Factors Associated with Hypertension Patient Compliance in Implementing the COVID-19 Health Protocol

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Abstract

COVID-19 is a disease that infects the respiratory tract to the deepest tip of the lungs. Most of the COVID-19 patients have comorbidities with hypertension, especially in the elderly. Increasing age coupled with pre-existing diseases make the elderly more susceptible to more severe COVID-19 infections. This study aims to determine what factors are related to the compliance of hypertension patients in implementing the COVID-19 health protocol. This study uses a descriptive correlation design and uses cross sectional approach. The research sample was 70 respondents who were taken based on the inclusion criteria using purposive sampling technique. The measuring instrument used is a questionnaire sheet for the variables of knowledge, attitudes, family support, and COVID-19 health protocol compliance. The analysis used is univariate analysis and bivariate analysis using chi-square test. After collecting data on 70 respondents with hypertension at one of the public health center in Pekanbaru, the results of the chi-square test on the attitude variable with compliance showed p value $0.036 < (0.05)$, the family support variable with compliance obtained p value $0.005 < (0.05)$, and the knowledge variable obtained p value $0.212 > (0.05)$. Based on the results of statistical tests, it can be concluded that there is a correlation between attitude factors and family support factors with hypertension patient compliance in implementing health protocols, while there is no correlation between knowledge factors and hypertension patient compliance in implementing health protocols.

Keywords: Compliance; Elderly; Health Protocol; Hypertension

INTRODUCTION

World Health Organization (WHO) has officially decided that the COVID-19 outbreak is a health problem that threatens the world in the pandemic category. The disease COVID-19 spread rapidly to affect every continent except Antarctica (Chakraborty & Prasenjit, 2020). One of the regions with the highest cumulative cases in the world is Southeast Asia with three countries with the highest increase in cases, including Indonesia (World Health Organization, 2020). The spike in cases occurred in Indonesia from early June to mid-July 2021 with the highest new cases reaching 56,767 cases per day. The COVID-19 Task Force found that the most comorbid in COVID-19 patients was hypertension with a record of 50 percent of the total cases. In Riau Province, the highest number of cases in Riau Province occurred in Pekanbaru City reaching 40,440 cases at the end of July 2021 (Satuan Tugas Penanganan Covid-19, 2021).

This disease can cause a person to experience fever, fatigue, dry cough, myalgia, to dyspnea. These symptoms cause more severe disease in the elderly and patients with comorbidities such as hypertension (Ministry of Health, 2020). Based on the research results of Wu *et al.,* (2020) as many as

282 people out of 1000 COVID-19 patients have comorbid hypertension with the age group below 60 years as many as 62 people and the rest are over 60 years old.

Elderly is someone who is classified as aged 60 and over and begins to experience many physical changes, one of which is cardiovascular problems. Changes in heart valves and blood vessels that are no longer elastic can increase the resistance in blood vessels so that blood pressure increases (Priyoto, 2018). Based on research by Lippi *et al.,* (2020) hypertension can increase the risk of severity 2.5 times in patients with COVID-19 or cause a poor prognosis due to SARS-CoV-2 infection. Significant severity of COVID-19 was seen in patients aged over 60 years, where the prevalence of hypertension increased with age (Lippi *et al.*, 2020). Increasing age leads to the emergence of additional pre-existing conditions, making elderly people more susceptible to the development of more severe infections (Nanda, Vura, & Gravenstein, 2020).

Vulnerability to COVID-19 will cause a person with hypertension to require special precautions, such as increasing efforts to avoid transmission, wearing personal protective equipment in the form of masks and constant monitoring of blood pressure (Lippi *et al.*, 2020). Based on the Decree of the Minister of Health of the Republic of Indonesia (2020) preventive measures can also be carried out by implementing health protocols. The health protocol is intended to protect individual health, including avoiding physical contact and maintaining a minimum distance of 1 meter from other people, using PPE in the form of masks when going out or meeting other people, washing hands with soap regularly, and increasing immunity by adopting a healthy lifestyle. RI Ministry of Health, 2020)

The implementation of health protocols will be maximally implemented if followed by the participation and compliance of hypertensive patients. Based on Afrianti's research (2021), there are factors that can affect compliance in implementing health protocols such as knowledge, attitudes, and motivation factors. Knowledge plays an important role as the basis for the formation of individual actions (Notoatmodjo, 2012). According to Saputra and Simbolon's research (2020) the knowledge gained about COVID-19 can prepare a student to have high compliance, this is shown by their seriousness to participate in minimizing the spread of COVID-19.

Yanti *et al.*, (2020) explains that if a person has good knowledge, attitude, and behavior towards *social distancing* , the prevention of COVID-19 transmission is very influential in controlling the COVID-19 pandemic. In addition, research by Mushidah and Muliawati (2021) shows that people who do not comply with wearing masks tend to have negative attitudes towards the presence of COVID-19. Based on the results of research by Nuratiqa *et al.*, (2020) one of the factors related to the compliance of hypertensive patients in taking antihypertensive drugs is family support. Providing social support is one of the important functions in correlations. Correlations are characterized as having reciprocity and emotional closeness (Glanz, Rimer, & Viswanath, 2008). Research by Afro, Isfiya, and Rochmah (2020) also shows that someone who gets support from their closest people tends to participate in implementing health protocols.

It is known that a person with hypertension is susceptible to COVID-19 infection which can worsen his illness. This requires people with comorbidities such as hypertension to be able to apply health protocols during a pandemic to prevent contracting the SARS-CoV-2 virus. Therefore, it is necessary to comply with health protocols during the COVID-19 pandemic so as to reduce the risk of complications. Based on the problems above, the researchers felt the need to know the factors related to the compliance of hypertensive patients in implementing the Covid-19 health protocol.

METHODS

This research is a quantitative research with correlation method using cross sectional approach. The sample was taken based on purposive sampling technique. This study has a sample of 70 hypertension patients who are housed in of the area of health centers in Pekanbaru City. The inclusion criteria of this study were patients diagnosed with hypertension based on medical records at the Rejosari Health Center, patients aged 45 years and over, patients who were willing to be respondents, and patients who lived with their families. The exclusion criteria of this study were hypertensive patients who cannot communicate. The study was conducted from June to July 2021. Questionnaires were modified from several studies, used as a data collection tool which were distributed directly to prospective respondents who met the inclusion criteria. Statistical test used Chi-Square test with a degree of significance (α) = 0.05. This research has received approval from the Ethics Commission of the Faculty of Nursing, University of Riau.

RESULTS

Based on age, many of the respondents were in the pre-elderly category (45-59 years) as many as 37 respondents (52.9%), many of the respondents were female, namely 41 respondents (58.6%), most of the respondents have the last education level of high school, namely 25 respondents (35.7%), some respondents do not work/IRT as many as 40 respondents (57.1%), many of the respondents live with husband/wife and children as many as 39 respondents (55.7%).

Table 1. Frequency distribution of respondent characteristics.

Characteristics of Respondents	Frequency	Percentage
	n	%
Age		
a. Pre-Elderly (45-59) years	37	52.9
b. Elderly (60-69) years	24	34.3
c. Older Risti (>70) years	9	12.9
Gender		
a. Male	29	41 ,4
b. Female	41	58.6
Last Education		
a. Elementary	16	22.9
b. Junior	16	22.9
c. High School	25	35.7
d. College	13	18.6

Employment		
a. Not Working	40	57.1
b. Retired	11	15, 7
c. Self Employed	7	10.0
d. Civil	3	4.3
e. Private Employees	5	7.1
f. Other	4	5.7
Lives with		
a. Husband/Wife and Children	39	55.7
b. Wife/Husband	7	10.0
c. Children of	19	27.1
d. Siblings	3	4.3
e. Other	2	2.9
Total	70	100

Tables 2. The correlation between knowledge and compliance in implementing health protocols

Knowledge	Compliance				Total		P value	OR
	Not Adhering		Compliance					
	N	%	N	%	N	%		
Less	12	54.5	10	45.5	22	100	0.212	2,188
Good	17	35.4	31	64.6	48	100		
Total	29	41.4	41	58.6	70	100		

Based on the table 2, it was found that the correlation between knowledge and compliance in implementing health protocols was obtained from 31 respondents (64 ,6%) with a high level of knowledge of health protocols and adherence. The results of the *chi-square* obtained *p value* 0.212 which means *p value* > (0.05) it can be concluded that there is no correlation between knowledge and compliance in implementing health protocols. The results of *Odd Ratio* (OR) were 2.188, which means that hypertensive patients who have less knowledge are 2.2 times at risk for not complying with health protocols.

Table 3. Correlation between attitude and compliance in implementing health protocols

Attitude	Compliance				Total		P value	OR
	Disobedient		Compliance					
	N	%	N	%	N	%		
Negative	15	60.0	10	40.0	25	100	0.036	3,321
Positive	14	31.1	31	68.9	45	100		
Total	29	41.4	41	58.6	70	100		

Based on the table 3, the correlation between attitudes towards compliance in implementing health protocols shows that respondents have a positive attitude and high compliance, namely 31 respondents (68.9%). The results of the *chi-square* obtained *p value* 0.036 which means *p value* < (0.05) it can be concluded that there is a correlation between attitudes towards compliance in implementing

health protocols. The results of *Odd Ratio* (OR) were 3.321, which means that hypertensive patients who have a negative attitude have a 3.3 times risk of not complying with health protocols.

Table 4. Correlation of family support with compliance in implementing health protocols

Attitude	Compliance				Total		P value	OR
	Disobedient		Compliance					
	%	N	%	N	%	0.005		
Not Supporting	20	60.6	13	39.4	33	100	0,005	4,786
Supporting	9	24.3	28	75.7	37	100		
Total	29	41.4	41	58.6	70	100		

Based on the table 4, it was found that the correlation between family support and compliance in implementing health protocols was obtained by respondents with supportive families and high adherence as many as 28 respondents (75.7%). The results of the *chi-square* obtained *p value* 0.005 which means *p value* < (0.05) it can be concluded that there is a correlation between family support and compliance in implementing health protocols. The results of *Odd Ratio* (OR) were 4.786, which means that hypertensive patients who have unsupportive families have a 4.8 times risk of not complying with health protocols.

DISCUSSION

The correlation between knowledge and compliance in implementing health protocols.

Based on the results of research conducted on 70 respondents with hypertension patients, it was found that the level of knowledge of health protocols and adherence was high as many as 31 respondents (64.6%). The results of the *chi-square* obtained *p value* 0.212 which means *p value* > (0.05) it can be concluded that there is no correlation between knowledge and compliance in implementing health protocols. This study is not in line with research (Rejeki & Rahman, 2021) based on the results of the analysis obtained a *p* value of 0.004 (p < 0.05) it can be concluded that the good knowledge possessed by PROLANIS type 2 DM participants affects respondents' compliance in carrying out health protocols. According to the research results of Afrianti and Rahmiati (2021) many factors can influence the implementation of health protocols including age, education, attitude, and motivation. The respondents who have good knowledge but do not comply in implementing health protocols are as many as 17 respondents.

Respondents who have good knowledge regarding COVID-19 and its prevention but do not comply, this can occur due to many things, one of which is the lack of adaptation of respondents to the application of health protocols during the COVID-19 pandemic. The habit of respondents who are still not used to using masks when interacting or leaving the house, always keeping their distance from other people, and washing their hands regularly so that it affects compliance. This is in line with the research of Angkawijaya, Pangemanan, and Siagian (2016) hypertensive patients know the dangers of

hypertension but they do not understand how to prevent hypertension. The patient knows the risks of eating fatty foods but the habit of consuming these foods is still being applied.

The results of this study were obtained in hypertensive patients who had less knowledge and did not comply with health protocols as many as 12 respondents. According to the results of research by Rahmatulloh (2021) where many elderly people still experience limited information. Due to the condition of the elderly who find it difficult to understand several appeals from the government regarding the prevention of COVID-19, for that there are still many elderly who still do a lot of activities outside the home and do not know the function of using masks. Understanding and related to COVID-19 prevention is also influenced by harmony in the family which can cause the elderly to lack care and understanding of the 7 health protocols.

The correlation between attitude and compliance in implementing health protocols.

The respondents had a positive attitude and high compliance, namely 31 respondents (68.9%). The results of the *chi-square* obtained *p value* 0.036 which means *p value* < (0.05) it can be concluded that there is a correlation between attitudes towards compliance in implementing health protocols. This study is in line with the research of Fajriyah, Kartikasari, and Faradisi (2021) that many of the respondents have a good attitude towards health protocols (41.9%). A good attitude is obtained through good knowledge, where the knowledge obtained is able to determine and make decisions in dealing with something (Suprayitno *et al. al.,* 2020). A positive attitude is in line with the level of higher education and good knowledge of respondents regarding health protocols. Respondents' confidence in the seriousness of the COVID-19 disease, implementing health protocols is an important thing besides taking care of yourself, family and others. This research is in line with the research of Suprayitno *et al.,* (2020) on higher education to respondents when a stimulus about health education is given, the stimulus will be responded to with an attitude which is in line with knowledge about health.

In the results of research by Afro *et al.,* (2020) the high motivation of respondents in implementing health protocols is in line with knowledge, and attitudes. The formation of a good attitude is formed by respondents' trust in government policies so that they are obedient in implementing the COVID-19 health protocol. The results of research by Wiranti, Sriatmi, and Kusumastuti (2020) that the government needs to pay attention to appropriate communication techniques in providing education to the public, especially the use of language that is easy to understand, this can affect the reception of information so that people easily understand the information provided

The correlation between family support and compliance in implementing health protocols.

Respondents with supportive families and high compliance were 28 respondents (75.7%). The results of the *chi-square* obtained *p value* 0.005 which means *p value* < (0.05) it can be concluded that there is a correlation between family support and compliance in implementing health protocols. Karo's

research (2020) also confirms that the support provided by health workers in the form of knowledge about preventing COVID-19 disease and support from families has a good impact on COVID-19 prevention measures. The family is the main source of the concept and behavior of health and illness. The family has a major influence in maintaining the physical health of family members and conversely the ineffective functioning of the family causes treatment, therapy and eating patterns for family members to be disrupted (Bisnu, Kepel, & Mulyadi, 2017).

Respondents with less knowledge are not necessarily disobedient to the implementation of health protocols. Of the several factors that influence one of them is support from the family, including in providing information, the availability of personal protective equipment and encouragement in implementing health protocols. In line with the results of the research by Satria *et al.*, (2021), it was found that there was a significant correlation between family support and adherence to the COVID-19 prevention health protocol. The results of a study by Satria, Kasim, Perinduri, *et al.*, (2021) that the family plays an important role in maintaining a healthy lifestyle, especially in adherence to treatment programs. Maintaining a healthy lifestyle requires family members who have the effort, time, knowledge, and skills related to improving health in the family.

CONCLUSION

The results of this study found that knowledge was not related to the compliance of hypertensive patients in implementing the COVID-19 health protocol, this was because most hypertensive patients were in the elderly category. Most of the elderly are starting to experience limitations in receiving information, making it difficult to understand some of the appeals from the government regarding the prevention of COVID-19. Meanwhile, family attitudes and support are related to the compliance of hypertensive patients in implementing the COVID-19 health protocol. A positive attitude is in line with the level of higher education and good knowledge. In this case, health workers can improve compliance with hypertension patients by providing information about the implementation of good and correct health protocols so as to make hypertensive patients aware that health protocols are important things to do during the COVID-19 pandemic. Health workers can work together with families in increasing the motivation of hypertension patients in implementing the COVID-19 health protocol. Families play an important role in maintaining a healthy lifestyle, especially in compliance with health protocols so that family members with hypertension can avoid COVID-19.

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