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### Research Article

## Compliance in taking medication for hypertension patients listed at Healthy Indonesia Program with a Family Approach

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### ABSTRACT

Compliance is the main factor in determining the success of treatment of hypertension and is needed for controlling the prevention of complications so that it is included in one of the Healthy Indonesia Program with a Family Approach (PIS-PK/*Program Indonesia Sehat dengan Pendekatan Keluarga*) indicators. This research aims to determine the relationship between education level, economic status, and knowledge level with compliance in taking medication. This research was observational analytic with a cross-sectional approach. The respondents in this study were hypertension patients listed on PIS-PK in the Mijen District for the period January-August 2020, which included the inclusion and exclusion criteria of 45 respondents. Primary data were obtained using MMAS-8, HK-LS, and a hypertension management knowledge questionnaire. Technique sampling was used consecutively. Data analysis used the Spearman rank correlation test. In this research can be concluded education level ( $p=0.025$ ) with relation coefficient ( $r=0.334$ ) and economic status ( $p=0.000$ ) with relation coefficient ( $r=0.550$ ), level of knowledge about hypertension ( $p=0.000$ ) with relation coefficient ( $r=0.545$ ) and knowledge about hypertension management ( $p=0.005$ ) with relation coefficient ( $r=0.413$ ). The higher level of education, the economic status, the level of knowledge its makes higher the compliance in taking medication for hypertension patients listed on the Healthy Indonesia Program with a Family Approach in the Mijen District.



## INTRODUCTION

Hypertension is an increase in systolic blood pressure 140 mmHg and diastolic blood pressure 90 mmHg in two measurements with an interval of five minutes in a state of sufficient rest/quiet (Unger T, Borghi C, Charchar F, 2020). Data and Information Center of the Indonesian Ministry of Health in 2019 presented data on Basic Health Research (Riskesdas) in 2018. The prevalence of hypertension in the population >18 years based on national measurements was 34.11%. According to these data in terms of medication adherence, as many as 54% of hypertension patients regularly take medication, 32.27% of hypertensive patients do not routinely take medication, and 13.33% of hypertensive patients do not take medication at all (Kementrian Kesehatan RI., 2018).

Compliance in taking medication for hypertension patients is included in one of the indicators in the Healthy Indonesia Program with a Family Approach (PIS-PIK/ *Program Indonesia Sehat dengan Pendekatan Keluarga*). Healthy Family Index Data in 2019 nationally hypertension is 24.36% (Kementrian Kesehatan RI., 2020). In comparison, the Healthy Family Index data for hypertension in Central Java province is 21.04%. In the city of Semarang, hypertension patients who take medication regularly are only 30.17%. The lowest is in the Mijen sub-district of 15.01% with a healthy family index of only 0.35, meaning that the family is not healthy (Permenkes No 39 Tahun 2016 Tentang Pedoman Penyelenggaraan Program Indonesia Sehat Dengan Pendekatan Keluarga., 2016). There are two health centers in Mijen District, namely Karangmalang Health Center and Mijen Health Center. The lowest Healthy Family Index Karangmalang health center is Wonoplumbon village 9.68%. Meanwhile, the lowest Healthy Family Index

Mijen Public Health Center was Bubakan sub-district 13.39% (Kementrian Kesehatan RI., 2019).

Behavior can affect compliance. In Lawrence Green's Theory, behavior is influenced by predisposing factors, supporting factors, and reinforcing elements (Notoatmodjo, 2014). Knowledge is a predisposing factor that facilitates the occurrence of a behavior. If a person's knowledge is good, they will obey in taking treatment because that person desires to recover so that it encourages the formation of compliance behavior (Darker CD, 2011).

Knowledge in particular about hypertension and its management will significantly affect compliance in taking medication. Reinforced by previous research, there is a significant relationship between patients' knowledge of hypertension and adherence to taking medication (Aldano A. Limbong, Adisti Rumayar, 2018). Based on this concept, knowledge may be related to compliance in taking medication in patients with hypertension (Budi et al., 2016).

Compliance in taking medication in patients with hypertension is also influenced by several other factors such as the level of knowledge, motivation, support from health workers, family support, the influence of the number of drugs consumed, access to health services, employment status, education level, length of suffering, participation in health insurance, and economy (Puspita, 2016) (Pujiyanto, 2018).

In several previous studies, it was found that education was related to compliance in taking medication for hypertension patients. Still, some studies stated that education was not associated with compliance in taking medication for hypertension patients. The minimum number of studies that discuss the factors that influence adherence to taking hypertension medication makes researchers interested in conducting this study.



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### METHODS

This study was approved by the Medical Faculty University Muhammadiyah Semarang ethical commission with the number 028/EC/FK/2021. This study used an observational analytic method with a cross-sectional approach. The study was conducted in the Mijen Public Health Center and Karangmalang Health Center in Mijen District from January to February 2021. 45 respondents met the inclusion and exclusion criteria using a consecutive sampling technique.

Inclusion criteria were all hypertensive patients that were listed at PIS-PK and treated for at least 1 month in the Mijen Health Center and Karangmalang Health Center, more than 18 years old, willing to become research respondents. Meanwhile, the exclusion criteria were hypertensive patients with mental, cognitive, and psychiatric disorders, hypertension patients with complications such as coronary heart disease, stroke, heart failure, and kidney disease.

The study used primary data from MMAS-8 (Modified Morisky Adherence Scale) questionnaire (Morisky DE, Ang A, Krousel WM, 2018) (Harijanto W, Rudijanto A, 2015), Hypertension Knowledge Level Scale (HK-LS), hypertension management knowledge questionnaire that had passed the validity and reliability tests and direct interviews as well as secondary data obtained from the annual report of the *puskesmas* containing PIS-PK data for hypertension patients and medical record. The Spearman Rank correlation test analyzed data;  $p\text{-value} \leq 0.05$  means a relationship between the independent and dependent variables. (Dahlan, 2014) Interpretation of relationship level using correlation interpretation guidelines as follows:

- 1) 0.00 – 0.199 : very low relationship
- 2) 0.20 – 0.399 : low relationship
- 3) 0.40 – 0.599 : moderate relationship
- 4) 0.60 – 0.799 : strong relationship
- 5) 0.80 – 1,000 : very strong relationship

### RESULTS

Based on the table 1 above shows that the majority of the respondents are in the 46-55 year old group (31.1%), female respondents (77.8%), respondents with basic education level as many (80.0%), respondents with low economic (77.8%), respondents who know about low hypertension (75%), respondents who know good hypertension management (65.9%), and majority respondents have low compliance in taking medication levels (75%).

Based on table 2 above shows low compliance to the question “*Have you ever stopped taking medication or reduced the dose without telling your doctor because of the unpleasant effects of taking high blood pressure medication?*” by 22.2%. And high adherence to the question “*Take medicine every day is really uncomfortable for some people, have you ever felt disturbed while taking your high blood pressure medication?*” by 75.6%.

Based on table 3, the results of the analysis of the correlation between education level and compliance in taking medication obtained a correlation coefficient of +0.334 which means that there is a low relationship with a positive distribution direction, namely increasing the level of education, the level of compliance in taking medication will also increase. The Spearman rank correlation test results in a  $p\text{-value}$  of 0.025 which means that there is a significant relationship between education level and compliance in taking medication. The analysis of the relationship between economic status and compliance in taking medication obtained a correlation coefficient of +0.550 which means that there is a moderate relationship with a positive distribution direction, namely increasing economic status, increasing the level of compliance taking medication. The Spearman rank correlation test results in the value of  $p = 0.000$ , which means a significant relationship between education level and compliance in taking medication.



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**Table 1.** Univariate analysis based on age, gender, education level, level of knowledge about hypertension and hypertension management, economic status, and compliance in taking medication.

Variable	f (n=45)	%
Age		
17-25	3	6.7
26-35	3	6.7
36-45	4	8.9
46-55	14	31.1
56-65	14	31.1
>65	7	15.6
Gender		
Male	10	22.2
Female	35	77.8
Education Level		
Basic	36	80.0
Middle	7	15
High	2	80,0
Level of knowledge about hypertension		
High	5	11.1
Middle	7	15.6
Low	33	73.3
Level of knowledge about hypertension management		
High	29	64.5
Low	16	35.5
Economic Status		
High	35	77.8
Low	10	22.2
Compliance in taking medication		
Low	36	80.0
Middle	7	15.6
High	2	4.4



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**Table 2.** Compliance Assessment Based on MMAS-8

Description	Yes (%)	No (%)	Total (%)
Do you sometimes forget to take medication?	64.4	35.6	100.0
Within 2 weeks. are there days that you dont take medication not because you forgot?	53.3	46.7	100.0
Have you ever stopped taking medication or reduced the dose without telling the doctor because you felt bad effects when taking medication?	77.8	22.2	100.0
When you travel or leave the house. do you sometimes forget to bring your medication?	28.9	71.1	100.0
Did you not take medication yesterday?	55.6	44.4	100.0
When you feel your blood pressure is under control. do you sometimes stop taking medication?	66.7	33.3	100.0
Taking medicine every day is really uncomfortable for some people. have you ever felt disturbed when taking your medication?	24.4	75.6	100.0
How often do you have trouble remembering to take medication?	51.1	48.9	100.0

**Table 3.** Analysis Result Rank Spearman Test

Variable	p	r
Economis status	0.000	0.550
Education Level	0.025	0.334
Level of knowledge about hypertension	0.000	0.545
Level of knowledge about hypertension management	0.005	0.413



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The results of the analysis of the correlation between the level of knowledge about hypertension and compliance in taking medication obtained a correlation coefficient of +0.545 which means that there is a low relationship with a positive distribution direction, namely increasing the level of knowledge about hypertension, the level of compliance in taking medication will also increase. The Spearman rank correlation test results in the value of  $p = 0.000$ , which means that there is a significant relationship between the level of knowledge about hypertension and compliance in taking medication. The results of the analysis of the correlation between the level of knowledge about the management of hypertension and compliance to taking medication obtained a correlation coefficient of +0.413 which means that there is a moderate relationship with a positive distribution direction, namely increasing economic status, increasing the level of compliance in taking medication. The Spearman rank correlation test results in a  $p$ -value of 0.005 which mean that there is a significant relationship between the level of knowledge about hypertension management and compliance in taking medication.

## DISCUSSION

Based on result, respondents who have compliance in taking medication.get a low score due to several points, namely, firstly, intentionally stopping taking medication without the doctor's knowledge, secondly stopping taking medication because they feel that their blood pressure is under control, thirdly the frequency of forgetting to take medicine, fourthly schedule. The previous day, the fifth within 2 weeks did not take medicine, the six patients had difficulty remembering to take the medication, the seventh was the availability of treatment while traveling, and the last one was due to the inconvenience of taking medicine every day.

Educational level was significantly related to compliance in taking medication in hypertension patients in Mijen District. According to the interview, respondents with a basic education tend to have low compliance scores because they think they take medication only when complaints of hypertension arise and when complaints subside, they tend to stop taking medication. Respondents with basic education levels also tend to often forget to take their medicine. Respondents with a middle education level tend to have moderate compliance scores because they feel disturbed by taking medication every day and think that taking medication every day will negatively impact the kidneys. Respondents with high education tend to have high compliance scores because they think that hypertension requires regularity in taking medication so that blood pressure is controlled to avoid complications. The results of this study are in sync with previous research; there is a significant relationship between the level of education and compliance in taking medication in patients with hypertension at the Kajen Regional General Hospital, Pekalongan Regency (Ahda, 2016). Education can influence health behavior because education makes a person more able to absorb and get news from health workers. The mindset is more developed, logical and considers various considerations to maintain or overcome health problems (Notoatmodjo, 2011). The increase in education history will increase compliance to taking medication (Notoatmodjo, 2010).

According to this study, it was found that the economic status of the respondents was significantly affiliated with compliance in taking medication in hypertension patients in Mijen District. Based on the interviews, respondents with low economic status have low compliance scores because they are less able to meet their daily needs, so they choose not to visit the *puskesmas* to take medicine regularly. Hypertension patients get free medicine



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through programs at the Puskesmas, but they have difficulty taking medication because of the high transportation costs to reach the *puskesmas*. Respondents with high economic status have moderate to high compliance scores because they can meet their daily needs. So respondents with the high financial situation do not take medication at the health center. They will check with private practice doctors or buy drugs at pharmacies independently. The results of this study are in sync with previous research, namely, the level of income is one of the socioeconomic factors affecting hypertension patients in compliance to taking medication (Pujiyanto, 2018) (Rasajati QP, Raharjo BR, 2015).

Economic status can affect health behavior because income affects health consumers and health services to control problems related to health (Notoatmodjo, 2011). As financial status increases, compliance to medication also increases (Notoatmodjo, 2010).

This study found that knowledge about hypertension and its management had a significant relationship with compliance in taking medication. Based on the results of the answers to the questionnaire, most respondents did not know about medical treatment and complications related to hypertension. The majority of respondents do not take medicine every day but only take medicine when they feel sick. The majority do not know that hypertension will cause advanced diseases such as visual disturbances and kidney and heart disease if not treated immediately.

Based on the results of this study, the majority of respondents did not routinely check their blood pressure at the *puskesmas*; respondents usually visit the *puskesmas* when they feel unbearable symptoms. If the patient does not feel the symptoms of hypertension such as dizziness and the neck feels heavy, they think their blood pressure has returned to normal, and

then they do not take medication. So that the lack of knowledge about hypertension and its management causes respondents not to have the self-awareness to change lifestyle behavior towards a healthier direction and do not understand the importance of taking medication every day. The theory states that a fundamental domain in shaping one's actions is knowledge. If it is based on the understanding of the behavior, it will be lasting (Notoatmodjo, 2014). In line with previous research, knowledge in patients with high blood pressure can affect regularity in taking medication (Ikhwan M, Livana PH, 2017) (Haldi T, Pristianty L, 2021).

The benefit of this research is that it can add reference material for improving service policies in Healthy Indonesia Program with a Family Approach. The limitation of this research is that it used a cross-sectional method, so that it is difficult to assess cause and effect because data collection is carried out at the same time.

## CONCLUSION

According to the analysis and discussion results, it can be concluded that the increase in education level, level of knowledge about hypertension and its management, and economic status will increase the level of compliance to taking medication.

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