun	10	71,4
2.	5-10 Tahun	2	14,3
3.	> 10 Tahun	2	14,3
Total		14	100

From the table above, it can be seen that the majority of subjects aged 41-50 years are 7 people or 50% of all educational participants. In terms of gender, it is known that there are more women suffering from hypertension than men, namely 10 of the 14 people suffering from hypertension in this study were women, while the other 4 people were men.

The table above also shows the educational level of the subjects, it is known that 3 people have high school education, 6 people have bachelor's degrees, and 5 people have master's degrees. This fact shows that the level of awareness of sufferers regarding their own health is also influenced by differences in education levels.

Judging from the history of hypertension in this study, it is known that the time interval is 1-5 years for 10 people, 5-10 years for 2 people and >10 years 2 people. This fact shows that a history of hypertension >5 years no longer causes complaints for sufferers, so they do not feel the need to have their blood pressure checked.

To determine differences in subjects' knowledge about hypertension, a pre-test was given before education and a pre-test after education. An overview of the pre and post test results can be seen in the following table:

**Tabel 3. Results of Pretest and Posttest Values for Hypertension Knowledge**

No	Name	Pretest Value	Posttest Value
1.	A	100	100
2.	B	60	100
3.	C	80	100
4.	D	70	80
5.	E	100	90
6.	F	70	90
7.	G	90	100
8.	H	90	100
9.	I	90	100

Based on the table of pretest and posttest results above, it is known that of the 14 participants, 12 of them experienced an increase in knowledge about hypertension. This means that, descriptively, it can be seen that there is a tendency to increase knowledge about hypertension after being provided with education.

Next, after testing the hypothesis with Mc. Nemar, the results can be seen in the following table:

**Tabel 4. Hypothesis Test Results**

N	14
Exact Sig. (2-tailed)	,031 <sup>b</sup>
a. McNemar Test	
b. Binomial distribution used	

From the table above it is known that  $p$  value = 0.031 < 0.05. The results of this study prove that providing education has a significant influence on increasing knowledge of hypertension for hypertension sufferers at the UINSA Surabaya Clinic.

## Discussion

From the descriptive data, shown in the table above, it is known that most hypertension sufferers included in this study were in the age group 41 to 50 years, amounting to 7 or 50% of all research subjects. The results of this study are in accordance with research conducted by Lumi et al, that as age increases, the risk of developing various diseases both inside and outside the body increases.[4]

The results of other studies show that hypertension is a disease that kills silently, on average sufferers experience a slight increase in blood pressure by 22.8% between the ages of 41 and 50 [5]. This fact shows that the proportion of hypertensive sufferers increases with age. Physiologically, increasing age is a risk factor for hypertension. The highest proportion of hypertension occurred in the age group  $\geq 75$  years at 63.8% in 2013 and increased to 69.5% in 2018.[13]

Other research states that the prevalence of hypertension is 29% at ages 25-44 years, 51% at ages 45-64 years, and 65% at ages 65 years and over (Setiawan, 2006). According to Rahajeng (2009) Hasurungan (2002), the risk of hypertension increases 2.18 times at the age of 60-64, 2.45 times at the age of 65-69, and 2.97 times at the age of 70 years and over. [6]

From the results of this study, it was also proven that there were more women suffering from hypertension than men, namely 10 of the 14 people suffering from hypertension in this study were women, while the other 4 people were men. This fact is in line with Azhari's research which states that from the bivariate analysis results obtained a  $p$  value = 0.026, a value = 0.05  $p = 0.05$   $p < \square$  which means that there is a relationship between the incidence of hypertension and gender. Apart from that, the odds ratio (OR) = 2.708 was obtained. From the results of this ratio, it shows that female respondents are 2.7 times more likely to experience hypertension than male respondents, with a confidence level value (95% CI) = 1.197 - 6.126.[4]

Research by the Indonesian Ministry of Health (2019) also shows that the proportion of women is greater than that of men. This pattern occurred in 2013 and 2018 [13]. Women tend to be more at risk of developing hypertension after menopause, namely after the age of 45 years.[8]

Data on education level shows that 3 people have high school education, 6 people have a bachelor's degree, and 5 people have a master's degree. This fact shows that the level of awareness of sufferers regarding their own health is also influenced by differences in education levels. This is in accordance with research conducted by Daeli which revealed that the higher the respondent's knowledge about hypertension, the higher the efforts to prevent hypertension [16]. Sufferers with good knowledge of their hypertension will adhere to medications and dietary restrictions. Apart from increasing knowledge about hypertension, hypertension sufferers can manage their disease with treatments that make them feel better.[9]

Judging from the history of hypertension in this study, it is known that the time interval is 1-5 years for 10 people, 5-10 years for 2 people and >10 years 2 people. This fact shows that a history of hypertension >5 years no longer causes complaints for sufferers, so they do not feel the need to have their blood pressure checked. This is in line with research conducted by the Indonesian Ministry of Health that not all hypertension sufferers have visible symptoms. Most sufferers are found to have high blood pressure after being tested in primary and secondary care settings. This is why high blood pressure is called the silent killer.[13]

To reduce the effects caused by hypertensive crises, hypertensive patients need to be given information and understanding about hypertensive crises. Increasing knowledge can be done through education and health education.[15] Health consultation as an enlightenment activity by disseminating news information, instilling confidence, is very necessary so that people are aware and informed and understand, and be able to follow health recommendations.[15]

From the results of this research, it is proven that providing education has a significant influence on increasing knowledge of hypertension for hypertension sufferers at the UINSA Surabaya Clinic.

The results of this study confirm previous research by Herwanti et al. The results of the study showed that hypertension education using pamphlet media was effective in changing self-management behavior in hypertension sufferers.[10]

Other research has found that by providing hypertension education, including understanding and classification of hypertension, its symptoms, causal factors, and how to control it, as well as understanding the consumption that needs to be regulated by hypertension sufferers, will increase participants' knowledge of prolansis.[3]

Likewise, providing education is effective in increasing understanding about hypertension in the elderly and in preventing hypertension, so that efforts to prevent hypertension through healthy lifestyle practices can be carried out.[11]

This education is provided in order to involve hypertension sufferers in carrying out self-management. This self-management motivates patients, especially those suffering from chronic diseases, to use existing resources to overcome the symptoms they experience. In addition to self-management behaviors, patients can facilitate necessary preventive and therapeutic activities. Health education promotes patient independence so that patients can manage their own illnesses.[17]

Patient compliance must be improved by holding regular educational activities by health workers. The same effort was also carried out by Yogyakarta City Health Service staff by preparing a budget plan for health facilities to encourage Introduction to Prolansis. Yogyakarta City Health Service staff also provide training, coaching, monitoring and evaluation of Puskesmas staff who provide Prolansis services. Puskesmas also coordinates between management programs. The hope is that the Community Health Center can carry out promotive and preventive activities optimally.[20]

Thus, providing education is very necessary for hypertension sufferers in order to eliminate complications and improve the quality of life by maintaining a healthy lifestyle.

## **Conclusions and Recommendations**

Hypertension is a systolic blood pressure of 130 mmHg or a diastolic blood pressure of 80 mmHg. 80-95 with essential hypertension. Hypertension can also be called the "silent killer" because high blood pressure does not cause long-term symptoms. However, it can cause life-threatening complications such as coronary heart disease, stroke, kidney failure and heart failure. Hypertension is also the biggest cause for the percentage of the population who have health complaints or morbidity. In 2025, it is estimated that 1.5 billion people will suffer from hypertension and 9.4 million will die. Many factors cause high blood pressure, including lack of lifestyle, environment, education, experience, and general ignorance about the treatment needed for hypertensive patients. Therefore, it

is very important for people with high blood pressure to have knowledge about how to treat high blood pressure.[19]

Based on the results of research conducted after being given the posttest, of the 14 participants, 12 of them experienced an increase in knowledge about hypertension. This means that descriptively it can be seen that there is an increasing trend knowledge about hypertension after being given education.

The results of this study prove that providing education has a significant influence on increasing knowledge of hypertension for hypertension sufferers at the UINSA Surabaya Clinic with a value of  $p$  value =  $0.031 < 0.05$  Providing this education needs to be followed up as part of promotive services to the community to improve the level of public health.

Recommendations to medical institutions are expected to provide care that prioritizes beneficial and preventive aspects to patients with a history of hypertension. Promotive care focuses on patients undergoing regular examinations to control and eliminate the development of advanced hypertensive complications. Although there has been a lot of research conducted on hypertension, this research will be a reference for further research to deepen knowledge and understanding of hypertension.

The level of education can also influence a person's level of knowledge about hypertension and how to prevent it. This knowledge is very important because it can influence thought patterns and behavior changes towards a healthy life for sufferers, especially in treating hypertension. This means that a person's level of knowledge will greatly influence the efforts made to maintain the quality of life so that it remains in a healthy state.

## References

- [1] S. Barron, K. Balanda, J. Hughes, and L. Fahy, "National and subnational hypertension prevalence estimates for the Republic of Ireland: Better outcome and risk factor data are needed to produce better prevalence estimates," *BMC Public Health*, vol. 14, no. 1, pp. 1–10, 2014, doi: 10.1186/1471-2458-14-24.
- [2] A. Y. N. Adiatman, "DOI: <http://dx.doi.org/10.33846/sf11302> Efektifitas Edukasi dalam Pencegahan dan Pengendalian Hipertensi Adiatman," *J. Penelit. Kesehat. Suara Forikes*, vol. 11, no. 1, pp. 228–232, 2020.
- [3] F. Istiqomah, A. I. Tawakal, C. D. Haliman, and D. R. Atmaka, "Pengaruh Pemberian Edukasi Terhadap Pengetahuan Hipertensi Peserta Prolanis Perempuan Di Puskesmas Brambang, Kabupaten Jombang," *Media Gizi Kesmas*, vol. 11, no. 1, pp. 159–165, 2022, doi: 10.20473/mgk.v11i1.2022.159-165.
- [4] F. Lumi, M. Terok, and F. Budiman, "Hubungan Derajat Penyakit Hipertensi Dengan Tingkat Kecemasan Pada Kelompok Lanjut Usia Di Wilayah Kerja Puskesmas Kahakitang Kecamatan Tatoareng," *Media Kesehat. Politek. Kesehat. Makassar*, vol. 13, no. 2, p. 59, 2018, doi: 10.32382/medkes.v13i2.664.
- [5] Rusdiana, M. Insana, and A. A. Hafiz, "Kerja Puskesmas Guntung Payung," *J. Keperawatan Suaka Insa.*, vol. 4, no. 2, 2019.
- [6] Warjiman *et al.*, "Skrining dan edukasi penderita hipertensi," *J. Suaka Insa. Mengabdi*, vol. 2, no. 1, pp. 15–26, 2020, [Online]. Available: <http://journal.stikessuakainsan.ac.id/index.php/JSIM/article/view/215>
- [7] M. H. Azhari, "Faktor-Faktor yang Berhubungan dengan Kejadian Hipertensi di Puskesmas Makrayu Kecamatan Ilir Barat II Palembang," *J. Aisyah J. Ilmu Kesehat.*, vol. 2, no. 1, pp. 23–30, 2017, doi: 10.30604/jika.v2i1.29.
- [8] Tri Novitaningtyas, "Hubungan Karakteristik (Umur, Jenis Kelamin, Tingkat Pendidikan) Dan Aktivitas Fisik Dengan Tekanan Darah Pada Lansia Di Kelurahan Makmahaji Kecamatan Kartasura Kabupaten Sukoharjo," No. Hubungan Karakteristik (Umur, Jenis

- Kelamin, Tingkat Pendidikan) Dan Aktivitas Fisik Dengan Tekanan Darah Pada Lansia Di Kelurahan Makamhaji Kecamatan Kartasura Kabupaten Sukoharjo, p. 634, 2014, [Online]. Available:<https://hsgm.saglik.gov.tr/depo/birimler/saglikli-beslenme-hareketli-hayat-db/Yayinlar/kitaplar/diger-kitaplar/TBSA-Beslenme-Yayini.pdf>
- [9] E. U. Dewi, M. H. Bakri, and Y. Dari, "Hubungan Antara Pengetahuan dan Gaya Hidup dengan Hipertensi di Puskesmas Depok 2 Condong Catur Depok Sleman The Relation of Knowledge and Life Style with Hipertension at Puskesmas Depok 2 Condong Catur Sleman," *J. Heal.*, vol. 4, no. 2, pp. 100–106, 2017.
- [10] E. Herwanti, M. Sambriang, and S. S. Kleden, "Efektifitas Edukasi Hipertensi Dengan Media Booklet Terhadap Perilaku Self Management Hipertensi Di Puskesmas Penfui Kota Kupang," *Flobamora Nurs. J.*, vol. 1, no. 1, pp. 5–11, 2021.
- [11] V. Sesrianty, E. Amalia, L. Fradisa, and M. Arif, "Pemberian Edukasi Tentang Pencegahan Hipertensi Di Posyandu Lansia Cendrawasih Bukittinggi," *J. Abdimas Kesehatan. Perintis*, vol. 1, no. 2, pp. 50–54, 2020.
- [12] Kementerian Kesehatan Republik Indonesia (2013). *Hasil Utama Riset Kesehatan Dasar 2018*, 1-100 <https://doi.org/10.2196/1> Desember 2013 (Diakses Tanggal 15 November 2019)
- [13] Kementerian Kesehatan RI. (2019). *Laporan Riskesdas 2018*.
- [14] World Health Organization, (WHO). (2019). *Hypertension*. WHO.
- [15] Notoatmodjo, S. (2012). *Promosi Kesehatan dan Perilaku Kesehatan*. Rineka Cipta.
- [16] Daeli, F. S. (2017). Hubungan Tingkat Pengetahuan Dan Sikap Penderita Hipertensi Dengan Upaya Pengendalian Hipertensi Di Uptd Puskesmas Kecamatan Gunungsitoli Selatan Kota Gunungsitoli Tahun 2017. Universitas Sumatera Utara.
- [17] Sutanto. 2010. *Cekal (Cegah dan Tangkal) penyakit modern : Hipertensi, stroke, jantung, kolesterol, dan diabetes (gejala-gejala, pencegahan dan pengendalian)*. Yogyakarta : ANDI Yogyakarta.
- [18] Sang Gede Purnama, Arya Utami, Ni Putu Septarini. 2016. *Pengabdian Masyarakat Pemeriksaan Dan Pengendalian Hipertensi Banjar Puseh Kangin, Desa Sanur Kauh*.
- [19] Ade Tika Herawati, H. Manaf, Eka Putri Kusumawati. 2021. Pengetahuan Tentang Penanganan Penyakit Hipertensi Pada Penderita Hipertensi. *Jurnal Ilmiah Kesehatan Pencerah*, vol. 10 (2), pp. 159-165.
- [20] Anita Meiriana, Laksono Trisnantoro dan Retna Siwi Padmawati " Implementasi Program Pengelolaan Penyakit Kronis (Prolanis) Pada Penyakit Hipertensi Di Puskesmas Jetis Kota Yogyakarta" *Jurnal Kebijakan Kesehatan Indonesia.*, vol. 08, No. 02 51-58, 2019.