THE RELATIONSHIP BETWEEN EDUCATION LEVELS WITH KNOWLEDGE, ATTITUDES, AND PRACTICE IN HYPERTENSION PATIENTS

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ABSTRACT
Hypertension is called a "silent killer", many hypertension sufferers do not realize that they have hypertension because hypertension is often asymptomatic so, hypertension sufferers only realize that they have hypertension after they experience complications. This study focuses on examining the relationship between education level with the knowledge, attitudes, and practices of hypertension patients. This study uses quantitative research, with the research design using a cross-sectional study. The sampling technique used is a purposive sampling technique. The samples taken were 100 samples of hypertension patients at dr. Soeratno Sragen Regional Hospital. The research instrument used the knowledge, attitude, practice (KAP) questionnaire. The results of the study showed that there was a relationship between the level of education with the knowledge and attitudes of hypertensive patients, each of which produced a p-value = 0.029 <0.05 and p-value = 0.002 <0.05. The results of the next study, namely the level of education with the behavior of hypertensive patients, showed no significant relationship with p-value = 0.459> 0.05. The higher the level of education affects a person's knowledge and attitude, the better the level of education, the better the level of knowledge and attitude. While from the statistical test between the level of education and practice, there is no relationship between the two, this shows that someone with a high level of education does not necessarily have a good practice. Practice can be formed from many factors, not only from the level of education.

Keywords: attitudes; education levels; hypertension; knowledge; practice

INTRODUCTION
Hypertension or high blood pressure is still one of the significant global health problems in almost all countries, both developing and developed countries. Various factors can cause hypertension, including a diet high in sodium and fat, stress, and uncontrollable factors such as age and gender. One of the causes of increased mortality and morbidity with age is long-term high blood pressure. Uncontrolled blood pressure can lead to complications such as stroke and kidney failure (Nugraha et al., 2022). Globally, the prevalence of hypertension in adult age groups has doubled in the last 30 years from 650 million in 1990 to 1.3 billion in 2019 and around 78% of adults with hypertension live in low- and middle-income countries (WHO, 2021). According to the Kemenkes RI (2021), the prevalence of hypertension in Indonesia increased from 25.8% in 2013 to 34.1%. The prevalence of hypertension in the population of Central Java according to the results of the 2018 Riskesdas showed that the prevalence with the highest hypertension was 37.57%. The prevalence of hypertension in women is higher (40.17%) compared to men (34.83%). The prevalence in rural areas (37.01%) is lower than in urban areas (38.11%). As age increases, the prevalence of hypertension also increases.

Hypertension is called a "silent killer", many hypertension sufferers do not realize that they have hypertension because hypertension is often asymptomatic, so hypertension sufferers only realize that they have hypertension after they experience complications, because if not controlled hypertension will develop and cause complications such as heart attacks, strokes, heart failure, and other health problems. Prevention of hypertension complications is very important, and the level of knowledge, attitudes, and practices of hypertension sufferers play a key role in this effort. The level of education of an individual can affect the level of knowledge of the individual himself regarding hypertension, including the causes, symptoms, and preventive measures, and can affect the way they manage the condition of hypertension. A person with a high level of education is expected to have positive knowledge, attitudes, and practice in the treatment of hypertension.

Good knowledge of the causes, symptoms, and management of hypertension can provide a basis for individuals to take appropriate steps in the prevention and management of hypertension. The attitude of hypertensive patients also plays an important role in the course of this disease. A positive attitude towards treatment, healthy lifestyle changes, and management of the condition can help reduce the risk of complications of hypertension. In addition, a person's behavior towards hypertension care is certainly an important point in this case. Practice is a person's actions or actions in dealing with hypertension. However, it is important to understand whether a high level of education is in line with the knowledge, attitudes, and behaviors supporting hypertension management.

The results of previous studies conducted by Fahriah, Rizal, and Irianty (2021) showed that there was a significant relationship between education level and knowledge, attitudes, and practice of hypertension, with each value (p.value = 0.000 $<\alpha$ = 0.05). Sulastri, et al. (2021) showed that hypertensive patients with high knowledge of hypertension mostly implemented good practice in preventing complications of hypertension. The results of Taukhit's study (2021) showed that respondents with good knowledge gave a balanced attitude. The higher the knowledge of hypertensive patients, the better their attitude toward preventing complications of hypertension. Likewise, low knowledge also results in poor attitudes and practices in preventing complications of hypertension. The level of education concerning knowledge about hypertension, attitudes, and practice of patients in managing hypertension is influenced by many factors, someone who has a high level of education will not necessarily have good knowledge, attitudes, and behavior in controlling hypertension. Therefore, researchers are interested in researching the relationship between education level and the knowledge, attitudes, and behavior of hypertension patients. This study aimed to determine whether the knowledge, attitudes, and practices of patients with hypertension were related to their level of education.

METHOD
The method used in this study is quantitative research, with the research design being a cross-sectional study. The population in this study were hypertension patients at RSUD dr. Soeratno Gemolong totaling 639 patients. The data source used medical records in 2023 at RSUD Gemolong. The sampling technique used is purposive sampling, with the number of samples determined using the Slovin formula. The calculation result sample size is 86 respondents, and it was extended to 100 respondents. The sample in this study will be selected according to the inclusion criteria and exclusion criteria that have been determined. The location of the study was carried out at the internal medicine polyclinic of RSUD dr. Soeratno Gemolong, Sragen, the research instrument using a tensiometer, then to measure the level of knowledge, attitudes, and behavior using a demographic questionnaire and knowledge, attitude, practice

(KAP) questionnaire, which were adapted from Aghoja, et. al (2017), and in the Indonesian version translated by Kusumamardhika, Utami, and Darmawan (2023) this questionnaire was used to measure knowledge, attitudes, and practice about hypertension. The questionnaire consists of 8 questions about knowledge, 3 about attitudes, and 4 about practice. A score of the questionnaire is 1 and 0 were assigned for correct and incorrect responses respectively. The Knowledge, Attitude, and Practice (KAP) questionnaire has been tested for validity and reliability with 40 respondents, and all questions from the questionnaire are valid with a value of $r = > 0.5$ and reliable with a value of Cronbach's alpha $= > 0.7$. Ethical clearance was obtained from RSUD Dr. Moewardi Surakarta with ethical number: 1.384/V/HREC/2024.

RESULT
Based on the results of the research that was conducted, 100 participants met the criteria and were willing to become respondents.

Table 1.
Demographic characteristics of participants

Characteristic	f	%
Age		
17-35 years	26	26
36-55 years	57	57
56-75 years	17	17
Gender		
Male	27	27
Female	73	73
Educational History		
Elementary school	22	22
Junior high school	20	20
Senior high school	30	30
College	28	28
Status		
Single	9	9
Married	82	82
Divorce	2	2
Widower	2	2
Widow	5	5
Smoking history		
Never	80	80
Still	10	10
Ever	10	10
Family history of hypertension		
Yes	39	39
No	61	61

Based on table 1, the majority of participants were aged 36-55 years, as many as 57 people (57%), and most of the participants were women, as many as 73 people (73%). The last education of the participants was elementary school, as many as 22 people (22%), junior high school, as many as 20 people (20%), senior high school, as many as 30 people (30%), and college, as many as 28 people (28%). Most of the participants' status was married, as many as 82 participants (82%), and regarding smoking history, most participants had never smoked, and as many as 80 participants (80%). Most participants did not have a history of hypertension in the family, as many as 61 participants (61%)

Table 2.
Cross-tabulation of correlation between education level with knowledge

Education level	Knowledge			Total	Pearson Chi-Square
	Low	Medium	High		
Elementary School	6	5	11	22	0.029
Junior/Senior High School	4	25	21	50	
College	1	11	16	28	

Table 2 shows that participants who have a low level of education with a low level of knowledge are 6 people (6%), participants who have a low level of education with a moderate level of knowledge are 5 people (5%), and participants who have a low level of education with a high level of knowledge are 11 people (11%). Furthermore, participants at the middle level of education with a low level of knowledge are 4 people (4%), participants at the middle level of education with a moderate level of knowledge are 25 people (25%), and participants at the middle level of education with a high level of knowledge are 21 people (21%). Meanwhile, participants with a high level of education with a low level of knowledge are only 1 person (1%), participants with a high level of education with moderate knowledge are 41 people (41%), and participants with a high level of education with high knowledge are 48 people (48%).

The results of statistical tests using Chi-Square, showing p-value = 0.029, obtained from the predetermined significance value of 0.05, p-value = 0.029 <0.05, which means there is a significant relationship between the level of education and knowledge of hypertension patients at Dr. Soeratno Sragen Hospital, with a contingency coefficient = 0.459.

Table 3.
Cross-tabulation of correlation between education level with attitude

Education level	Attitude		Total	Pearson Chi-Square
	Negative	Positive		
Low	6	16	22	0.002
Medium	3	47	50	
High	0	28	28	

Table 3 shows that participants who have a low level of education with a negative attitude are 6 people (6%), low level of education with a positive attitude is 16 people (16%). Furthermore, participants with a secondary education level who have a negative attitude are 3 people (3%), and participants with a secondary education level who have a positive attitude are 47 people (47%). Meanwhile, participants with a high level of education have no negative attitudes (0%), and those with positive attitudes are 28 people (28%). The results of statistical tests using Chi-Square, the number of p-values = 0.002 was obtained, which shows that the value is <0.05, which means that there is a significant relationship between the level of education and the attitudes of hypertension patients at RSUD dr. Soeratno Sragen.

Table 4.
Cross-tabulation of correlation between education level with attitude

Education level	Practice		Total	Pearson Chi-Square
	Negative	Positive		
Low	4	18	22	0.459
Medium	16	34	50	
High	7	21	28	

Table 4 shows that participants with low education who have negative practices are 4 people (4%) and participants with low education who have positive practices are 18 people (18%). Furthermore, participants with secondary education who have negative practices are 16 people (16%), and participants with secondary education who have positive practices are 34 people (34%). While participants with high education who have negative practices are 7

people (7%), and participants with high education who have positive practices are 21 people (21%). Based on the results of the statistical test using Chi-Square, it shows p-value = 0.459, obtained from the predetermined significance value of 0.05, p-value = 0.459> 0.05, which means there is no significant relationship between education level and the practice of hypertension patients at RSUD dr. Soeratno Sragen.

DISCUSSION
Hypertension is a chronic disease that is one of the most common causes of cardiovascular disease which is a serious problem, especially in developing countries (Rahayu et al., 2024). Hypertension is a non-communicable disease that if not controlled can cause complications such as stroke, kidney failure, and heart disease. Hypertensive patients need to know about their disease. The level of education of hypertensive patients can affect the knowledge of hypertensive patients about hypertension, attitudes, and behavior of hypertensive patients in managing hypertension. High or low levels of education affect the level of knowledge of hypertension sufferers regarding compliance with taking medication, carrying out health checks, and maintaining a good diet (Kristinawati et al., 2020). Based on this study, the relationship between education level and the knowledge level of hypertension patients shows that p-value = 0.029, it can be concluded the level of education affects the level of knowledge of patients with hypertension, the higher the level of education, the better the level of knowledge in managing hypertension.

A person's level of education greatly influences the occurrence of hypertension, because someone with a low level of education can have a lack of knowledge in obtaining information about health and low awareness of living a healthy lifestyle (Baringbing, 2023). Someone who undergoes formal education usually will be accustomed to thinking logically in dealing with a problem (Darsini, 2019). This study is also in line with research conducted by Fahriah, Rizal, and Irianty (2021) which shows that participants with high education have sufficient knowledge about managing hypertension, the results of the Chi-Square test show a p.value = $0.000 < \alpha = 0.05$, so that in practice, hypertensive patients can also prevent complications of hypertension. Another study that is relevant to this study is a study by Hastuti & Habibah (2022) which shows the relationship between education level and respondents' level of knowledge about hypertension treatment. There is a significant relationship between education level and level of knowledge about hypertension with the results of the Kruskal-walls Asmp. sig test of 0.000 is less than 0.05.

Attitude is generally defined as a tendency to respond (positively and negatively) to certain people, objects, and situations (Hutagalung, 2021). The results of this study, the relationship between education level and attitudes of hypertension patients, show that p-values = 0.002 it can be concluded that someone with a higher education level will also have a positive attitude in managing hypertension. Education has a strong influence in shaping attitudes so that they can understand good and bad, as well as what is allowed and what is not allowed, which is learned during education (Putri, et al. 2021). This study is also in line with research conducted by Sutrisno, et al. (2020) which shows that participants with higher education have positive attitudes and behaviors in controlling hypertension.

Behavior is defined as an action or activity carried out by a person and is considered anything that can be observed directly or indirectly by a person (Patilaya et al., 2023). Modifying the behavior of hypertensive patients to be good at controlling hypertension can reduce the risk of hypertension complications (Marhenta et al., 2024). Based on the results of the study, the relationship between education level with practice of hypertension patients shows that p-

values = 0.459>0.05, it can be concluded that someone with a high level of education does not necessarily have good behavior or practice in managing and controlling hypertension. Of the 100 participants, 62% of participants did not routinely check their blood pressure every week. This study is not in line with the research conducted by Ashari et al. (2021) which in their study showed that high levels of education in hypertensive patients had better hypertension control behavior compared to hypertensive patients with lower levels of education. It happens because a person's behavior can be influenced by factors other than education level, such as genetic factors, environment, religion, socio-economic, culture, work, central nervous system, perception, and feelings (Maryani et al., 2023).

It is crucial for hypertensive patients must control their disease because hypertension is a chronic disease that cannot be cured and can only be controlled by the sufferer so that it does not lead to complications of hypertension. One example of treatment that can be done to lower high blood pressure for hypertensive patients is progressive muscle relaxation therapy, which is a complementary therapy that has no side effects, is efficient and is easy to do by anyone (Naufal & Khasanah, 2020). In addition, another way to lower blood pressure with non-pharmacological therapy is isometric handgrip exercise (IHE) combined with Sundanese degug instrumental music, which has been proven to lower blood pressure in hypertensive patients (Sopiani et al., 2024). One way to screen for hypertension is to measure blood pressure (Romadhon et al., 2023). Routine blood pressure checks are important to determine blood pressure conditions so that they can be a warning for hypertension sufferers (Salsabila & Kristinawati, 2023). In this study, participants who filled out the KAP questionnaire showed that only 38 out of 100 participants routinely checked their blood pressure every week, this behavior indicates that the awareness of hypertensive patients in controlling hypertension is still relatively lacking. Besides, one of the factors that influence the behavior of measuring blood pressure independently is education and knowledge (Fadillah & Handayani, 2023). So in managing hypertension, knowledge, attitudes, and behavior are needed that are equally good so that hypertension control can be effective.

CONCLUSION
Based on the results of the study, show that there is a significant relationship between the level of education and the knowledge and attitude of hypertension sufferers in controlling their disease with p-values of 0.029 <0.05 and 0.002 <0.05, respectively. From this it can be concluded that a higher level of education affects a person's knowledge and attitude, the better the level of education, the better the level of knowledge and attitude. While from the statistical test between the level of education and practice, there is no relationship between the two with a p-value = 0.459>0.05, it shows that someone with a high level of education does not necessarily have a good practice. Practices can be formed from many factors, not only from the level of education alone.

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