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The effect of autogenic relaxation techniques on reducing blood pressure in hypertension patients at Bhakti Husada Cikarang Hospital

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ABSTRACT

Hypertension was a health problem in all parts of the world and was one of the main risk factors for cardiovascular disease. Data from the National Health Indicator Survey (Sirkesnas) showed an increase in the prevalence of hypertension in Indonesia in the population aged 18 years and over by 32.4% (Riskesdas, 2018). Patients with hypertension cannot only depend on medication, but there must be many nursing actions that can enable patients to be independent in overcoming their problems. One thing that can be done is relaxation techniques. The aim of this study was to determine the effect of blood pressure on patients with hypertension at Bhakti Husada Hospital, Cikarang. This research used a quasi-experimental design, Pretest-Posttest one Group design. The samples taken were all patients treated at Bhakti Husada Hospital with hypertension. The results of data analysis showed that those aged 40-60 years dominated with a percentage of 60.9%, women with 78.3%, secondary education (SMP, SMA) 56.5% and long history of hypertension when treated, dominated by 0-5 years with a percentage of 60.9%. In this study, it was found that blood pressure decreased after autogenic relaxation training by 60.9%. This research also obtained results that there was a significant effect of autogenic relaxation treatment on reducing blood pressure with a p value of 0.000. Suggestions for nurses to utilize non-pharmacological treatment in the form of autogenic relaxation exercises which can be taught to patients and patients can do it independently without having to rely on heart medication.

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1. Introduction

Hypertension is a health problem throughout the world and is one of the main risk factors for cardiovascular disease. Hypertension is also called a non-communicable disease because hypertension is not transmitted from person to person. Non-communicable diseases are still a health problem that is of concern in Indonesia at the moment, this is due to the emergence of non-communicable diseases which are generally caused by the lifestyle of each individual who does not maintain good health. Data released by WHO (2018) shows that around 26.4% of the world's population experiences hypertension, with a ratio of 26.6% of men and 26.1% of women. Approximately 60% of hypertension sufferers are in developing countries, including Indonesia (WHO, 2018). According to data released by the Ministry of Health, hypertension and other heart diseases account for more than a third of the causes of death,

with hypertension being the second cause of death after stroke. Data from the National Health Indicator Survey (Sirkesnas) shows an increase in the prevalence of hypertension in Indonesia in the population aged 18 years and over by 32.4% (RISKESDAS, 2018).

Hypertension is also called the silent killer because hypertension does not have specific symptoms or sometimes does not cause symptoms in sufferers. Hypertension has resulted in the deaths of around 8 million people every year, of which 1.5 million deaths occur in Southeast Asia, where one third of the population suffers (Primadi, 2017). Hypertension is also the third cause of death in Indonesia at all ages with a death proportion of 6.8% (Kemenkes RI, 2018).

Increased blood pressure causes the heart to work harder than usual which can result in heart failure, stroke, heart infarction, kidney and blood vessel disorders. Therefore, treatment is needed that can reduce morbidity and mortality and control blood pressure.

Patients with hypertension must make lifestyle changes to reduce or control their blood pressure. Non-pharmacological therapy is the therapy of choice for hypertensive patients because it is affordable and relatively easy to do and also does not cause side effects. One of them is progressive muscle relaxation training, which is an effective way to reduce blood pressure in hypertension sufferers because it can help increase blood flow and oxygen supply to active muscles and skeleton, especially the heart muscles.

Research by Yanti Anggraini, 2020 states that deep breathing relaxation techniques can reduce blood pressure in hypertensive patients for four days (Anggraini, 2020). Research by Widari also states the same thing, namely that deep breathing relaxation therapy, especially autogenic relaxation, is effective in lowering blood pressure in hypertensive patients (Widari & Erika, 2018). However, the success of reducing blood pressure is certainly influenced by many factors, including comorbidities or other aggravating diseases, this needs to be explored more deeply in further research.

The role of nurses in providing nursing care is very helpful in maintaining the maximum quality of patient health by providing nursing care interventions so that health conditions can improve. One action that can help lower blood pressure is relaxation techniques, this is usually and familiarly done by health workers, but in this study researchers will use deep breathing relaxation techniques and guided imagination, so that the expected results are maximum and can be felt to be beneficial for Patients who use it, especially patients with hypertension. Guided relaxation and imagination with deep breathing can increase ventilation of the alveoli, maintain gas exchange and will reduce sympathetic nerve activity and epinephrine can also increase parasympathetic nerves which will reduce blood pressure. This condition will certainly really help improve the patient's heart health condition.

A lot of research on relaxation has been carried out by health workers, but no similar research has been carried out at Bhakti Husada Hospital, Cikarang. Therefore, this research was carried out at Bhakti Husada Hospital Cikarang with the hope that the research would be useful for nurses in developing independent nursing actions, including using relaxation in an effort to reduce blood pressure in patients. Based on a preliminary study conducted by researchers, in the June 2023 period at Bhakti Husada Hospital, the 10 biggest diseases were hypertension in second place, namely 15%.

2. Methods

The research design is the technical and operational steps that will be carried out in this research using a quantitative research design, namely pre-experimental, which uses a Pretest-Posttest one group design, where there is 1 group which is then measured before and after treatment in the form of blood pressure checks. The research population was 23 hypertension patients treated at Bhakti Husada Hospital Cikarang in the November 2023 period. The sample in this study of respondents was the same as the population. The variable in this study was the independent variable (independent variable) which was autogenic relaxation and the dependent variable (dependent variable) was blood pressure.

The implementation method used one group, an unpaired group, namely the treatment group that receives autogenic relaxation technique treatment, and blood pressure is measured before and after treatment. The first data collection began by identifying patients with hypertension in the treatment room, after consent from the respondents, blood pressure measurements were carried out. Teaching autogenic relaxation was carried out after the first blood pressure measurement by asking

respondents to do the relaxation exercise 6 times. The second blood pressure measurement was carried out after the respondent underwent autogenic relaxation. The differences in measurement results before and after treatment in these groups were analyzed to see whether there were differences in blood pressure. Hypothesis testing in this research used a different test (Independent Sample T-Test). The t test is used for hypothesis analysis of two groups of unpaired data. The t test is used to determine whether or not there is a difference in the dependent variable, namely changes in blood pressure. Independent Sample T-Test test results if the sig (2-tailed) < α or sig (2-tailed) < 0.05, then H0 is rejected and Ha is accepted and vice versa.

3. Results and Discussions

3.1 Results

This research explained the effect of autogenic relaxation on changes in blood pressure. Based on the results of initial data collection on respondents carried out on 23 patients with hypertension, several data were obtained regarding the characteristics of the respondents, namely age, gender, education and long history of hypertension. Based on these results, the characteristics of the respondents can be described as follows:

Table 1
Character of respondents

Charater of respondents		N	Percentage
Age	< 40 years	6	26.1
	40-60 years	14	60.9
	> 60 years	3	13.0
Gender	Women	18	78.3
	Men	5	21.7
Education	Low (SD)	10	43.5
	Middle (SMP,SMA)	13	56.5
	High (PT)	0	0
long history of hypertension	0-5 tahun	14	60.9
	6-10 tahun	7	30.4
	> 10 tahun	2	8.7
	Total	23	100.0

Based on table 1 the majority of respondents aged 40-60 years were 14 respondents (60.9%), the remainder were aged < 40 years as many as 6 respondents (26.1%) and aged > 60 years were 3 respondents (13.0 %), Female gender had the largest percentage, 78.3%, compared to males 21.7% from 23 subjects. The length of history of hypertension with a history of 0-5 years had the highest percentage, 60.9%, compared to respondents with a history of 6-10 years and > 10 years, only 30.4% and 8.7% from 23 subjects.

Table 2
Distribution of post-treatment blood pressure measurement results

Change of Blood Pressure	N	Precentage
Decreased Blood Pressure	16	69.6
Constant Blood Pressure	6	26.1
Increased Blood Pressure	1	4.3
Total	23	100.0

Based on the table above, information obtained based on blood pressure from before treatment to after treatment showed that there was a decrease in blood pressure of 69.6%, without any change in blood pressure or it could be said to remain at 26.1% while there was an increase in blood pressure of 4.3%. The results of blood pressure measurements in this study were dominated by a

decrease in blood pressure compared to stagnant results and an increase with a presentation of 69.6% of 23 subjects.

Table 3
First-second level of measurement

Variable	Mean	SD	SE	First-second level of measurement	SE	P value	N
Blood Pressure							
Measurent I	140.91	7.452	1.554	7.000	6.551	0.000	23
Measurent II	133.91	10.655	2.222				

In the table above, the average blood pressure measurement in the first measurement was 140.91 mmHg with a standard deviation of 7,452 mmHg. In the second measurement, the average blood pressure measurement was 133.91 mmHg with a standard deviation of 10,655 mmHg. The information obtained was that the mean difference between the first and second measurements was 7,000 with a standard deviation of 6,551. The statistical test results obtained a value of 0.000, so it can be concluded that there is a significant difference between the pressure levels of the first and second measurements. This showrd that there is a significant effect of autogenic relaxation treatment on changes in blood pressure, especially reducing blood pressure, means H_0 is rejected and H5 is accepted.

3.2 Discussions

Respondent character data showed that patients at Bhakti Husada Hospital, Cikarang were pre-elderly based on Minister of Health Regulation (Permenkes) No. 25 of 2016, namely Pre-elderly: 45-59 years (Permenkes, 2016). There are many studies that showed that the number of women is greater than men in the incidence of hypertension, such as research by Yunus et al in 2021 (Yunus et al., 2021), namely 59.7 % and research by Syamsu et al in 2021 amounting to 61.5 % (Syamsu, 2021). Respondents with a predominant history of hypertension will find it easier to exercise because respondents still have the enthusiasm to recover and be healthy. The results of the analysis show that autogenic relaxation can reduce blood pressure by 69.6% of the total number of respondents.

The results of blood pressure measurements after treatment showed that the average blood pressure measurement in the first measurement was 140.91 mmHg with a standard deviation of 7,452 mmHg. In the second measurement, the average blood pressure measurement was 133.91 mmHg with a standard deviation of 10,655 mmHg. This data shows that there was a decrease in blood pressure after treatment and the results of statistical tests obtained a P value of 0.000, meaning that there was a significant difference between the first and second measurement pressure levels. This showed that there is a significant influence of autogenic relaxation treatment on changes in blood pressure, especially reducing blood pressure. This result was also obtained by Pardosi's research in 2022 which stated that autogenic relaxation was significant in reducing blood pressure (Pardosi, 2022).

Autogenic relaxation is an alternative therapy that can be done independently by hypertension sufferers, it is easy to do at any time and at any time and by anyone, including lay people. Research by Dewi in 2022 showed that age and education do not affect the increase in blood pressure (Dewi Cahyaningrum et al., 2022) so it can be said that exercise will make it easier for a person to maintain their health. Every individual, regardless of age, will be able to do autogenic relaxation exercises, as the results of research by Rasmawati in 2023 show that students were able to do autogenic relaxation so that they can reduce stress scores (Rasmawati et al., 2023). The success of high age was that students are also able to carry out autogenic relaxation so that they are stressed, research results obtained from Purwanti in 2019 (Purwanti, 2020). Likewise among the elderly, they were able to carry out autogenic relaxation, as the results of Beba's research in 2023 showed that the elderly are able to done this and caused a decreased in anxiety (Beba et al., 2020). In fact, autogenic relaxation was also well done by pregnant women, namely in Hardianti's 2023 research which showed the ability of pregnant women to do autogenic relaxation so that it can reduce anxiety levels (Hardianti et al., 2021).

4. Conclusions

The characteristics of respondents were dominated by those aged 40-60 years at 60.9%, women at 78.3%, secondary education, namely junior high school and high school at 56.5% and a history of hypertension 0-5 years at 60.9%. Changes in blood pressure measurement values which decreased dominated respondents by 69.6%. The autogenic relaxation technique has a significant effect in reducing blood pressure with a P value of 0.000.

The results of this research strengthen the concept of non-pharmacological treatment, especially autogenic relaxation, that this therapy was able to lower the patient's blood pressure and proved that the patient independently is actually able to carried out the therapy effectively. Hopefully the results of this research can be a consideration for nurses to provide a discharge planning portion for hypertensive patients to be able to independently maintain blood pressure by exercising non-pharmacological skills, namely autogenic relaxation.

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