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Factors Affecting Hypertensive Patients in Making Efforts to Prevent Complications in the Work Area of Tlogosari Wetan and Tlogosari Kulon Health Centers, Semarang City

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Abstract

This study aims to determine the factors that influence hypertensive patients in making efforts to prevent complications in the working area of the Tlogosari Wetan and Tlogosari Kulon Public Health Centers, Semarang City. The types and designs in this research include quantitative research designs and survey research types. Survey research is a research that looks for how a health phenomenon occurs. The results showed that statistical analysis using the Chi square test with sig.0.05 showed the results of p value 0.007 meaning p <0.05 so ho was rejected, so it was concluded that there was a relationship between self-efficacy and efforts to prevent hypertension patients from getting complications in the work area. Tlogosari Wetan and Tlogosari Kulon Public Health Centers, Semarang City, as well as the results of statistical analysis using the Chi square test with sig.0.05 shows p value 0.303 meaning p>0.05 so ho is accepted, so it can be concluded that there is no relationship between effectiveness response and patient prevention efforts. Hypertension so as not to get complications in the working area of the Tlogosari Wetan and Tlogosari Kulon Health Centers, Semarang City

Keywords
Tlogosari Wetan and Tlogosari Kulon health centers; Semarang city; response effectiveness; self-efficacy; prevention of hypertension patients

I. Introduction

Technological developments in Developing countries have caused changes in demographics and epidemiology which are characterized by changing lifestyles and increasing prevalence of non-communicable diseases. The occurrence of this transition is due to changes in the socio-economic structure, environment and demographics. If people follow unhealthy lifestyles such as smoking, lack of exercise, high-fat and high-calorie diet, and alcohol consumption, these are suspected risk factors for developing PTM. Non-communicable diseases pose a public health burden because of their prevalence and are a group of diseases that spread globally, are the main cause of death and are very difficult to control. Interest in non-communicable diseases is increasing day by day due to the increasing frequency of occurrence in the community (MN Bustan, 2015).

Hypertension is a non-communicable diseaseand the leading cause of premature death in the world. The World Health Organization (World Health Organization) currently estimates that the global prevalence of hypertension is 22% of the total world population. Less than one-fifth of these patients are trying to control their blood pressure(Ministry of Health, 2019). According to WHO, the number of hypertensive patients has increased every year, therefore it is possible that by 2025 there will be an increase of 1.5 billion hypertensive patients, and it is estimated that around 9.4 million hypertensive patients will die every year.(Gunawan et al., 2020).

Efforts to prevent hypertension patients from getting complications must be carried out by various parties, including even hypertension patients. The programs implemented by the government through the Puskesmas, for example the Chronic Disease Management Program (PROLANIS), Integrated Development Post (POSBINDU) for Non-Communicable Diseases, and Youth POSBINDU are one of the right steps to handle and detect cases of Hypertension in Indonesia.

Developed countries have proven that by increasing public awareness of hypertension and modifying their lifestyle according to WHO recommendations, they can successfully reduce mortality due to hypertension and cardiovascular disease (heart disease, stroke, and peripheral blood vessel disease).(Ministry of Health, 2013). Hypertension is also often referred to as an asymptomatic disease because it often dies without complaints, and it is not known whether high blood pressure is a concern. According to research by Riskesdas and Puskesmas in 2007, less than a quarter of hypertensive patients received regular treatment. This is believed to be due to the patient's low understanding of potentially fatal complications (heart failure, stroke, chronic kidney disease).(Ministry of Health, 2013).

II. Research Method

Types and designs include quantitative research designs and survey research types. Survey research is a research that looks for how a health phenomenon occurs. The research approach uses cross sectional, where data collection is carried out and collected at the same time.

III. Results and Discussion

3.1 Results

a. Research Site Overview

SubdistrictPedurungan is one of the sub-districts in the city of Semarang. Geographically, the area of Pedurungan District is ± 2,072 Ha which is divided into 12 Kelurahan, namely Penggaron Kidul, Tlogomulyo, Tlogosari Wetan, Tlogosari Kulon, Muktiharjo Kidul, Plamongansari, Gemah, Pedurungan Kidul, Pedurungan Lor, Middle Pedurungan, Palebon and Kalicari, and consists of 159 RW and 1,191 RT. Administratively, Pedurungan District is directly adjacent to the Genuk Districtin the north,Demak Regency in the east, Tembalang Districtin the south and Gayamsari District in the west.

SubdistrictPedurungan has 2 health centers located in two different villages, namely the Tlogosari Wetan and Tlogosari Kulon health centers. It has been explained previously that the Tlogosari Wetan and Tlogosari Kulon health centers are the health centers with the highest hypertension cases in Semarang. According to data from the Semarang City Health Office, the Tlogosari Wetan Health Center in 2019 had 23,870 cases of hypertension and in 2020 there were 10,565 hypertension patients, while at the Tlogosari Kulon Health Center in 2019 there were 22,293 cases of hypertension patients and in 2020 there were 11,354 hypertension patients.

b. Univariate Analysis

1. Characteristics of Informants

CharacteristicsThe informants consisted of 104 hypertension patients with an age range of 15-64 years, which were evenly distributed in the Tlogosari Wetan and Tlogosari Kuon health centers, Semarang City. The selected informants were adjusted to the inclusion criteria that had been made, namely patients who only had hypertension and had not been exposed to complications, patients who checked their health conditions at Tlogosari Wetan and Tlogosari Kulon Health Centers, Semarang City, Secondary and Primary Hypertension Patients, Able to communicate well and Willing to be Informants with how to approve the consent form to be a sample.

a) Distribution and frequency of informants by age of informants

According to the measurement data, the lowest age is 20 years and the highest age is 49 years. the average age of the informants is 30-40 years. The age distribution of the informants can be seen in table 1 as follows.

Table 1. Frequency distribution of informant characteristics by age

No	Age	n	%
1.	36 years	54	51.9
2.	36 years	50	48.1
	Total	104	100.0

The table above shows that the highest percentage of informants' age is in the age group 36 years at 51.9 &, compared to age 36 years at 48.1%.

b) Distribution and frequency of informants by Gender

Gender is a biological characteristic of hypertension patients as informants in the study. The gender distribution of informants can be seen in table 2 as follows.

Table 2. Frequency Distribution of Informant Characteristics by Gender

No	Gender	Frequency	Presentation (%)
1.	Man	33	31.7
2.	Woman	71	68.3
	Total	104	100.0

The table above shows the highest percentage of informants' gender is in female gender as much as 68.3% compared to male gender only 31.7% informants.

c) Distribution and Frequency of Informants by Last Education

Distribution and frequencyHypertension patient informants according to the latest education is the education level of Hypertension patients which is seen according to the number of years taken to complete the last formal education. The education level of the informants of Hypertension Patients is further divided into three parts, the first is the basic education level if the Hypertension patient only completes elementary and junior high school education, the second is the secondary education level if the Hypertension patient only completes high school education/graduated and the third is the higher education level if the patient Hypertension completed education / graduated from college and university. The distribution of the informant's latest education can be seen in table 3 as follows.

Table 3. Frequency Distributioncharacteristics of informants according to the last education

No	Last education	Frequency	Percentage (%)
1.	basic education	16	15.4
2.	Middle education	58	55.8
3.	higher education	30	28.8
	Total	104	100.0

According to table 3 the distribution and frequency of informants according to the latest education level, it was found that the informants with the most education levels were the secondary education level as much as 55.8%, then the higher education level as much as 28.8%, and the basic education level as much as 15.4% informants.

d) Distribution and Frequency of Informants by Occupation

Professioninformants are the main activity of Hypertension Patients who do and get income from these activities, and these activities are still being carried out during data collection by researchers. Jobs are divided into two, namely formal sector work and informal sector work, while the formal sector work is for example Civil Servants (PNS), BUMN employees, factory workers and other office employees, while the Informal Sector is for example street vendors, public transportation drivers, pedicab drivers and small-scale entrepreneurs micro.

Table 4. Distribution and Frequency of Informants by occupation

No	Profession	Frequency	Percentage (%)
1.	formal	43	4,.3
2.	Informal	61	58.8
	Total	104	100.0

According to table 4 the distribution and frequency of informants by occupation, it was found that more informants worked in the informal sector as many as 58.8%, while in the formal sector as many as 41.3% of informants.

e) Distribution and Frequency of Informants by Income

The income of the informants is categorized according to the minimum wage for Semarang City, namely <UMR in Semarang City and UMR in Semarang City. The following is the distribution of the income frequency of the informants according to the UMR in the city of Semarang.

Table 5. Frequency distribution of informant characteristics by income

No	Income	Frequency	Percentage (%)
1.	UMR	45	43.3
2.	UMR	59	56.7
	Total	104	100.0

According to table 5, it can be seen that the percentage of informants' income is higher in the income group =UMR Semarang City (56.7%) than in the group with income <UMR Semarang City (43.3%).

2. Self-Efficacy

The distribution of informants for self-efficacy is as follows:

Table 6. Distribution and frequency of self-efficacy

No	Self-Efficacy	Frequency	Percentage (%)
1.	Not enough	49	47.1
2.	Well	55	52.9
	Total	104	100.0

According to table 6, it is known that the percentage of informants' self-efficacy is higher in informants who have good self-efficacy (52.9%), compared to less self-efficacy informants (47.1%).

Answerinformants according to the item of Self-Efficacy statement can be seen in the following table:

Table 7. Distribution of informants' answers to each self-efficacy question

No	Self-Efficacy	No		Yes	
		n	%	n	%
1.	I have time to do physical activity for 30 minutes and at least 3 times a week.	16	15.5	88	84.6
2.	I have a vehicle to be able to go to the health center where I check my health condition.	7	6.7	97	93.3
3.	I was able to refuse invitations to smoke from the environment around me.	19	18.3	85	81.7
4.	I can stop myself from smoking for any reason.	19	18.3	85	81.7
5.	I can stop myself from drinking alcohol for any reason.	4	3.8	100	96.2
6.	I am able to control my diet by consuming low salt and sugar in my diet.	35	33.7	69	66.3
7.	I believe that changing my diet by following a balanced diet can improve my health status.	10	9.6	94	90.4
8.	I believe that by doing physical activity, I can improve my health status.	4	3.8	100	96.2
9.	I am able to spend more funds/costs in doing the Hypertension/balanced diet.	27	26.0	77	74.0
10.	I am able to manage my stress.	11	10.6	93	89.0
11.	I have a strategy for coping/finding a way out when I'm stressed.	17	16.3	87	83.7
12.	I am able to take the time to participate in puskesmas activities in the context of maintaining/improving my health knowledge.	30	28.8	74	71.2
13.	I can afford to eat low salt foods.	23	22.1	81	77.9
14.	I can move 4,000-8,000 steps per day.	24	23.1	80	76.9

According to the table above, the average number of informants answered yes to more than 80% of each question point regarding self-efficacy regarding efforts to prevent complications due to hypertension. The only question regarding the control of consumption of low-salt and sugar foods is below 80%, which is 66.3. on the question of spending funds

to do a hypertension diet is also still lacking (74.0), and the effort to take the time to come to participate in their puskesmas activities is also still low at 71.2%

3. Effective Response

DistributionInformants for Effectiveness Response are as follows:

Table 8. Distribution and frequency of Effectiveness Response

No	Effective Response	Frequency	Percentage (%)
1.	Low	52	50.0
2.	Tall	52	40.0
	Total	104	100.0

According to table 8, it is known that the percentage of the Effectiveness Response of informants owned by Hypertension patients is quite balanced between those with low and high effectiveness responses, namely 50%.

Answerthe informants according to the item of the Effectiveness Response statement can be seen in the following table:

Table 9. Answer distributioninformants of each question Effectiveness Response

No	Effective Response	Strongly agree		Agree		Don't agree		Strongly disagree	
		n	%	n	%	n	%	n	%
1.	I believe by doing physical activity can reduce the risk of complications.	37	35.6	44	42.3	5	4.8	18	17.3
2.	I believe that doing physical activity can reduce the severity of my hypertension.	43	41.3	36	34.6	14	13.5	11	10.6
3.	I believe that by maintaining my diet by minimizing the consumption of excess salt, I can improve my health.	35	33.7	39	37.5	20	19.2	10	9.6
4.	I believe that by not consuming alcohol and smoking is a concern for my health.	39	37.5	42	40.4	7	6.7	16	15.4
5.	I believe that changing my diet to a healthier one can improve my health.	41	39.4	41	39.4	4.	3.8	18	17.3
6.	I believe that managing stress well can reduce the risk of hypertension.	31	29.8	50	48.1	8	7.7	15	14.4
7.	I believe eating fruits can prevent me from getting complications due to hypertension.	35	33.7	45	43.3	13	12.5	11	10.6
8.	I believe that consuming vegetables can prevent me from getting complications	32	30.8	49	47.1	9	8.7	14	13.5

	due to hypertension.								
9.	I believe that hypertension can be controlled by doing physical activities such as regular exercise 3 times a week.	30	28.8	50	48.1	17	16.3	7	6.7
10.	I am sure that by enriching my knowledge about Hypertension I can be protected from complications.	36	34.6	47	45.2	10	9.6	11	10.6
11.	Hypertension is easily cured by taking hypertension drugs regularly.	30	28.8	45	43.3	20	19.2	9	8.7
12.	I believe Hypertension is a cursed disease*	33	31.7	49	47.1	17	16.3	5	4.8
13.	I believe hypertension is not a serious health problem*	22	21.2	50	48.1	28	26.9	4	3.8
14.	By consuming low salt and sugar behavior, hypertension can be controlled.	16	15.4	53	51.0	25	24.0	10	9.6
15.	Drinking alcoholic beverages every day is not a major trigger for Hypertension*	26	25.0	57	54.8	18	17.3	3	2.9

Table 9 stating the informant's answer to the effectiveness response to the prevention of complications due to hypertension, the average informant has a less effective response. there are only 2 points answered agree more than 50%, namely 51.4% of the informants believe that by consuming low salt and sugar behavior, hypertension can be controlled. 54.8% of the informants also agreed that consuming alcohol every day is a cause of complications in hypertension patients.

4. Vulnerability

DistributionInformants for Vulnerability are as follows:

Table 10. Distribution and frequency of Vulnerability

No	Vulnerability	Frequency	Percentage (%)
1.	Not enough	47	45.2
2.	Well	57	54.8
	Total	104	100.0

According to table 10, it is known that the percentage of Vulnerability informants is higher for informants with Good Vulnerability (54.8%), compared to informants with Less Vulnerability (45.2).

Answerinformants according to Vulnerability statement items can be seen in the following table:

Table 11. Distribution of Respondents' Answers for each Vulnerability Question

No	*Vulnerability*	Sangat setuju		setuju		Tidak setuju		Sangat tidak setuju	
		n	%	n	%	n	%	n	%
1.	Saya merasa beresiko terkena Komplikasi penyakit akibat Hipertensi. karna adanya riwayat penyakit keluaga.	36	34.6	37	35.6	16	15.4	15	14.4
2.	Gaya hidup yang saya jalani sangat beresiko terkena Komplikasi penyakit.	23	22.1	40	38.5	32	30.8	9	8.7
3.	Perempuan lebih beresiko terkena Komplikasi dari pada laki-laki.	19	18.3	33	31.7	44	42.3	8	7.7
4.	Kemungkinan besar saya akan terkena Komplikasi penyakit apabila tidak merubah prilaku hidup sehat pada diri saya.	17	16.3	52	50.0	24	23.1	11	10.6
5.	Pada pasien hipertensi, dengan tidak mengkonsumsi obat hipertensi secara teratur maka akan meningkatkan peluang terjadinya komplikasi.	27	26.0	48	46.2	17	16.3	12	11.5
6.	Saya lebih beresiko terkena Komplikasi penyakit apabila tetap melakukan prilaku merokok.	21	20.2	57	54.8	16	15.4	10	9.6
7.	Penderita Diabetes Millitus lebih beresiko terkena penyakit Hipertensi.	26	25.0	48	46.2	34	23.1	6	5.8
8.	Penderita Hipertensi dengan Obesitas lebih rentan terkena Komplikasi penyakit.	26	25.0	45	43.3	22	21.2	11	10.6
9.	Penderita Hipertensi dengan usia dewasa lebih rentan terkena Komplikasi Penyakit.	24	23.1	47	45.2	26	25.0	7	6.7
10.	Saya merasa rentan terkena Komplikasi, karna saya berada di lingkungan yang banyak asap rokok.	25	24.0	47	45.2	27	26.0	5	4.8
11.	Perilaku mengkonsumsi garam berlebih pada makanan tidak berpengaruh terhadap kondisi Hipertensi*	24	23.1	51	49.0	23	22.1	6	5.8
12.	Saya merasa tidak rentan terkena Komplikasi penyakti apabila tidak melakukan aktifitas fisik rutin*	27	26.0	61	58.7	11	10.6	5	4.8
13.	Hipertensi bukanlah penyakit yang mematikan*	30	28.8	35	33.7	29	27.9	10	9.6
14.	Hipertensi bukanlah penyakit yang manakutkan*	26	25.0	44	42.3	28	26.9	6	5.8
15.	Hipertensi tidak menyebabkan terkenan penyakit giljal kronis.*	32	30.8	35	33.7	36	34.6	1	1.0

According to the table above, it can be seen the description of the informants' answers to the questions given. There are only 4 points answered strongly disagree more than 10% i.e. 14.4% of the informants answered disagree if the risk of complications due to a family history of disease, as much as 10.6% they do not believe that changing healthy living behavior is a prevention effort, 11 ,5% did not believe that taking hypertension medication was an effort to prevent complications from other diseases, and 10.6% of informants did not believe that patients with obesity were at risk for complications.

5. Fear

DistributionInformants for Fear are as follows:

Table 12. Distribution and frequency of Fear

No	Fear	Frequency	Percentage (%)
1.	Low	50	48.1
2.	Tall	54	51.9
	Total	104	100.0

According to table 12, it is known that the percentage of informants' fear is higher for informants with low fear (58.1%), compared to high fear informants (51.9).

Answerinformants according to Fear's statement items can be seen in the following table:

Table 13. Distribution of respondents' answers to each question Fear

No	*Fear*	Sangat setuju		Setuju		Tidak setuju		Sangat tidak setuju	
		n	%	n	%	n	%	n	%
1.	Saya merasa penyakit Hipertensi tidak dapat dikendalikan dan disembuhkan.	12	11.5	32	30.8	49	47.1	11	10.6
2.	Saya merasa penyakit Hipertensi dapat mengakibatkan kematian.	8	7.7	41	39.4	40	38.5	15	14.4
3.	Saya merasa Hipertensi penyebab terjadinya penyakit ginjal kronik	19	18.3	35	33.7	40	38.5	10	9.6
4.	Hipertensi adalah	15	14.4	45	43.3	37	35.6	7	6.7

	penyakit keturunan yang tidak bisa dihindari dan di sembuhkan.								
5.	Saya merasa cemas apabila terfikirkan tentang bahaya penyakit hipetensi.	13	12.5	53	51.0	29	27.9	9	8.7
6.	Hipertensi dapat mengakibatkan terkena penyakit diabetes militus.	22	21.2	41	39.4	37	35.6	4	3.8
7.	Hipertensi berpelungan untuk terkenan penyakit jantung coroner.	11	10.6	62	59.6	23	22.1	8	7.7
8.	Saya tidak takut dengan penyakit Hipertensi karna tidak dapat menyebabkan keparahan/kematian*	15	14.4	69	66.3	15	14.4	5	4.8
9.	Hipertensi bukanlah penyakit yang membunuh banyak orang*	19	18.3	58	55.8	24	23.1	3	2.9
10.	Hipertensi hanya menyerang di usia 50 tahun ke atas*	29	27.9	62	59.6	10	9.6	3	2.9
11.	Hipertensi mudah untuk di sembuhkan tidak perlu diet seimbang tetapi hanya dengan cara tidak mengkonsumsi daging berlebih*	15	14.4	51	49.0	34	32.7	4	3.8
12.	Banyak kasus kematian mendadak bukan disebabkan oleh penyakit hipertensi*	18	17.3	43	41.3	36	34.6	7	6.7
13.	Cukup dengan mengelola stress dengan baik maka saya tidak merasa takut dengan bahaya hipertensi*	16	15.4	50	48.1	34	32.7	4	3.8
14.	Hipertensi bukanlah penyakit yang dapat mengakibatkan terkena komplikasi penyakit lain*	19	18.3	60	57.7	21	20.2	4	3.8
15.	Hipertensi bukan suatu penyakit yang dapat mengakibatkan kelumpuhan*	21	20.2	53	51.0	27	26.0	3	2.9

From the distribution results according to the question items obtained the wrong answer frominformants, namely as many as 66.3 informants thought that hypertension could not cause severity/death. The rest of the answers to other questions are good enough.

6. Efforts to prevent hypertension patients to prevent complications

DistributionInformants for prevention efforts are as follows:

Table 14. Distribution and frequency of prevention efforts

No	Prevention	Frequency	Percentage (%)
1.	Low	36	34.6
2.	Tall	68	65.4
	Total	104	100.0

According to table 14, it is known that the percentage of hypertension patients is higher who makes prevention efforts as much as 65.4% compared to informants who do not take preventive efforts at 34.6%.

Table 15. Answer distribution informants of any questions on the prevention of hypertension patients

No	Prevention	No		Yes	
		n	%	n	%
1.	I've been doing physical activity.	9	8.7	95	91.3
2.	I have adjusted my diet (minimizing salty and fatty foods).	29	27.1	75	72.1
3.	I've managed stress management.	9	8.7	95	91.3
4.	I have minimized / not consumed alcohol.	4	3.8	100	96.2
5.	I have minimized / not smoking.	13	12.5	91	87.5
6.	I've been eating fruits and vegetables every day.	19	18.3	85	81.7
7.	I have taken the time to do routine health checks at the nearest health service.	18	17.3	86	82.7
8.	I take anti-hypertensive drugs on a regular basis.	29	27.9	75	72.1

According to 8 items of questions about prevention efforts that have been carried out by hypertensive patients so as not to get complications, an average of 80% of patients answered that they had taken preventive measures, only 2 points answered less than 80%, namely 72.1% of hypertensive patients taking hypertension drugs regularly, and 72. ,1% of patients who have just adjusted their diet by minimizing the consumption of salt and sugar in their diet.

c. Bivariate

There are two types of analysisBivariate analysis was carried out, the first was cross tabulation to see the correlation pattern of 2 variables according to the data, while statistical bivariate analysis was carried out using chi square to see the significance between the independent variable and the dependent variable. To find out whether there is a correlation between the independent variable and the dependent variable, it can be seen from the p value. Ho is accepted if p value > 0.05 while ho is rejected if p value < 0.05.

1. Self-efficacy correlation with efforts to prevent hypertensive patients from developing complications

AnalysisThe correlation between Self-efficacy of Hypertension patient informants and prevention efforts so as not to get complications can be seen from the following table:

Table 16. Correlation of self-efficacy of hypertension patients with prevention of complications

Self-efficacy	Upaya pencegahan				*p value*
	Rendah		Tinggi		
	n	%	n	%	
Kurang	24	49.0	24	51.9	0.007
Baik	12	21.8	43	78.2	

According to the table above, the percentage of efforts to prevent hypertension in patients with low hypertension is higher for informants with a level of self-efficacy less than 49.0% compared to good self-efficacy of 21.8%. Meanwhile, the percentage of self-efficacy for high blood pressure patients is higher for informants with a good self-efficacy level of 78% compared to 51.9% less self-efficacy.

Analysis resultstatistics using the Chi square test with sig.0.05 shows the results of p value 0.007 meaning p <0.05 so ho is rejected, therefore it is concluded that there is a correlation between self-efficacy and efforts to prevent hypertension patients from getting complications in the Tlogosari Health Center work area Wetan and Tlogosari Kulon, Semarang City.

2. Correlation of effectiveness response with efforts to prevent hypertensive patients from developing complications

The correlation between the effectiveness of the Hypertension patient informant response and prevention efforts so as not to get complications can be seen from the following table:

Table 17. Correlation of the response of the effectiveness of hypertension patients with the prevention of complications

Respon efektifitas	Rendah		Tinggi		*p value*
	n	%	N	%	
Rendah	21	40,4	31	59,6	0.303
Tinggi	15	28,8	37	71.2	

According to the table above, the percentage of efforts to prevent hypertension in patients with low hypertension is higher for informants with a low effectiveness response of 40.4% compared to a high effectiveness response of 28.8%. Meanwhile, the percentage of efforts to prevent hypertension in patients with high hypertension was higher for informants with a high effectiveness response rate of 71.2% compared to a low effectiveness response of 59.6%.

Analysis resultstatistics using the Chi square test with sig.0.05 shows the results of p value 0.303 meaning p>0.05 so ho is accepted, therefore it is concluded that there is no correlation between the effectiveness response and efforts to prevent hypertension patients from getting complications in the Tlogosari Health Center work area Wetan and Tlogosari Kulon, Semarang City.

3. Vulnerability correlation with efforts to prevent hypertensive patients from developing complications

The correlation analysis between the Vulnerability of Hypertension patient informants and prevention efforts so as not to get complications can be seen from the following table:

Table 18. Correlation of Vulnerability of Hypertensive patients with efforts to prevent complications

Vulnerability	Upaya pencegahan				*p value*
	Rendah		Tinggi		
	n	%	n	%	
Kurang	25	53,2	22	46,8	0.001
Baik	11	19,3	46	80,7	

According to the table above, the percentage of efforts to prevent hypertension in patients with low hypertension is higher for informants with less Vulnerability of 53.2% compared to good Vulnerability of 19.3%. Meanwhile, the percentage of prevention efforts for high hypertension patients was higher for informants with good prevention efforts of 80.7% compared to 46.8% less effective responses.

Analysis resultstatistics using the Chi square test with sig.0.05 shows the results of p value 0.001 meaning p <0.05 so ho is rejected, therefore it is concluded that there is a correlation between Vulnerability and efforts to prevent hypertension patients from getting complications in the work area of the Tlogosari Wetan Health Center and Tlogosari Kulon, Semarang City.

4. Fear correlation with efforts to prevent hypertensive patients from developing complications

AnalysisThe correlation between Fear of Hypertension patient informants and prevention efforts so as not to get complications can be seen from the following table:

Table 19. Correlation of Fear of Hypertensive patients with prevention of complications

Fear	Upaya pencegahan				*p value*
	Rendah		Tinggi		
	n	%	n	%	
Rendah	16	32,0	34	68.0	0.739
Tinggi	20	37,0	34	63.0	

According to the table above, the percentage of efforts to prevent hypertension in patients with low hypertension is higher for informants with a high level of fear of 37.0% compared to low fear of 32.0%. Meanwhile, the percentage of efforts to prevent high hypertension patients was higher for informants with low fear of 68.0% compared to 63.0% of high ones.

Analysis resultstatistics using the Chi square test with sig.0.05 shows a p value of 0.739 meaning p>0.05 so ho is accepted, therefore it is concluded that there is no correlation between Fear and efforts to prevent hypertension patients from getting complications in the working area of Tlogosari Wetan Health Center and Tlogosari Kulon, Semarang City.

5. Recapitulation of the results of bivariate analysis

Here is a recapitulation of test resultsbivariate, namely the chi square test on each independent variable on the dependent variable.

Table 20. Chi Square result recapitulation

No	Variabel penelitian	*p value*	Keterangan
1.	*Self-efficacy*	0,007	Berhubungan
2.	*Respon efektifitas*	0,303	Tidak berhubungan
3.	*Vulnerability*	0,001	Berhubungan
4.	*Fear*	0,739	Tidak berhubungan

According to statistical analysis with the Chi Square test, it can be seen that there are two variables that are significantly correlated with efforts to prevent hypertension patients from getting complications in the working area of Tlogosari Wetan and Tlogosari Kuton Health Centers, Semarang City. The correlated variables are self-efficacy and vulnerability. The response variables, effectiveness and fear, show no significant correlation with efforts to prevent hypertension patients from getting complications in the working area of the Tlogosari Wetan and Kulon Public Health Centers, Semarang City.

d. Multivariate Analysis Results

Analysismultivariate aims to determine the effect of independent variables simultaneously on the dependent variable. This analysis is also to determine the most dominant factor of the independent variables on the dependent variable. The multivariate analysis used logistic regression because the dependent variable in this study, namely the efforts of hypertensive patients to prevent complications from developing complications, was a categorical variable, and the candidate variables included in the analysis were independent variables.

A simple logistic regression step was carried out before the direct effect analysissimultaneously between the independent variables and the dependent variable where if the p value < 0.25, then the variable can be continued to the multivariate analysis stage and if the p value > 0.25, then the variable cannot be continued to the multivariate analysis stage.

Table 21. Test the candidate relationship with p value < 0.25

No	Variabel	p value	Keterangan
1	*Self-efficacy*	0.004	Masuk dalam model p value <0.25
2	Respon Efektivitas	0.218	Masuk dalam model p value <0.25
3	*vulnerability*	0.000	Masuk dalam model p value <0.25
4	*fear*	0.590	Tidak masuk dalam model p value >0.25

From table above, it can be concluded that the variables included in the logistic regression model are self-efficacy p value (0.004 < 0.25), effectiveness p value (0.218 < 0.25), and vulnerability p value (0.000 < 0.25). While the fear variable is not included in the model because the p value (0.590> 0.25)

Table 22. The results of the initial logistic regression test calculation

No	variabel *independent*	B	SE	Wald	Sig.	Exp (B)
1	*Self-efficacy*	1.281	0.472	7.366	0.007	3.599
2	Respon Efektiftas	0.422	0.476	0.788	0.375	1.526
3	*vulnerability*	1.462	0.471	9.623	0.002	4.316
	constant	-0.900	0.442	4.154	0.042	0.406

From table above, we can see that the self-efficacy and vulnerability variables have p values (<0.05 = 0.007, and 0.002) while the effectiveness variables have p-values >0.05, therefore it is necessary to remove them from the model with the condition that the OR change is not more than 10%.

Table 23. The results of the calculation of the final logistic regression model test

No	variabel	B	SE	Wald	Sig.	Exp (B)	CI
	independent						
1	*Self-efficacy*	1.218	0.463	6.934	0.008	3.381	1.355-8.370
2	*Vulnerability*	1.545	0.463	11.124	0.001	4.686	1.891-11.615
		-0.708	0.379	3.492	0.062	0.493	

From table above, it is known that 2 variables have a joint influence on efforts to prevent complications in hypertensive patients, namely self-efficacy and vulnerability. Self-efficacy p value = 0.008 <0.05 (1.355-8.370) meaning that there is a significant effect of self-efficacy on efforts to prevent complications in patients with hypertension, OR/EXP (B) 3.381 means that someone with a high level of self-efficacy has the possibility to make prevention efforts is 3.381 times greater than patients with low self-efficacy levels. Vulnerability states that the value of p value = 0.001 <0.05 (1.891-11.615) means that there is a statistically significant effect of the Vulnerability level on efforts to prevent complications in hypertensive patients in Semarang City. EXP(B) /OR value 4.

To determine the probability value of complications prevention efforts in patientsHypertension can be calculated using the following formula:

$$p=\frac{1}{1+e^{-(z)}}$$

Description:
p : probability of event
e : natural number =2.7
z : constant+b1x1+b2x2
a : coefficient of independent variable value
x : value of independent variable

$$p = \frac{1}{1+e^{-(a+b1x1+b2x2)}}$$

$$p = \frac{1}{1+2,7^{-(-0.708+1.218(1)+1.545(1)}}$$

$$p = \frac{1}{1+2,7^{-(3,582)}}$$

$$p = \frac{1}{1+2,7^{-(2.055)}}$$

$$p = \frac{1}{1+0,028}$$

$$p = \frac{1}{1,128}$$

= 0.77= 77%

According to the results of the calculation of the logistic regression model, the probability of self-efficacy and vulnerability for preventing complications in hypertensive patients is 0.77 or 77%. This shows that self-efficacy and vulnerability contribute 77% to the behavior of preventing complications in hypertensive patients in the city of Semarang.

3.2 Discussion

a. Characteristics of Informants

In this study, there were 104 hypertension patients with an age range of 15-64 years, which were evenly distributed in the Tlogosari Wetan and Tlogosari Kuon health centers, Semarang City. This is in line with the theory of the age factor of Triyanto and Manurung (2018). The risk of hypertension increases with age, which has a significant impact on hypertension. The incidence of hypertension has increased with age. This is often due to natural changes in the body that affect the heart, blood vessels, and hormones. The frequency of hypertension has increased with age. Hypertension usually develops in middle age and tends to increase, especially at the age of over 40 years and even over the age of 60 years. Hypertension is a multifactorial disease caused by the interaction of various factors. After the age of 45 years,

Furthermore,The highest percentage of informants' gender is female as much as 68.3% compared to male gender only 31.7% of informants. Women are more likely to have hypertension than men, according to a study by Mujiran (2018). In this study, 58.52% of women had hypertension compared to 41.8% of men. Women are at increased risk of hypertension (hypertension) after menopause, ie over the age of 45 years. Premenopausal women are protected by the hormone estrogen, which is responsible for having elevated levels of high-density lipoprotein (HDL). Low levels of HDL cholesterol and high levels of LDL cholesterol (low density lipoprotein) affect the process of atherosclerosis and therefore cause hypertension.

According to recent education,The informants with the highest education level were 55.8% secondary education level, then 28.8% higher education level, and 15.4% basic education level. The level of education affects lifestyle, especially smoking routines, drinking routines, and physical activity routines such as sports. According to the findings of Riskesdas in the Agency for Health Research and Development in 2013 (2013), hypertension (hypertension) tends to be higher with lower education and lower with higher education.

According to occupation, obtainedMost of the informants work in the informal sector, namely 58.8%, while in the formal sector as many as 41.3% of informants. This research is in line with Pickering (2008) by Arifin (2010) which states that if someone who works in a very stressful work situation can experience an increase in blood pressure not only during working hours, but also while sleeping when returning home. This states that work can affect blood pressure. Every job has its own stress level. According to Sutanto (2010), when stress cannot be overcome, stress is considered bad, and the higher the tendency for emotional stress, the greater the increase in blood pressure. In women aged 45-64 years, various psychosocial factors such as stress, marital incompatibility, financial pressure, daily stress, job mobility, symptoms of anxiety, and increased anger can cause hypertension and clinical symptoms. from cardiovascular disease.

The economic condition of the population is a condition that describes human life that has economic score (Shah et al, 2020). Furthermore by income, The percentage of informants was higher in the income group =UMR Semarang City (56.7%) than in the group with income <UMR Semarang City (43.3%). This mattershown by the fact that low economic level can be a factor other than lifestyle with a risk of hypertension. The majority of them are people with low to moderate economy, they use their income more for basic needs, for example paying for basic needs, for example paying for housing, paying rent, etc. electricity and water bills instead of prioritizing healthy eating and health checks. Sometimes, even though they know they have hypertension, they ignore the advice of medical officers regarding hypertension treatment, because of the tendency to live alone, people's memory begins to decline.

b. Self-Efficacy

The percentage of informants' self-efficacy is higher for informants who have good self-efficacy (52.9%), compared to informants with less self-efficacy (47.1%).According to the frequency distribution of the questionnaire, it can be seen if the ability to do physical activity for 30 minutes a week is worth 84.6%, then self-awareness to go to the puskesmas with the aim of health checks has a percentage of 93.3%. In the ability to refuse and withhold invitations to smoke, the results obtained are 81.7%. The ability not to drink alcohol is 96.2%. Furthermore, the ability to control diet with low salt consumption is 66.3%. The ability to change eating patterns with a diet is 90.4%. The ability to do physical activity with a percentage of 96.2%. The ability to spend more on a hypertension diet is 74%. The ability to manage stress is 89% and handling when stressed is 83.7%. The ability to take the time to participate in health knowledge activities from the puskesmas was 71.2%. The ability to move 4,000-8,000 steps per day is 76.9%.

Correlation with this, it can be seen that those with high self-efficacy tend to be more confident and have the ability to achieve what they want according to their goals. Hypertensive patients who are confident with the ability to take care of themselves will be able to carry out their duties well (Harsono, 2017).

c. Vulnerability

From the calculation results, it was found that the percentage of Vulnerability of informants was higher for informants with Good Vulnerability (54.8%), compared to informants with Less Vulnerability of (45.2).

There are only 4 points answered strongly disagree more than 10%i.e. 14.4% of the informants answered that they did not agree if the risk of complications was due to a family history of the disease, as much as 10.6% of them did not believe that changing healthy living behavior was a preventative measure, 11.5% did not believe that taking

hypertension medication was a preventative measure. so as not to be exposed to complications of other diseases, and as many as 10.6% of informants do not believe that patients with obesity are patients who are at risk for complications. This is not in line with the research resultsfrom Dr. Hospital. Sardjito who stated that lifestyle is an important factor that affects people's lives. An unhealthy lifestyle can cause hypertension for example physical activity, diet and stress. Checking your blood pressure regularly can minimize the risk of developing hypertension. Maintain your ideal weight. Minimize salt consumption. Do not smoke; exercise regularly. I live regularly. Reduce stress; Do not rush. And fatty foods. A healthy lifestyle for at least 4-6 months has been shown to reduce blood pressure and generally reduce the risk of cardiovascular problems.

d. Effective Response

Percentage of Response Effectiveness of informants who have hypertension patients is quite balanced between those who have low and high effectiveness responses, namely 50%.

The average informant has a less effective response. there are only 2 points answered agree more than 50%, namely 51.4% of the informants believe that by consuming low salt and sugar behavior, hypertension can be controlled. 54.8% of the informants also agreed that consuming alcohol every day is a cause of complications in hypertension patients.

This is in line with research conducted by Melia (2017) which states the effectiveness of using a low-salt diet on blood pressure in hypertensive patients. The process of healing hypertension can be done in the following ways: Eat low-salt foods, reduce salt intake, exercise, and don't smoke.

e. Fear

From the calculation results, it is found that the percentage of fear informants is higher in informants with low fear (58.1%), compared to high fear informants (51.9). Furthermore, the distribution results according to the question items obtained wrong answers from the informants, namely as many as 66.3 informants thought that hypertension could not cause severity/death. The rest of the answers to other questions are good enough. This is not in line with the research conducted by the Minister of Health if hypertension is a very dangerous disease because there are no typical early warning signs or symptoms. The majority of people feel healthy and energetic despite hypertension. According to the results of Riskesdas 2013, most cases of hypertension in the community are not detected. This condition is certainly very dangerous and can lead to sudden death in the community.

IV. Conclusion

The conclusions in this study are:

1. Age, gender, latest education, occupation, and income have an influence on the factors that influence hypertensive patients in making efforts to prevent complications.
2. The variables included in the logistic regression model are self-efficacy p value (0.004 < 0.25), effectiveness p value (0.218 < 0.25), and Vulnerability p value (0.000 < 0.25). While the fear variable is not included in the model because of the p value (0.590> 0.25). Furthermore, we can see that the self-efficacy and vulnerability variables have p values (<0.05 = 0.007, and 0.002) while the effectiveness variables have p-values >0.05, so it is necessary to remove them from the model with the condition that the OR changes are not more than 10%.

3. The results of statistical analysis using the Chi square test with sig.0.05 showed p value of 0.007 meaning p <0.05 so ho was rejected, therefore it was concluded that there was a correlation between self-efficacy and efforts to prevent hypertension patients from getting complications in the work area. Tlogosari Wetan and Tlogosari Kulon Health Centers, Semarang City.
4. The results of statistical analysis using the Chi square test with sig.0.05 showed p value 0.303 meaning p>0.05 so ho was accepted, therefore it was concluded that there was no correlation between the effectiveness response and efforts to prevent hypertension patients from getting complications in the work area. Tlogosari Wetan and Tlogosari Kulon Health Centers, Semarang City.

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