INTRODUCTION

The elderly will certainly experience a decreased health status caused by disease and nature.\(^1\) It can risk the elderly from non-communicable diseases, one of which is hypertension. In 2015, WHO stated that the number of people with hypertension worldwide was around 1.13 billion, estimated to increase by 370 million in 2025 or 1.5 billion. It indicates that 1 in 3 people worldwide is diagnosed with hypertension. Riskesdas 2018 estimated that more than 63.3 million people live with hypertension in Indonesia. One of the contributors was elderly, amounting to 135.4 thousand people.\(^2\)

A person diagnosed with hypertension will increase the risk of complications.\(^3\) Complications can be minimized by complying with treatment, as hypertension is an irreversible disease. Medication adherence is the behavior of patients who take medication at the right time and dose according to a doctor's prescription.\(^4\)

Patients will not benefit from medication if they do not adhere to medication in their treatment. It occurs because the drug serum levels do not reach the dose needed by the body, so the intervention will not effectively control the patient's high blood pressure.\(^5\)

One factor that plays an important role in medication adherence is self-efficacy. It is a belief in one's ability to carry out certain tasks and change circumstances, such as a belief in healthy living behavior. The important role of self-efficacy in adherence to drug therapy lies in a person's self-knowledge, which refers to self-confidence in his ability to achieve hypertension treatment goals.\(^6\)

The existing phenomenon based on the prevalence of Riskesdas in 2018 states that 13.3% of people with hypertension do not take medication, and another 32.3% do not take medication regularly. Thus, it can be seen that people with hypertension in Indonesia have a low level of adherence to taking medication.\(^2\) Based on a preliminary study conducted on October 1, 2021, at the Posyandu for the elderly in Mejing Wetan, data showed 70 older people suffering from hypertension. Furthermore, based on interviews, 3 out of 5 elderly stated that they did not routinely take medication as they felt worried about drug dependence. They attempted to reduce the consumption of salt and high cholesterol foods. They also stated that they only took medicine when feeling relapses, such as unbearable dizziness and neck tension. However, after feeling better, they stopped taking their hypertension medicine.

Based on the data above, it is important to research “The Relationship between Self Efficacy and Drug Compliance Levels in the Elderly with Hypertension”. This study aims to determine whether there is a relationship between the self-efficacy of the elderly and the level of adherence to taking hypertension medication.
METHODS
This research is a quantitative study using a cross-sectional design. Data analysis was carried out using an analytical survey method. The sampling was conducted using a probability sampling technique, especially simple random sampling, to provide equal opportunities for the population to be sampled. The data was obtained 60 samples, namely the elderly with hypertension. This research was carried out for 1 month, in January 2022.

The variables in this study included self-efficacy as an independent variable, medication adherence as a dependent variable, and several confounding variables, namely personality factors, expectations factors, individual characteristics, and environmental factors. Researchers used 3 research instruments: Demographic Characteristics of Respondents, Medication Adherence Self Efficacy Scale-Revised (MASES-R) to measure the self-efficacy variable, and Morisky Medication Adherence Scale (MMAS-8) to measure the medication adherence variable.

Univariate analysis in this study was carried out using descriptive statistical analysis and frequency distribution analysis. This analysis was used on all variables in this study: the demographic characteristics of hypertensive patients, the independent variable, namely self-efficacy, and the dependent variable, namely medication adherence. Meanwhile, bivariate analysis was used to examine the relationship between self-efficacy and medication adherence by observing the significance value of <0.05.

RESULTS
Based on Table 1, it can be seen that the respondents, namely the elderly with hypertension, are mostly female, with a total of 46 respondents (76.7%). Some respondents were included in the category of elderly (60-74 years), with 47 respondents (78.3%). The distribution of the duration of hypertension was dominated by <5 years duration, with a total of 43 respondents (71.7%). Half of the respondents had an elementary education level, with a total of 30 respondents. Based on Table 2, it can be seen that most of the elderly have a moderate level of self-efficacy (41.7%). Based on the results listed in Table 3, most elderly are not obedient in taking hypertension medication, as indicated by the results with a total of 44 respondents (73.3%).

DISCUSSION
Demographic Characteristics of Hypertensive Elderly Respondents
Based on the results in Table 1, it is found that women dominated the gender of the elderly with hypertension by 76.7%. It is indicated that this study is in line with data from the Indonesian Ministry of Health in 2018, which states that the group of women with hypertension has a greater proportion (36.85%) than men (31.34%). This study also aligns with previous research that revealed the female gender had a 2.7 times greater chance of suffering from hypertension. When women enter menopause, they will experience a decrease in estrogen levels, causing HDL to decrease so that atherosclerosis occurs and blood pressure increases. In addition, obesity in women becomes a risk factor for someone experiencing hypertension. It is a characteristic of the hypertensive population.

Based on Table 1, it is stated that the respondents are more classified in the elderly category (60-74 years) by 78.3%. This result aligns with research by Suparti & Handayani, who stated that the demographic data of elderly respondents with hypertension were mostly in the elderly age range, 88.3%. The incidence of hypertension is influenced by the fact that the elderly will experience changes in the structure of the arteries. It will later affect the work of the heart organ that requires...
it to pump blood more strongly, which increases blood pressure. In the age range of 70-80 years, it is estimated that systolic blood pressure will increase progressively. Meanwhile, diastolic blood pressure will increase in the age range of 50-60 years, and it will tend to settle or decrease later.  

Furthermore, the distribution of the duration of hypertension based on table1 stated that the duration was dominated by < 5 years, which was 71.7%. Previous studies stated that someone who suffered from hypertension for more than 5 years would tend to have a lower level of medication adherence than those who suffered from hypertension for less than 5 years. In addition, it is known that half of the respondents had an elementary-level educational background. It aligns with data from the Indonesian Ministry of Health in 2019, mentioning that 46.38% of people with hypertension have an elementary education level.

**Self-Efficacy in Hypertensive Elderly**

Table 2 shows three classifications of the self-efficacy level of the elderly, namely high, medium, and low. The results of all 60 respondents interviewed indicated that the average level of self-efficacy of the elderly was moderate. This study is in line with previous research, which found that, on average, respondents had a moderate level of self-efficacy. Self-efficacy is a belief in one's ability to carry out certain tasks and change circumstances. Self-efficacy can influence a person to become more conscious of his health status and problems. Thus, it is in line with Bandura's opinion that the higher a person's level of self-efficacy is, the stronger his motivation to maintain and improve health behavior will be. The discussion of self-efficacy in this study focused on self-confidence in carrying out medication adherence in hypertension.

The level of a person's self-efficacy will vary. It happens based on each individual's aspects or dimensions, namely level, strength, and generalization. The level dimension describes the degree of difficulty in carrying out the task based on the individual's perception. This study can be linked to the MASES-R questionnaire, which assesses the respondent's commitment to medication adherence as part of the daily routine. As stated in question number 13, it reads, "Please rate how sure you are that you can do the following tasks: make taking medication part of your routine?". The respondent's statement was dominated by "a slightly sure" answer, which was 31.7%. It showed that the respondents considered taking medicine to have a high degree of difficulty, so they felt unable to make it a routine.

The second dimension is strength, which describes the individual strength level of self-efficacy in carrying out their tasks. Self-efficacy reflects the self-stability or the strength of the individual's belief in his abilities and efforts. Based on the frequency distribution analysis, this study showed that most respondents' self-efficacy levels were moderate (41.7%) and low (31.7%). It indicated that the self-stability of the respondents, namely the moderate level dimension describes the degree of difficulty in carrying out the task based on the individual's perception. This study can be linked to the MASES-R questionnaire, which assesses the respondent's commitment to medication adherence as part of the daily routine. As stated in question number 13, it reads, "Please rate how sure you are that you can do the following tasks: make taking medication part of your routine?". The respondent's statement was dominated by "a slightly sure" answer, which was 31.7%. It showed that the respondents considered taking medicine to have a high degree of difficulty, so they felt unable to make it a routine.

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The generalization dimension is the third aspect that affects the respondents' self-efficacy level. This dimension describes the range of areas of behavior that individuals believe they are capable of doing. It can be related to the MASES-R questionnaire items that assess confidence in taking medication in various circumstances listed in questions 1-12.

Based on the research, there were poor results on several items, namely in questionnaire item number 3 related to worries about taking medication for good. It was dominated by "slightly sure" answers, which was 33.3%. Question number 4 related to taking medicine when no complaints were dominated by "not sure" answers, which was 36.7%. Number 11, related to taking medicine when in good health, was dominated by the "not sure" answer, which was 36.7%. Therefore, it can be concluded that most elderly with hypertension in Mejing Wetan had limitations in various behaviors, with a total of 8 out of 12 areas. It indicated that the limitations of the areas were still somewhat wide, which, if presented, is 67%.

**Medication Adherence in Elderly with Hypertension**

The analysis results in table 3 show two classifications of medication adherence in the elderly with hypertension. 16 respondents (26.7%) adhered to taking medicine, while the remaining 44 respondents (73.3%) did not comply with taking medicine. These results indicated that most elderly had a low level of medication adherence. This study aligns with previous research with a sample of 127 respondents diagnosed with hypertension.

**Table 3. Frequency Distribution of Medication Adherence Variable of Elderly with Hypertension in January 2022 (n=60).**

<table>
<thead>
<tr>
<th>Medication Compliance</th>
<th>Frequences</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obey</td>
<td>16</td>
<td>26.7</td>
</tr>
<tr>
<td>Not obey</td>
<td>44</td>
<td>73.3</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Table 4. Analysis of the Relationship between Self Efficacy Variable and Medication Adherence Levels of Hypertensive Elderly in January 2022 (n=60).**

<table>
<thead>
<tr>
<th>Self Efficacy</th>
<th>Medication Adherence</th>
<th>Total</th>
<th>Chi-Square</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Obey</td>
<td>%</td>
<td>Not obey</td>
<td>%</td>
</tr>
<tr>
<td>High</td>
<td>15</td>
<td>9</td>
<td>1</td>
<td>0.6</td>
</tr>
<tr>
<td>Moderate</td>
<td>1</td>
<td>0.6</td>
<td>24</td>
<td>14.4</td>
</tr>
<tr>
<td>Low</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>11.4</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>9.6</td>
<td>44</td>
<td>26.4</td>
</tr>
</tbody>
</table>
The dominant level of respondents taking medication was 65.4% included in the low category.\(^4\) Medication adherence is the behavior of patients who take medication at the right time and dose according to a doctor's prescription.\(^4\) Medication adherence is also used to measure a person's behavior in complying with a treatment regimen.\(^5\) Without medication adherence, patients will not benefit from medication. It is caused by drug serum levels that do not reach the dose needed by the body, so it will not be effective in controlling high blood pressure.\(^6\) When hypertension is not controlled, it certainly increases the risk of complications. The medication adherence levels for each individual will certainly be different. It is affected by several factors, and each individual has various ways to respond to these factors. The factors include demographic characteristics, perception of the disease, knowledge level, length of illness, and social support.\(^7\)

Based on the demographic characteristics, the average education level of the respondents in this study was elementary school. It is certainly related to the level of knowledge factor. The higher the person's education level, the easier it will be for him to receive and add health-related insight.\(^8\) A high level of insight or knowledge affects a person in knowing and understanding the purpose of the treatment. Thus, a person with a high knowledge level will be more obedient in carrying out hypertension treatment.\(^9\)

As mentioned in the introduction, the perception factor for the disease in the respondents was that they did not routinely take medication due to fear of drug dependence. So far, they only took medication when they felt relapse. This perception was proven in this study through the MMAS-8 questionnaire item number 6, which reads, "when you feel good, do you also sometimes stop taking medication?". The result showed "yes" answers by 75% of respondents. Therefore, it can be seen that the elderly with hypertension in Mejing Wetan still had a wrong perception of hypertension, which affected their medication adherence.

The respondent's length of duration of hypertension based on the study results was dominated by < 5 years duration (71.7%). Based on previous studies, the length of time suffering from hypertension would affect medication adherence. It is in line with research conducted by Balqis\(^10\), revealing that a person who has suffered from hypertension for ≥5 years tends to have a lower level of medication adherence than those who have suffered from hypertension for ≤5 years. It indicated that respondents in this study could take longer to take their medication. From the beginning, those who suffered from hypertension for <5 years already had a low level of medication adherence. Thus, the adherence rate may be lower at ≥5 years duration.

**The Relationship between Self Efficacy and Medication Adherence in the Elderly with Hypertension**

Table 4 shows that the analysis results with the Chi-Square test obtained a significance value of \(p = 0.000\), indicating a significant relationship between self-efficacy and medication adherence as the \(p\)-value was <0.05. In addition, the correlation results showed \(r = 0.770\), indicating the correlation was very strong. This study aligns with other research, revealing a significant relationship between self-efficacy and medication adherence.\(^5\) This study showed that a person's belief in the treatment was determining factor in health behavior and treatment adherence. This research is also strengthened by the result of research conducted by Ayu Sukmaningsih et al.\(^19\) showing the analysis test result using the Spearman Rank method was \(p\)-value = 0.025. It indicated a relationship between self-efficacy and medication adherence for hypertensive sufferers in the Tejakula Health Center. According to this study, medication adherence could be realized if people with hypertension had the confidence to recover from their illness.

Albert Bandura defines self-efficacy as the belief in one's ability to organize and carry out the actions needed to overcome certain situations.\(^20\) According to Bandura, self-efficacy can motivate people to maintain and improve their health behavior. Previous research also stated that high self-efficacy could affect a person's awareness of their health status and health problems more than those with moderate or low self-efficacy.\(^12\) Therefore, the higher the person's level of self-efficacy is, the stronger their motivation for medication adherence will be. Based on the study results, it was found that medium and low levels dominated the respondents' self-efficacy. The level of self-efficacy was moderate at 41.7% and low at 31.7%. As a result, it ultimately affected the motivation and effort, namely being non-adherent in taking medication. It is not surprising that the results of the level of adherence to taking medication in the elderly in Mejing Wetan showed a low level of adherence.

According to Bandura's triadic reciprocal determinism model, three variables, namely behavior, personal variables including self-efficacy, and environmental variables, have a reciprocal relationship and influence each other. This reciprocal relationship will ultimately shape behavior.\(^21\) The behavior in this study is medication adherence. However, behavioral outcomes depend on the factors with stronger stimuli. It also takes time to shape the stimuli to influence or activate the reciprocal model. Therefore, strong stimulation of self-efficacy is also needed to strengthen medication adherence behavior. Strong self-efficacy is formed and influenced by several factors that have proven to be influential based on research conducted by Hermanto et al.\(^2\)

According to them, the factors include the experience of success, the experience of others and verbal persuasion.

Previous research has shown that individuals with low self-efficacy tended to make negative self-comparisons with information from other people's experiences, limiting their potential to increase their self-efficacy. Conversely, individuals with high self-efficacy will take much information from other people's experiences, so it is beneficial for their self-confidence to complete the assigned task. They are also more likely to ignore any information that they interpret as negative.\(^23\) Verbal persuasion is a communication ability to persuade or direct others. Verbal persuasion also has components or elements. Good persuasion must be objective. The commands in invitations or inducements do not appear to be constraints. It has to be based on data or facts to strengthen arguments. Moreover, if an individual is
supported by their closest people, it will be more influential on the belief in his ability to achieve the goal.24

Based on the results and analysis of the research, the alternative hypothesis (Ha) is accepted, and the null hypothesis (Ho) is rejected. Therefore, there was a relationship between self-efficacy and the level of medication adherence in the elderly with hypertension. Furthermore, good self-efficacy would increase medication adherence in the elderly with hypertension.

The limitation of this study is the instrument that was used to collecting data was carried out using a questionnaire without making direct observations in the implementation of taking hypertension medication. To overcome the bias, the researcher also confirms the compliance of taking medication to the family who live with the respondent

CONCLUSION

Self-efficacy had a significant relationship with medication adherence (p = 0.000). The higher the self-efficacy is, the stronger the person's medication adherence will be. On the contrary, the lower the self-efficacy, the lower the medication adherence level in hypertension. The characteristics of the research respondents were dominated by the female gender (76.7%), the age category was dominated by the elderly (78.3%), the duration of hypertension illness was dominated by <5 years duration (71.7%), and the educational background was dominated by the elementary school level (50%). Moderate levels dominate respondents' self-efficacy with a total of 41.7%, and 73.3% of respondents did not adhere to medication.

CONFLICT OF INTEREST

There was no conflict of interest in this research

ETHICS APPROVAL

The ethical clearance in this study was conducted by the research ethics committee of the Faculty of Medicine and Health Sciences, University Muhammadiyah Yogyakarta and has been declared to have passed the ethical review with ethical clearance number 316/EC-KEPK FKIK UMY/XII/2021.

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