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THE EFFECT OF A COMBINATION OF DEEP BREATHING TECHNIQUES AND POSITIVE SELF-TALK THERAPY ON ANXIETY IN HYPERTENSIVE PATIENTS

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ABSTRACT

Background: Hypertension is a major global health issue that frequently triggers psychological distress, such as anxiety, which can further destabilize blood pressure. Deep breathing techniques promote physiological relaxation by activating the parasympathetic nervous system, whereas positive self-talk therapy helps reduce anxiety by modifying negative thoughts into more adaptive and positive ones. As these interventions target complementary physiological and psychological mechanisms, their combination is expected to provide a more comprehensive effect in reducing anxiety among patients with hypertension. This study aims to determine the effect of combining deep breathing techniques and positive self-talk therapy on anxiety scores among hypertensive patients within the Kersanegara Community Health Center working area, Tasikmalaya City.
Methods: This quantitative study employed a quasi-experimental approach with a pretest-posttest control group design. A total of 42 respondents were selected via purposive sampling and divided equally into an intervention group (n = 21) and a control group (n = 21). The intervention group received the combined therapy for 5 days (15–20 minutes per session), while the control group received standard care and health education. Anxiety levels were measured using the Hamilton Anxiety Rating Scale (HARS) and analyzed using dependent and independent t-tests.
Results: The average anxiety score in the intervention group significantly decreased from 22.05 to 13.71 (p = 0.000). Meanwhile, the control group showed no significant reduction, changing from 21.05 to 20.29 (p = 0.217). The post-intervention independent t-test confirmed a significant difference in anxiety levels between the two groups (p = 0.000).
Conclusion: The combination of deep breathing techniques and positive self-talk therapy is highly effective in reducing anxiety among hypertensive patients and can serve as an alternative non-pharmacological nursing intervention. This intervention may be incorporated into routine nursing care and community-based hypertension management programs, particularly in primary healthcare settings, to help nurses manage anxiety among hypertensive patients.
Keywords: anxiety, deep breathing techniques, high blood pressure

INTRODUCTION

Hypertension is one of the non-communicable diseases that is a major health problem in the world. About 1.4 billion people aged 30-79 years have hypertension, but most people are still unaware of their condition, and only a small percentage are able to control

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blood pressure optimally. Hypertension is often referred to as a silent killer because, in the early stages, it generally does not cause typical symptoms, but can cause various serious complications such as stroke, heart disease, and kidney failure if not treated properly (Kario et al., 2024).

In Indonesia, the prevalence of hypertension is still relatively high. One study shows that the prevalence of hypertension reaches 34.1%, while the Health Profile of Tasikmalaya City in 2024 recorded 66,047 cases of hypertension spread across the health center's work area (Muharram et al., 2025).

In addition to having an impact on physical conditions, hypertension also affects the psychological condition of the sufferer. One of the psychological problems that is often found is anxiety. Previous research suggests that people with hypertension experience anxiety on various levels, ranging from mild to severe (Rizal et al., 2019) . Anxiety is an emotional response characterized by feelings of fear, worry, anxiety, and uncertainty in response to an unclear threat (Utami et al., 2024). In people with hypertension, anxiety often arises due to concerns about health conditions, possible complications of the disease, and uncertainty about the condition that will be experienced in the future. This condition can interfere with daily activities and reduce the quality of life of sufferers.

Anxiety in people with hypertension needs attention because it can affect the stability of blood pressure. One study stated that anxiety is one of the psychological factors that affect hypertension (Kurniawan et al., 2018) . The other research also showed a meaningful relationship between anxiety and hypertension incidence with p-value 0,0004 (Irawan et al., 2023). Anxiety is associated with increased blood pressure, poor control of hypertension, and an increased risk of cardiovascular complications. Therefore, the management of psychological aspects is an important part of the comprehensive management of hypertension (Fernandes et al., 2024).

Based on data from the Tasikmalaya City Health Office in 2025, the Kersanegara Health Center is one of the health centers with the highest number of hypertension patients, with 2,556 patients. Setiaratu Village has the highest number of hypertension patients, with 335 people, according to data from the Chronic Disease Management Program (Prolanis). The results of a preliminary study conducted on 9 hypertensive patients showed that most of the respondents experienced anxiety at a mild to moderate level. In addition, the results of observation and communication with nurses in charge of the Non-Communicable Diseases (NCD) program show that anxiety management in hypertensive patients has not been carried out in a structured manner in routine services.

In nursing practice, nurses have an important role in helping patients cope with psychological problems through a variety of nonpharmacological interventions. Some interventions that can be used to reduce anxiety include relaxation, music therapy, five-finger hypnosis, progressive muscle relaxation, deep breathing techniques, and positive self-talk therapy. Breathing techniques work by inducing relaxation by decreasing sympathetic nervous system activity, thereby helping reduce physical and emotional tension. Meanwhile, positive self-talk therapy is a cognitive approach that helps individuals recognize and replace negative thoughts with more positive and realistic affirmations so that they can increase self-confidence and reduce anxiety.

Some studies have shown that both interventions are effective in lowering anxiety. A study reports that positive self-talk therapy has a significant effect on reducing anxiety in hypertensive patients, with a p-value = 0.001. Meanwhile, the other study states that deep breathing relaxation techniques are effective in reducing anxiety through physiological relaxation mechanisms that are able to reduce the activation of the sympathetic nervous system (Ridho et al., 2022) . However, based on the results of a literature search, a study

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that examined the combination of deep breathing techniques and positive self-talk therapy Anxiety scores in people with hypertension are still limited.

Based on the high rate of hypertension, the existence of anxiety problems in hypertensive patients, and the lack of many studies that combine deep breathing techniques and positive self-talk therapy, this study was conducted to determine the effect of a combination of deep breathing techniques and positive self-talk therapy on the anxiety scores of hypertensive patients in the Kersanegara Health Center Working Area, Tasikmalaya City.

RESEARCH METHOD

This study is a quantitative research study with a quasi-experimental, pretest–posttest control-group design. This study aims to determine the effect of the combination of deep breathing techniques and positive self-talk therapy on the anxiety scores of hypertensive patients in Setiaratu Village, Kersanegara Health Center Working Area. The independent variable in this study was a combination of deep breathing techniques and positive self-talk therapy, while the dependent variable was the anxiety score of hypertensive patients measured using the Hamilton Anxiety Rating Scale (HARS) instrument.

The research will be conducted in May 2026 in Setiaratu Village, the working area of Kersanegara Health Center. The sampling technique used was non-probability purposive sampling, based on predetermined inclusion and exclusion criteria. The minimum sample size was calculated using the Lemeshow formula for finite populations with a 95% confidence level (Z = 1.96), an estimated proportion of 0.5, and a margin of error of 5%. The calculation yielded a minimum sample size of 19 participants per group. To anticipate potential dropouts during the study, an additional 10% was added, bringing the total to 21 participants per group. Therefore, the total sample consisted of 42 respondents: 21 in the intervention group and 21 in the control group. Data collection was conducted directly by the researcher, with anxiety scores measured using the HARS instrument at pretest and posttest.

The intervention group was given a combination of deep breathing techniques and positive self-talk therapy, while the control group was given health education about hypertension and standard care in the form of blood pressure checks. The data were analyzed univariately to describe respondent characteristics and anxiety scores. Bivariate analysis began with normality testing using the Shapiro–Wilk test and homogeneity testing using the Levene test. Differences in anxiety scores before and after the intervention were analyzed using paired t-tests, while differences between the intervention and control groups were analyzed using independent t-tests. This research has received ethical approval from the Health Research Ethics Commission of the Ministry of Health of Tasikmalaya, with Number DP.04.03/F.XVIII.1.3.1/442/2026.

The intervention group received a combination of deep breathing techniques and positive self-talk therapy once daily for five consecutive days. Each intervention session lasted approximately 15–20 minutes, consisting of 5–10 minutes of deep breathing exercises followed by approximately 10 minutes of guided positive self-talk. The intervention was delivered directly by the researcher according to a standardized intervention protocol. During the positive self-talk session, the researcher first provided examples and guidance on formulating positive affirmation statements. Participants were then encouraged to develop their own positive self-talk statements based on their personal experiences and conditions, and to repeat these affirmations while maintaining slow and controlled breathing. No additional media, such as workbooks, affirmation cards, or audiovisual materials, were used during the intervention. Meanwhile, the control group

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received health education regarding hypertension and standard care in the form of blood pressure monitoring.

RESULTS

Data collection on respondent characteristics was conducted in the early stages of the research by providing questionnaires during the first meeting. The data were obtained from respondents who had met the inclusion criteria, and the results were used to describe the characteristics of the research sample as follows.

Table 1. Respondent Characteristics

Respondent Characteristics	Intervention Groups		Control Group	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Age				
45-59 years old	21	100	21	100
Gender				
Women	18	85,7	17	81,0
Male	3	14,3	4	19,0
Jobs				
Work	5	23,8	5	23,8
Not Working	16	76,2	16	76,2
Family History				
Yes	13	61,9	11	52,4
No	8	38,1	10	47,6
Long Hypertension				
<5 years old	13	61,9	16	76,2
>5 years	8	38,1	5	23,8
Regularity of Treatment				
Teratur	10	47,6	5	23,8
Irregular	11	52,4	16	76,2
Blood Pressure				
140/90-159/99 mmHg	11	52,4	16	76,2
160/100-179/109 mmHg	10	47,6	5	23,8

Based on Table 1., all respondents in both the intervention and control groups were aged 45–59 years (100%). Most of the respondents were female, namely 85.7% in the intervention group and 81.0% in the control group. The majority of respondents were not employed (76.2% in both groups). Most respondents had a family history of hypertension, which was 61.9% in the intervention group and 52.4% in the control group. The duration of hypertension was predominantly <5 years, accounting for 61.9% in the intervention group and 76.2% in the control group. In addition, the majority of respondents had irregular treatment regimens, namely 52.4% in the intervention group and 76.2% in the control group, and were in the grade 1 hypertension category (52.4% in the intervention group and 76.2% in the control group).

Table 2. Mean and Differences in Anxiety Scores Before and After Intervention in the Intervention Group and Control Group

Variabel	Mean	Average Difference	Std. Deviation	p Value
Intervention Groups				
Anxiety				
Pre-Test	22.05	8.333	3.232	0.000
Post-Test	13.71		3.423	

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Variabel	Mean	Average Difference	Std. Deviation	p Value
Control Group				
Anxiety				
Pre-Test	21.05	0.761	2.801	0.217
Post-Test	20.29		2.552	

Based on Table 2., the average anxiety score in the intervention group decreased from 22.05 before the intervention to 13.71 after the intervention with an average difference of 8.33. The results of the paired t-test showed p = 0.000 (p < 0.05), indicating a significant difference in anxiety scores before and after the combination of deep breathing techniques and positive self-talk therapy. Meanwhile, in the control group, the average anxiety score decreased from 21.05 to 20.29 with an average difference of 0.76. The results of the paired t-test showed p = 0.217 (p > 0.05), indicating no significant difference in the control group.

Table 3. Difference in Mean Post-Intervention Anxiety Score between the Intervention Group and the Control Group

Anxiety	Mean	Std. Deviation	P. Value
Intervention	13.71	3.232	0.000
Control	20.29	3.423	

Table 3., shows that the average post-intervention anxiety score in the intervention group was 13.71, lower than that of the control group of 20.29. The results of the statistical test showed a p-value of 0.000 (p < 0.05), which means that there was a significant difference between the intervention group and the control group after the intervention was given.

DISCUSSION

Age is one of the factors that affect the occurrence of hypertension because, as we age, the elasticity of blood vessels will decrease, so that blood pressure increases more easily. In this study, all hypertension patients in the intervention group and control group were in the age range of 45–59 years. One research result suggests that this age group is prone to hypertension, affected by lifestyle changes, lack of physical activity, and increased stress. Most of the respondents who experienced anxiety were female (Adam et al., 2025). Women tend to be more prone to emotional changes that can affect psychological responses to chronic illness (Faijurahman, 2022). People with hypertension often perceive the disease they experience as a threat to their health, causing emotional responses in the form of fear, worry, and anxiety (Utami et al., 2024).

Most of the respondents were housewives and had suffered from hypertension for <5 years. Daily activities as well as responsibilities in the family can be a source of stress that affects an individual's psychological state. A state of not working can lead to a change in social identity, a loss of productive roles, and trigger psychological stress and feelings of helplessness (Suciana et al., 2020). In the early stages of chronic disease, patients also often experience anxiety due to the uncertainty of disease conditions and the treatment that must be undergone in the long term. In addition, most respondents had a family history of hypertension. A study states that hereditary factors play a major role in the incidence of hypertension, where individuals with a family history of hypertension

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increase the risk of developing hypertension in their offspring by 2–5 times (Bura et al., 2023).

Most of the respondents had irregular medication regularity, and blood pressure was in the category of degree 1 hypertension. The findings suggest that level 1 hypertension can increase the risk of heart disease and stroke, so early detection and lifestyle changes are needed to prevent complications. Non-adherence to treatment can be influenced by long-term therapy saturation, forgetting to take medication, or worrying about the side effects of antihypertensive medications. Hypertension management not only focuses on controlling. blood pressure, but also needs to pay attention to the psychological condition of the sufferer, including anxiety (Nurhidayat et al., 2025).

Before the intervention, the average anxiety scores in both the intervention and control groups showed that respondents were equally anxious. The difference in anxiety scores before intervention in the two groups can be influenced by variations in respondent characteristics, individual experiences related to illness, and the psychological conditions of each respondent. In addition, internal and external factors also play a role in influencing the psychological condition of respondents before the provision of intervention, one of which is the individual's perception of the hypertensive disease he or she is experiencing (Lani, 2021). One study also states that people with hypertension often experience anxiety characterized by disturbing feelings of anxiety and concern about their health condition (Gaol et al., 2021).

After the intervention, the average anxiety score in the intervention group decreased from 22.05 to 13.71, whereas in the control group it decreased only from 21.05 to 20.29. The results of the statistical test showed that the decrease in the intervention group was significant ($p<0.05$), while in the control group it was not significant ($p>0.05$). These findings suggest that a combination of deep breathing techniques and positive self-talk therapy is effective in reducing anxiety in hypertensive patients. Deep breathing techniques help create a relaxation response through the activation of the parasympathetic nervous system, so that physical and emotional tension is reduced (Pathan et al., 2023), while positive self-talk therapy helps individuals change negative thoughts to be more positive and adaptive to the condition of the disease they are experiencing (Irawan et al., 2023). These results are in line with research, which states that the combination of relaxation therapy and positive thinking therapy is effective in reducing anxiety because it works on physiological and psychological aspects simultaneously (Harkomah et al., 2022).

The intervention group received a combination of deep breathing techniques and positive self-talk, lasting 15-20 minutes per session over 5 days, and was administered directly by the researcher. Deep breathing techniques are carried out with slow, regular breathing guidance, while positive self-talk is guided by directing respondents to replace negative thoughts with more adaptive positive statements.

The present study demonstrated that the intervention effectively reduced anxiety immediately after five consecutive days of implementation. However, the duration of its sustained effect could not be determined because no follow-up assessment was conducted after the post-test. Therefore, further studies with longer follow-up periods are needed to evaluate how long the beneficial effects of this intervention can be maintained.

The intervention was generally well tolerated by all participants throughout the study. However, its application should be tailored to the patient's condition. Individuals with severe cognitive impairment, severe psychiatric disorders, acute respiratory distress, or those who are unable to understand or follow verbal instructions may require closer supervision or modification of the intervention. Therefore, patient assessment should be performed before implementing this intervention in clinical practice.

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In addition to a decrease in anxiety scores, in the intervention group, there was also a decrease in average blood pressure after a combination of deep breathing techniques and positive self-talk therapy. The average systolic blood pressure decreased from 156.95 mmHg to 150.28 mmHg, while the average diastolic blood pressure decreased from 98.09 mmHg to 89.90 mmHg. The decrease in blood pressure was in line with the decrease in respondents' anxiety scores. This condition suggests that reduced anxiety can be followed by an improvement in the body's physiological responses, including blood pressure.

In addition to the physiological effects of the intervention, the reduction in blood pressure observed in several participants may also have been influenced by other factors, including adherence to antihypertensive medication, reduced salt intake, adequate sleep quality, lower psychological stress, and compliance with the intervention sessions. Conversely, several participants who experienced increased blood pressure reported factors such as insufficient sleep, consumption of high-sodium foods, and physical activity prior to blood pressure measurement, which may have affected the measurement results. Therefore, although the intervention may contribute to blood pressure reduction through relaxation and reduced anxiety, blood pressure is a multifactorial outcome that should be interpreted alongside lifestyle and treatment-related factors.

In the control group, anxiety scores decreased, but the difference was not statistically significant. This shows that health education alone is not enough to provide optimal psychological change because it focuses more on improving knowledge than on direct anxiety management exercises. In line with one study, which shows that the provision of education alone does not have a significant effect on reducing blood pressure (Fadli et al., 2023).

In contrast to other research, which shows that providing health education can reduce anxiety levels in hypertensive patients with a p-value of 0.001 ($p < 0.05$). This shows that respondents' acceptance of health education can vary. The difference in response can be influenced by characteristics, one of which is the age of the respondent (Febiola & Hudiawati, 2024) . In line with other studies, which revealed that as we age, there can be changes in cognitive function and memory, so that the information provided through health education is easier to forget and difficult to retain for a certain period of time (Pragholapati et al., 2021).

The average post-intervention anxiety score in the intervention group was lower than in the control group. The independent t-test results showed a significant difference between the two groups ($p=0.000$). These findings suggest that the combination of deep breathing techniques and positive self-talk therapy reduces anxiety through complementary physiological and psychological mechanisms. Deep breathing promotes parasympathetic activation and relaxation, whereas positive self-talk helps individuals restructure negative thoughts into more adaptive beliefs, thereby improving emotional regulation and coping abilities.

However, this study has several limitations. The study involved a relatively small sample and was conducted only in one community within the working area of Kersanegara Community Health Center, which may limit the generalizability of the findings to other populations. In addition, the intervention was conducted over only five consecutive days, limiting the evaluation of its long-term effects. Furthermore, factors such as medication adherence, dietary habits, sleep quality, and physical activity were not fully controlled and may have influenced the study outcomes. Therefore, future studies involving larger and more diverse populations, longer follow-up periods, and better control of potential confounding factors are recommended.

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CONCLUSION

The combination of deep breathing techniques and positive self-talk therapy was more effective than health education in reducing anxiety among patients with hypertension. Participants in the intervention group experienced a significant reduction in anxiety scores after the intervention, whereas the control group showed no statistically significant improvement. These findings indicate that combining physiological relaxation through deep breathing with cognitive restructuring through positive self-talk provides a more comprehensive approach to anxiety management than health education alone. Therefore, this combination therapy may be considered an effective non-pharmacological nursing intervention and can be integrated into nursing practice, particularly in primary healthcare, to help manage anxiety among patients with hypertension.

RECOMMENDATIONS

The combination of deep breathing techniques and positive self-talk therapy can be applied independently by hypertensive patients as one of the nonpharmacological efforts to help control anxiety. Health workers, especially in primary health services, can use this intervention as part of nursing services that focus on patients' physical and psychological aspects. Further research is expected to develop this intervention by involving larger sample sizes, longer durations, and application to groups of respondents or other health problems to expand the evidence for therapeutic benefits.

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