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THE RELATIONSHIP BETWEEN THE LEVEL OF KNOWLEDGE AND ADHERENCE TO TAKING MEDICATION FOR THE PREVENTION OF HYPERTENSION IN THE ELDERLY

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ABSTRACT
High blood pressure or hypertension is a condition where blood pressure always exceeds normal limits, with systolic blood pressure exceeding 140 mmHg and diastolic blood pressure exceeding 90 mmHg. The aim of this research is to identify whether there is a relationship between the level of knowledge and compliance in taking medication in elderly people who suffer from hypertension. This research applies a quantitative approach with a sample of 96 respondents, selected using a random sampling technique (random sampling). The data in this study were analyzed univariately and bivariately, by applying the Spearman test to assess the relationship between all the variables studied. Data collection was carried out using a questionnaire that measured the level of knowledge, namely, with the validity and reliability of Cronbach alpha values of 0.856 for 21 valid questions, and compliance with taking medication, namely, with the validity and reliability of Cronbach alpha values of 0.728 for 8 valid questions. Two questionnaires were used in this study: Compliance Level and MMAS 8. The results of the analysis of respondents' level of knowledge revealed that the majority of respondents had good knowledge, namely 66.7%, followed by sufficient knowledge at 30.2%, and insufficient knowledge at 3.1%. Meanwhile, for the level of compliance with taking medication, the majority of respondents were compliant (71.9%), followed by moderate (25.3%) and low (3.1%) levels of compliance.Reviewing the results of the Spearman Rank (Rho) statistical test, we obtained a value of 0.075 with a p-value = 0.05, which indicates that there is no significant relationship between the level of knowledge and compliance in taking medication.

Keywords: compliance rate; hypertension; medication adherence

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INTRODUCTION

Hypertension, commonly referred to as high blood pressure, is a medical condition characterized by persistently elevated blood pressure levels that exceed the normal range. This condition is typically defined by a systolic reading of 140 mmHg or higher and a diastolic reading of 90 mmHg or higher. Blood pressure affects the circulatory system and blood-supplying organs, such as the brain and heart, putting additional strain on these organs. Various factors can affect high blood pressure, including gender, stress, obesity, diet, smoking, and alcohol consumption (Nurbaya, 2023). Based on studies conducted by the World Health Organization (WHO), high blood pressure, also known as hypertension, has been identified as a leading cause of premature mortality across multiple regions globally. It is estimated that approximately 1.28 billion people aged between 30 and 79 years are currently affected by hypertension on a worldwide scale (Sombili et al., 2023)). In Indonesia, the prevalence of hypertension continues to increase due to an increase in life expectancy (UHH) both globally and at the national level. This can be seen from the increase in the number of elderly population in Indonesia. Based on statistics provided by the Bureau of Statistics, around 9.6% of the elderly population, equating to an estimated 25.64 million individuals, are reported to be affected by hypertension (F. N. Sari et al., 2023).

Knowledge is a basic need that can improve a person's behavior to prevent complications from hypertension. Knowledge can help manage aspects of the lives of people with hypertension to prevent complications from fatty foods, smoking, unhealthy lifestyles, and stress. Meanwhile, the knowledge that must be possessed by people with high blood pressure is the importance of implementing compliance with taking antihypertensive drugs, and must know the dangers and impacts caused by non – compliance with taking hypertension medication (Kamelia citra et al., 2023). Limited understanding significantly affects the capacity of individuals suffering from hypertension to effectively manage relapses and take preventive measures against potential complications. This is especially true for many elderly hypertensive patients who live in rural areas and have low levels of education (Mardiana et al., 2021).

Compliance in taking medication is crucial for people with hypertension because blood pressure can be controlled through taking antihypertensive drugs regularly. By implementing this measure, the likelihood of long-term damage to crucial organs, including the kidneys, heart, and brain, can be significantly minimized (Depkes, 2018). Adherence to taking antihypertensive medication in the elderly is a major factor in controlling blood pressure. Therefore, following the routine rules for the use of hypertension drugs is very helpful in controlling blood pressure, so discipline in taking medication is needed. The cause of elderly non – compliance in taking hypertension medication is due to busy work, and side effects of treatment such as memory loss, dizziness, drowsiness, and nausea when taking high blood pressure medication (Massa & Manafe, 2022). Hypertension is now recognized as the primary cause of mortality in Indonesia, largely attributable to the lack of adherence among patients to the treatment protocols advised by healthcare professionals (Wulansari et al., 2024). This study holds the potential to benefit the broader community by exploring the connection between individuals' knowledge levels about medication compliance and their understanding of adherence to prescribed treatments. The primary aim of this research is to examine how knowledge levels influence medication adherence among elderly patients with hypertension who are receiving care at the Kartasura Health Center.

METHOD

This study employs a quantitative approach, gathering numerical data derived from reliable and valid measurement tools, such as questionnaires, to analyze and draw conclusions about the phenomena or relationships under observation (Adiputra et al., 2021). This research took place in September 2024 at the Kartasura Health Center, Sukoharjo Regency. This study involved 96 elderly people with hypertension from the Kartasura Health Center. Sampling was carried out through the probability sampling method. Initial data collection includes demographic information of respondents, such as name or initials, gender, occupation, education level, age, and religion.

The research instrument used was a knowledge level measurement, which contained 21 question items with 3 categories, where the correct score for the good category was 14 to 21 items, the moderate knowledge level had a correct score of 7 - 14 items, and the poor knowledge level had a correct score of less than 7 items. The second questionnaire utilized the MMAS-8, a tool consisting of eight questions, which categorizes adherence into three distinct levels: high adherence, indicated by a score above 8; moderate adherence, represented by scores ranging from 6 to 8; and low adherence, identified by a score below 6. The data collection process involved the use of questionnaires designed to evaluate knowledge levels and medication adherence. For the knowledge assessment, the questionnaire demonstrated validity and reliability with a Cronbach's alpha value of 0.856 across 21 valid items. Similarly, the adherence assessment showed a Cronbach's alpha value of 0.728, affirming the

reliability and validity of eight valid items. Statistical analysis was conducted using the Spearman's rho test to explore potential correlations between knowledge levels and adherence to medication among elderly individuals diagnosed with hypertension. The analysis yielded results where p-values exceeded 0.05, indicating no statistically significant relationship between knowledge levels and medication adherence in this population.

RESULT

The findings from the bivariate analysis were derived from data collected through research questionnaires completed by the respondents. The demographic breakdown of the respondents is as follows: 47.9% fall within a specific age range, 69.8% identify as female, 86.5% follow the Muslim faith, 42.7% have attained an upper secondary level of education, and the largest proportion, 37.5%, are employed as housewives. These details are comprehensively summarized in Table 1 below:

Table 1.
Respondent characteristics (n= 96)

Respondent characteristics	f	%
Age		
45 – 56 years	46	47,9
57 – 68 years	34	35,4
69 – 78 years	16	16,7
Gender		
Male	29	30,2
Female	67	69,8
Religion		
Islam	83	86,5
Christian	12	12,4
Catholic	1	1,0
Education		
Elementary school	32	33,3
Junior High School	25	15,6
Senior High School	41	42,7
Vocational High School	1	1,0
3rd diploma	3	3,1
Undergraduate	2	2,1
Not in school	2	2,1
Job		
Housewife	36	37,5
Labor	31	32,3
Self-employed	3	3,1
Entrepreneur	19	19,8
Retired	5	5,2
Teacher	1	1,0
Puppeteer	1	1,0

The results of bivariate analysis on the variables of knowledge level and compliance with taking medication are listed in Table 2 below:

Table 2.
Relationship between Knowledge Level and Medication Adherence

Knowledge Level	Medication Adherence Level						Totally	P value
	Low		Medium		High			
	n	%	N	%	n	%		
Less	0	0,0	1	33,3	2	66,7	100,0 %	0,075
Enough	0	0,0	5	17,2	24	82,8	100,0 %	
Good	3	4,7	18	28,1	43	67,2	100,0 %	
Totally	3	3,1	24	25,0	69	71,9	100,0 %	

A medication adherence level categorized as low, paired with insufficient knowledge, was observed in 0 respondents (0.0%). Similarly, a low adherence level combined with adequate knowledge was also recorded in 0 respondents (0.0%). In contrast, a moderate adherence level with a high level of knowledge was documented in 3 respondents (3.1%), while the same adherence level with a low knowledge level was noted in 1 respondent (33.1%). A moderate adherence level alongside a moderate knowledge level was observed in 5 respondents (17.2%), and the same level of adherence with a high level of knowledge was noted in 3 respondents (3.1%). Regarding a high adherence level, 2 respondents (66.7%) had insufficient knowledge, 24 respondents (82.8%) had adequate knowledge, and 43 respondents (67.2%) demonstrated high adherence with a good knowledge level.

DISCUSSION

According to (Firsia Sastra Putri, 2020), People who possess a strong understanding of hypertension can better understand the disease and tend to encourage positive changes, such as increased adherence to treatment and the adoption of a healthy lifestyle to manage the condition, especially to reduce the factors that cause this disease. Good knowledge can improve a person's adherence to their treatment because a deeper understanding of the disease and the benefits of treatment will encourage individuals to follow medical instructions with more discipline. The average age of respondents is around 50 years and age is one of the factors that influence knowledge. This age factor can affect the extent to which a person acquires information and understanding about a topic, including health. Knowledge is an important internal factor in adherence to hypertension treatment, and this greatly supports patients' understanding of the hypertension disease they suffer (Juniarti et al., 2023). Some of the things that patients need to know include understanding the meaning of hypertension, its symptoms, risk factors, and the importance of undergoing routine treatment for a long duration of time. Patients should also be aware of the potential risks of harm if they do not take their medication as recommended (Depkes, 2018).

From the results of the research conducted, the level of knowledge obtained in the good category amounted to 64 people (66.7%). This finding is in line with research (Irianti et al., 2021) which shows that a good level of knowledge was recorded in 27 respondents (61.4%). This is because the elderly at the Kartasura Health Center have received education carried out by health workers. Research in line with (Muryani et al., 2020) states that respondents who have good knowledge are 32 people or (82.1%). This study is also consistent with the research carried out by (Novianti & Laily Hilmi, 2022) The data reveals that 66 respondents (64.7%) demonstrated a high level of knowledge, while 36 respondents (35.3%) had a lower level of knowledge. This was also found in research (Guntoro & Purwati, 2020) Among the 64 respondents who demonstrated a good understanding of hypertension diet, 41 individuals (64.1%) were included, whereas 23 respondents (35.1%) had a poor level of knowledge regarding the hypertension diet. This is also in line with research (Arrang et al., 2023) This illustrates the findings from the analysis, revealing that 92% of the respondents have a high level of knowledge.

Hypertensive patients' knowledge of drugs requires higher compliance. Hypertensive patients' knowledge goes straight if they have a high desire for compliance in taking medication. People who have in-depth knowledge will encourage themselves to support hypertension control so that patients are more encouraged to find treatment and seek regular treatment as directed by the doctor (Fernandes et al., 2023). The findings from the research indicate obtained high medication compliance with as many as 69 respondents (71.9%). This research aligns with the findings of a study previously carried out by (Yacob et al., 2023) which shows the results of drug compliance found hypertensive patients with the proteins program with

adherence to taking medication in the obedient category as many as 22 respondents (36.67%). Hypertensive patients in the proteins program with adherence to taking medication in the moderately obedient category were 20 respondents (33.33%). While hypertensive patients in the proteins program with adherence to taking medication in the non-compliant category were 18 respondents (30.00%). This study is also in line with research (Alifiah et al., 2024) which shows the results of most hypertension patients (63%) are compliant in undergoing hypertension treatment. This was also found in research (Nuratiqa et al., 2020) showing that low compliance with taking respondent medication was 30 (41.7%) respondents, while high compliance with taking medication was 42 (58.3%) respondents. This was also found in research (Fadhilah et al., 2020) showing adherence to taking medication for hypertension patients in the Pamarican Health Center Working Area, Ciamis Regency in 2020, most respondents were obedient in taking medication as many as 63 people (69.2%), and almost some respondents were not obedient in taking medication as many as 28 people (30.8%). This research is also in line with (D. P. Sari & Helmi, 2023) showing the results of the study involving 93 respondents revealed that the participants demonstrated a high level of adherence to their medication regimen, namely 66 respondents (71%), while respondents who had a low level of compliance as many as 27 respondents (29%).

Maintaining consistent medication use is a crucial factor in managing blood pressure for individuals with hypertension. If patients do not comply with the rules of taking medication, this can hurt their clinical condition, such as the development of unwanted chronic diseases (Juniarti et al., 2023). Although some patients may not fully comprehend the nature of their illness, the consistent adherence to daily medication regimens suggests that many still place their trust in healthcare professionals and remain committed to their treatment. On the other hand, patients who are not compliant in taking drugs are caused by several factors, such as busy working, feeling cured, or not having time to take drugs and make routine controls to the Puskesmas (Nurhanani et al., 2020). The findings from this research indicate that contradict the findings of the research (Anwar & Masnina, 2019), which explained that adherence to taking medication in hypertensive patients with moderate levels of compliance was found in 17 respondents. This condition is caused by various triggering factors, including the increase and decrease in blood pressure which is not only influenced by compliance with taking medication, but also by a healthy lifestyle, diet, and stress levels experienced by each respondent. Research (Permata et al., 2018) explains that the better an individual's knowledge about hypertension, the higher their compliance in taking medication. This shows the importance of health education to improve patient understanding and support treatment adherence. Conversely, the lower an individual's knowledge of hypertension, the lower their level of compliance in taking medication. Lack of understanding about the disease may cause patients to not realize the importance of regular medication, which risks worsening their health condition.

CONCLUSION

Reviewing the existing findings, the respondents in this study totaled 96 elderly people, with the majority aged 45-56 years. The majority of respondents were female and worked as housewives. This demographic can provide an overview of the characteristics of the groups involved in the study related to knowledge and adherence to hypertension treatment in the elderly. The results of the analysis showed p value = 0.075, which indicates p> 0.05. Thus, it can be seen that there is no significant relationship between the level of knowledge and compliance in taking drugs for hypertension in the elderly at the Kartasura Health Center. For further research can examine further about hypertension factors.

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