Family, Social, and Health Worker Support of Complience Behaviour to Patients with Hypertension In Bogor, Indonesia

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ABSTRACT

***Background**: Abnormalities of the heart and blood vessels were marked by an increase in blood pressure are known as hypertension. Worldwide, high blood pressure is estimated to affect more than one in three adults aged 25 years and over, or about one billion people. Overall, high-income countries have a lower prevalence of hypertension (35% of adults) than low and middle-income groups (40% of adults). The prevalence of hypertension in Indonesia based on the Basic Health Research (Riskesdas) data in 2018 was 34.1%. **Objective**: This study determines the relationship of family support, social support, and health worker support with compliance of patients with hypertension. **Methods**: This research was conducted at the Tegal Gundil Community Health Center, North Bogor District, Bogor City, Indonesia, which was conducted from May to December 2017. The design of this study was cross-sectional. Sampling was carried out with a purposive sampling method with inclusion and exclusion criteria. The former consisted of all patients with hypertension aged 25-65 years who routinely control during the last six months who are present and willing to be interviewed during the study. The later includes patients with hypertension who have memory disorders with the number of samples of 110 respondents. **Results**: The results showed the respondents were dominated by the age of under 59 (75.5%), female (86.4%), junior high school as the highest education (68.2%), have no job (81.8%), and the prevalence of their sufferers' compliance was 47.3%. The results of the Chi-square test showed that family support, social environment, and health workers were associated with compliance in patients with hypertension (OR = 2.461; CI 95% 1.140 to 5.310; P Value = 0.034). **Conclusion**: In order to improve compliance of patients with hypertension, it is necessary to pursue a program of activities focused on health promotion activities not only for patients but also involving family and social members.*

***Keywords**: Family, Health Workers, Hypertension, Social, Support.*

INTRODUCTION

Hypertension is abnormalities of the heart and blood vessels that are marked by an increase in blood pressure (WHO, 2013). If the measurement results are twice with a distance of 5 minutes and inadequate rest conditions, the results of blood pressure of more than 140/90 mmHg are declared hypertension (Kementerian Kesehatan Republik Indonesia, 2014). In 2017, the American Heart Association (AHA) and the American College of Cardiology (ACC) issued the latest hypertension guidelines. This guideline contains many significant changes in the management of hypertension. One of the biggest jumps in this guideline is a change in classification or even the definition of hypertension. In the hypertension guidelines, hypertension is determined when systolic blood pressure ≥ 130 mmHg or diastolic blood pressure ≥ 80 mmHg (Whelton *et al.*, 2018).

Every year, hypertension is the number one cause of death in the world because hypertension is one of the entry points or risk factors for diseases such as stroke, heart disease, diabetes, kidney failure (Kemenkes RI, 2019). According to the WHO data showed one in three adults aged 25 years and over experience high blood pressure worldwide, or around

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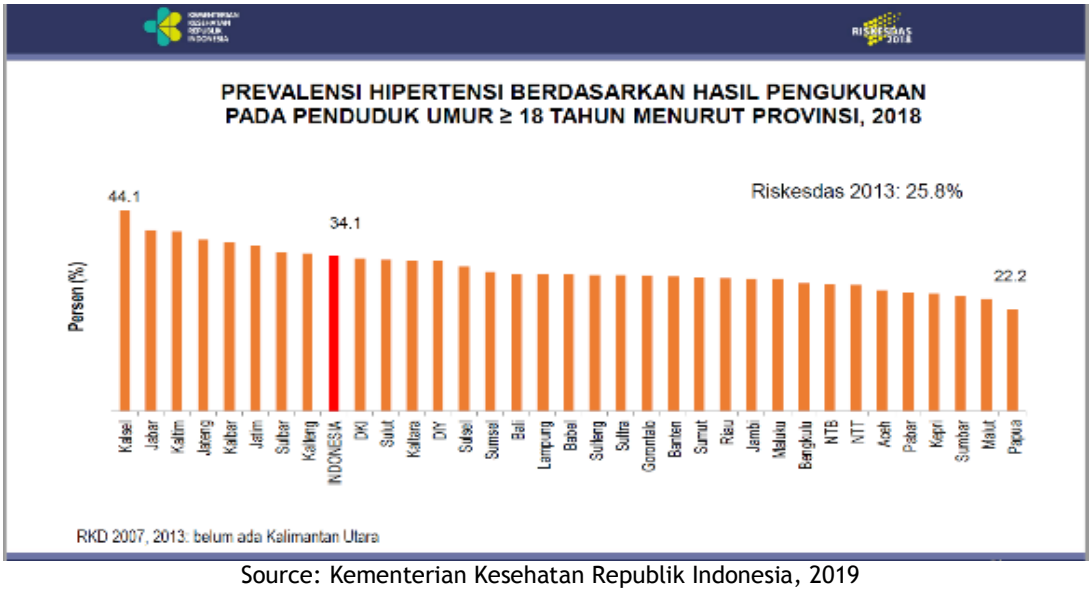
1.13 billion people who suffer from hypertension. Low and middle-income countries have a higher prevalence (40% of adults) compared to high-income countries (35% of adults) (WHO, 2013), and 80% of adults with diabetes mellitus have hypertension (CDC, 2013). The main modifiable risk factor for cardiovascular disease (CVD) and premature death in the United States and around the world is hypertension (Forouzanfar *et al.*, 2016; Mills *et al.*, 2016). A positive and robust relationship between blood pressure (BP) and CVD risk and mortality has been proven in observational studies (Wei *et al.*, 2017).

According to the 2017 International Health Metrics Monitoring and Evaluation (IHME) data in Indonesia, the first cause of death is caused by stroke, followed by ischemic heart disease, diabetes, tuberculosis, cirrhosis, diarrhea, Alzheimer, lower respiratory tract infections, and disorders neonatal and traffic accidents. Data from the Health Insurance Administering Agency (BPJS) states that the cost of hypertension services has increased every year, namely in 2016 amounting to 2.8 trillion rupiahs, in 2017 and 2018, amounted to 3 trillion rupiahs. The prevalence of hypertension in Indonesia based on the results of blood pressure measurement in population ≥ 18 years by province based on Basic Health Research (Riskesdas) data in 2018 is 34.1%, the highest in South Kalimantan (44.1%), while the lowest in Papua is (22.2%).



Source: Kementerian Kesehatan Republik Indonesia, 2019

Figure 1. Prevalence of Hypertension in the Population Aged ≥18 Years Based on Province

From the prevalence of hypertension of 34.1%, it is known that as much as 8.8% were diagnosed with hypertension and 13.3% of people diagnosed with hypertension did not take medication, and 32.3% did not take medication regularly. It shows that the majority of hypertension sufferers do not know that they are hypertension and, therefore, do not get treatment. The reasons for hypertension sufferers that did not take medication are because hypertension sufferers feel healthy (59.8%), irregular visits to health facilities (31.3%), taking traditional medicine (14.5%), using other therapies (12.5%), forgot to take medicine (11.5%), unable to buy medicine (8.1%), there were side effects of the drug (4.5%), and hypertension medication was not available in health care facilities (2%) (Kementerian Kesehatan Republik Indonesia, 2019a).

The prevalence of hypertension in Bogor City in 2017 is 22.07%, and it is number two in the top ten diseases in public health centers. The main contributors to poor hypertension control and the main obstacles to reducing CVD deaths are that patients do not follow recommended medical or health advice, including failure to survive with drugs and make lifestyle modifications that are suggested. Only about 20% of patients with hypertension followed their treatment plan well enough to improve, and Up to 25% of patients do not fulfill their initial prescription for

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antihypertensive therapy. During the first year of treatment, the average patient had antihypertensive drugs, only 50% of the time, and only 1 in 5 patients had adherence high enough to achieve the benefits observed in clinical trials. Many factors contribute to poor compliance. So as a solution, there need to be efforts to improve compliance at the patient, provider, and health care system level (Whelton *et al.*, 2018). The objectives of this study were to determine the relationship between family support, social support, and health workers' support with compliance of patients with hypertension.

METHOD

The study was hospitality based and conducted at the Tegal Gundil Community Health Center, North Bogor District, Bogor City, Indonesia, which was conducted from May to December 2017. The design of this study was cross-sectional. The target population is all adult hypertension sufferers, male and female in physical and mental health, aged 25-65 years in the community health-center work area. The population of this study was patients diagnosed with hypertension and routine treatment and control for the last 6 (six) months at the Tegal Gundil community health center. It was done to get a sample of people who suffered from hypertension, based on the population which was the study sample, sampling was carried out with purposive sampling method, with Inclusion criteria namely all patients with hypertension aged 25-65 years who routinely control during the last six months who are present and willing to be interviewed during the study, exclusion criteria namely patients with hypertension who have memory disorders. Subjects for this study were selected from a list of a known hypertensive subject; the number of samples in this study was 110 respondents.

After obtaining informed consent, the respondent was administered a semi-structured questionnaire that had several issues, including collected blood pressure data (in this study, hypertension was defined as a systolic BP of 140 mmHg or higher or a diastolic BP of 90 mmHg or higher), food intake, physical activity, knowledge, attitude, Perception of perceived benefits, Perception of the perceived barrier, Perception about self-efficacy, family support, social support and health workers, medication adherence, dietary compliance, stress levels, cigarette consumption, compliance with routine blood pressure checks, and routine weight weighing compliance and Semi-Quantitative Food Frequency Questionnaire (SFFQ).

The research instrument used in data collection was a questionnaire. Family support, Social support, and health workers support were assessed in the questionnaire using the question (1) As long as you suffer from hypertension, which gives the motivation and motivation to live a healthy lifestyle in applying diet and taking medicine (2) Be reminded to take medicine (3) Warn to avoid prohibited foods/drinks (4) Invited to exercise regularly (5) Participate in a hypertensive diet (participate in consuming low-salt foods) (6) Remind to check blood pressure and consult a diet regularly (7) Helps manage stress (8) Always remind to stop smoking (9) Remind to weigh regularly. Compliance was defined using the 13 questions on the questionnaire patient compliance consisting of medication, dietary compliance, non-smoking adherence, compliance with physical activity, compliance with routine blood pressure checks, and routine weight checks. The use of compliance as a variable was defined as compliant (where the respondent answers ≥ seven questions). Researchers used secondary data. Data were analyzed by univariate analysis and bivariate analysis using the chi-square test.

RESULTS AND DISCUSSION

Based on Table 1, it is described that the largest percentage of each variable is as follows: 75.5% age of respondents is <59 years, 86.4% of respondents' gender is female, 68.2% of respondents with the latest education ≤ Junior High School, 81.8% of respondents did not work, 52.7% of respondents had low knowledge and 60% had negative attitudes. 84.5% felt perceived benefits were good, 51.8% felt perceived obstacles perceived good, 83.6% felt good perception of self-efficacy, 52% felt

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family support, social environment, and health workers support were good enough, and 52.7% of respondents were not compliant.

Table1. Demographic characteristics, knowledge, attitude, Perception, support, and compliance of respondents

Variables	n	%
Age		
< 44 year	22	20
≥ 45 year	88	80
Sex		
Male	15	13.6
Female	95	86.4
Level of education		
≤ Junior high school	75	68.2
> Junior high school	35	31.8
Job		
Unemployed	90	81.8
Employed	20	18.2
Knowledge		
Not Sufficient	58	52.7
Sufficient	52	47.3
Attitude		
Negative	66	60
Positive	44	40
Perception of perceived benefits		
Not good	17	15.5
Good	93	84.5
Perception of a perceived barrier		
Not good	53	48.2
Good	57	51.8
Perception of self-efficacy		
Not good	18	16.4
Good	92	83.6
Family, social, and health workers support		
Not sufficient	53	48
Sufficient	57	52
Patient compliance		
Not compliant	58	52.7
Compliant	52	47.3

Hypertension is a disease that can prevent and be prevented. Recently hypertension shows a high prevalence in the adult population (CDC, 2013). One of the most critical factors that play a role in blood pressure control is the patient's approval of care and diet. Patients who show low coverage for treatments that have uncontrolled high blood pressure and cause negativity arising from these complications are death (Wei *et al.*, 2017). Therefore, it is essential to determine and consider the factors that affect patient compliance.

Under the statement of the Black and Hawks in Temang that age is one of the factors that influence blood pressure, the older a person is, the greater the risk of developing hypertension due to old age. The large arteries lose flexibility and become stiff because of that when the blood throbs forcefully to pass through blood vessels that are narrower than usual and cause an increase in blood pressure (Temang, 2013). It is consistent with the 2018 Riskesdas data, and hypertension occurs in the age group 31-44 years (31.6%), ages 45-54 years (45.3%), ages 55-64 years (55.2%) (Kementerian Kesehatan Republik Indonesia, 2019a), it appears that the prevalence hypertension increases with age.

In this study, the results showed that hypertension sufferers with the highest sex are women (86.4%). It is in line with Tarigan's results that women with hypertension are more numerous than men (53.7%) (Tarigan, Lubis and Syarifah, 2018) and in line with Arnoldus, namely patients hypertension in women is higher at 60.5% compared to patients with hypertension in men (Arnoldus, 2019).

Based on the results of the chi-square test showed in Table 2, there is no relationship between age, sex, level of education, occupation, knowledge, attitudes, perceptions of perceived benefits, perceptions of perceived barriers, perceptions of self-efficacy (P Value>0.05). There is a relationship between factors of family support, social environment, and health workers with compliance of patients with hypertension (OR = 2.461; CI 95% 1.140 TO 5.310; P Value = 0.034).

Sociodemographic factors and individual characteristics that have been shown to influence adherence even though the mechanism is unclear is age, although the effect of age is not always the same in research. Several studies have shown a positive relationship between age levels and patient compliance. Younger patients tend to be more disobedient compared to older patients (Temang, 2013). The social demographic factors of age in Olowookere's research results show a significant relationship with adherence; the study showed that nonadherence was higher in young respondent and those with lower education (Olowookere *et al.*, 2015).

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Table 2. The Correlation of Individual Perceptions, Modifying Factors, and the Likelihood of Action with Patient with Hypertension's Compliance

Variable	Patient compliance				P Value
	Not compliant		Compliant		
	n	%	n	%	
Age					
≥ 45 year	43	49	45	51	0.166
< 44 year	15	68	7	32	
Sex					
Male	8	53	7	47	1
Female	50	53	45	47	
Level of education					
≤ Junior high school	41	55	34	45	0.696
> Junior high school	17	49	18	51	
Job					
Employed	14	70	6	30	0.143
Unemployed	44	49	46	51	
Knowledge					
Not sufficient	34	59	24	41	0.264
Sufficient	24	46	28	54	
Attitude					
Negative	34	52	32	49	0.907
Positive	24	55	20	46	
Perception of Perceived Benefits					
Not good	12	71	5	29	0.180
Good	46	50	47	51	
Perception of Perceived Barrier					
Not good	32	60	21	40	0.174
Good	26	46	31	54	
Perception of Self Efficacy					
Not good	13	72	5	28	0.120
Good	45	49	47	51	
Family Support, Social Support, and Health Workers					
Not sufficient	34	64	19	36	0.034
Sufficient	24	42	33	58	

In contrast to the results of this study, there is no relationship between age and adherence, which is in line with the results of a study which shows no the relationship between age and adherence (Mathew *et al.*, 2016), as well as the results of the study in 2013 there was no relationship between age and patient compliance with hypertension management (Temang, 2013).

Gender has no direct effect on adherence. It is interesting because research conducted in different places and with different populations can give different results. In this study, the results showed there was no relationship between sex with compliance; this is in line with the results of research by Mathew in Kerala, which showed no relationship between sex with adherence (Mathew *et al.*, 2016), as well as the results of Temang's research In 2013 there was no relationship between sex and patient compliance with hypertension management, although there was no significant correlation in the value of the Odds Ratio (OR) of 0.65, which means that men had a 0.65 chance to be more obedient than women (Temang, 2013).

The level of education indirectly affects blood pressure. The level of education influences lifestyles such as smoking habits, alcohol drinking habits, and physical activity habits such as sports. The high risk of developing hypertension in low education may be caused by a lack of knowledge about health and the difficulty of receiving information provided by health workers so that it impacts on healthy behavior. Patients with a higher level of formal education tend to have better knowledge about hypertension and its management (Temang, 2013).

In this study, there was no significant relationship between education and hypertension patient compliance. The results of this study are

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consistent with the previous research, which states about education; there is no clear trend with compliance (Osamor, 2015). In contrast to the results of research conducted in 2015 stated, education shows a significant relationship with compliance (Olowookere *et al.*, 2015). It is supported by the Temang research results, which show that there is a significant relationship between education and patient compliance with hypertension management, with an OR score of 7.1, which means that respondents with junior and senior high school education have a 7.1 chance to be more obedient compared to respondents with low education (Temang, 2013).

The results of the analysis of the relationship between the level of knowledge with adherence in this study found that there was no significant relationship between the level of knowledge with patient compliance; this is in line with the results of research by Temang; namely, there is no significant relationship between knowledge with patient compliance with hypertension management with OR 2, 52 then respondents with a high level of knowledge have a 2.52 times chance to be more obedient compared to respondents who have insufficient knowledge (Temang, 2013).

Patients' perceptions determine the response to their disease. Patients who get adequate information from health workers and believe in beneficial treatment, illness can have a severe impact, they are susceptible to disease, they can carry out prescribed treatments, and have a positive attitude towards treatment, showing better adherence against hypertension (Temang, 2013).

The results of the analysis of the relationship between perception of disease and treatment with adherence in this study found that there was no significant relationship between perception of disease and treatment of patient compliance. It is different from the results of research in 2013; namely, there was a significant relationship between perception of disease and treatment with patient compliance with hypertension management with OR 3.15, respondents who have an excellent perception have a 3.15 times chance to be more obedient compared to respondents who have a poor perception (Temang, 2013).

The results of this study indicate that there is a significant relationship (P Value = 0.034) between family support, social support, and health workers with the compliance of patients with hypertension. This study is line with the result of other research that also proves that family support and social support are strongly associated with adherence to treatment of hypertension (Li, G., Hu, H.H., & Aroo, 2015). Patients with good family support had better adherence compare to those with low-income family support (Olowookere *et al.*, 2015). In southwest Nigeria, social support is strongly associated with hypertension treatment compliance in the community (Osamor, 2015). These findings emphasize the need to ensure family and social support at the start and continuation of antihypertensive therapy (Padhy *et al.*, 2016).

In Indonesia, the results of research in 2016 showed that there was a supportive and healthy relationship between family support and patients with hypertension, which showed that family support contributed 61.8% to support patients with hypertension. Previous researches stated that there was a relationship between families related to diet in patients with hypertension (Yeni, Husna and Dachriyanus, 2016; Prihartono, Andarmoyo and Isroin, 2019). Other research stated there was a relationship between family support and taking medication in patients with hypertension (Arnoldus T, 2019). Good family support has a six times chance of implementing a good hypertension diet compared to low-income family support (Tarigan, Lubis and Syarifah, 2018). Likewise, another study stated that there was a positive and significant relationship between family support and hypertension diet (Kusumawati, 2014). It is in line with the results of research by Temang; namely, there is a significant relationship between social support and patient compliance with hypertension management with OR 6.7 then respondents who have good social support have a 6.7 times chance to be more obedient compared to respondents who have poor social support (Temang, 2013). From the various research results above, it can be seen that one of the factors affecting

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hypertension patients is family and social support. It is because patients with relatively high elderly use large medicinal substances, parents who help others, namely family members, to remind them to take medicine and diet.

Family and social support are essential in supporting adherence to people with hypertension. Family attention can foster motivation for patients to be obedient. Health workers change the pattern of relationships to be equal to the patient, show empathy, want to listen, and explain correctly will affect compliance (Temang, 2013).

Chronic diseases, such as hypertension, require a lifetime of care. It is a challenge for patients and families to be able to maintain the budget for years of care. One way to increase motivation is through family support. Social support will increase awareness to use health services, which is one of the critical components that meet the requirements (Osamor, 2015).

Various studies have shown that antihypertension is a global problem that requires many solutions (Si, 2012; Desai and Choudhry, 2013). The study reported a decline rate of 52.7% among respondents. While in 2012, 32%, and in 2015 it was approved that 39% of patients were not approved for therapy (Si, 2012; Olowookere *et al.*, 2015). Furthermore, the results of research in the Kingdom of Saudi Arabia, the meeting was 35.1% (Mahmoud, 2012). The difference in judgment is mainly by the various measurement methods agreed upon by these authors. But these varied results imply that what cannot be solved remains a problem that requires a solution

CONCLUSION

Based on the results of data analysis and research results, the conclusion obtained in this study is that there is a relationship between family support, social support, and support from health workers on hypertension patient compliance. Community health centers, as primary health care facilities, need to make efforts to improve hypertension patient compliance so that risk factors and hypertension complications can be reduced or prevented.

In order to improve compliance of patients with hypertension, it is necessary (Kementerian Kesehatan Republik Indonesia, 2019b)to pursue a program of activities focused on health promotion activities not only for patients but also involving family and social members. Activities can include routine health checks, emphasizing healthy living behavior, carried out education or dissemination of information in the form of the development of information media both to patients and families related to hypertension.

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