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Autogenic Relaxation as a Form of Non-Pharmacological Supportive Intervention for Headaches in Hypertensive Patients

Diah Priyantini¹, Noryani Noryani¹, Suyatno Hadi Saputro¹, Retno Sumara¹, Daviq Ayatulloh²

¹Faculty of Health Sciences, Universitas Muhammadiyah Surabaya, Indonesia

²Faculty of Health Sciences, Universitas Gresik, Indonesia

Abstract

Corresponding Author

diahpriyantini@um-surabaya.ac.id

Hypertension is a major public health problem and is frequently associated with headache, which can significantly interfere with daily activities. Pharmacological therapy remains the most common treatment; however, long-term use may lead to side effects and reduced adherence. Therefore, non-pharmacological supportive therapies, such as autogenic relaxation, are increasingly considered as alternative approaches. This study aimed to evaluate the effectiveness of autogenic relaxation therapy in reducing headache intensity among patients with hypertension. This research employed a case intervention approach conducted at a community health center in Surabaya, Indonesia. Four patients diagnosed with hypertension participated in the study. Data collection was carried out through home visits, including interviews, observation, and review of health history over the past six months. Blood pressure was measured using a tensiometer, and headache intensity was assessed using the Numeric Rating Scale (NRS) and PQRST method. Participants were guided to perform autogenic relaxation therapy twice weekly and independently at home for 20 minutes per session. The results demonstrated that all participants initially experienced moderate headache intensity (NRS 4–6). After the intervention, there was a consistent reduction in pain levels, with all participants reporting mild headache intensity (NRS 2–3). The most notable reduction was observed after the second session of therapy, indicating a progressive improvement in pain control. In conclusion, autogenic relaxation therapy is effective in reducing headache intensity among patients with hypertension. This non-pharmacological approach can be considered a simple, safe, and accessible intervention to complement conventional treatment and improve patient well-being.

Keywords: Hypertension, headache, autogenic relaxation, non-pharmacological therapy, pain management

INTRODUCTION

Hypertension is one of the diseases that causes headaches in Indonesia. High blood pressure causes blood vessels in the brain to tighten, triggering pain that often interferes with the sufferer's daily activities (Byrow et al. 2020). Hypertension is a cardiovascular problem in which there is an increase in systolic circulation pressure ≥ 140 mmHg and diastolic pressure ≥ 90 mmHg. Hypertension or high blood pressure is an increase in systolic blood pressure ≥ 140 mmHg and diastolic blood pressure ≥ 90 mmHg in two estimates with a period of 5 minutes in a state of sufficient or quiet rest. The exact cause of essential hypertension is still unknown. However, various factors are thought to play a role as causes of primary hypertension such as increasing age, stress, psychological and heredity (hereditary). Approximately 90% of hypertension sufferers are classified as primary hypertension, while 10% are classified as secondary hypertension (Manutung 2018). Headaches in hypertension patients often occur and most choose pharmacological therapy in the form of medical drugs that must be taken continuously, making sufferers bored, often forgetting to take, and afraid of side effects. The large number of people who prefer pharmacological therapy makes non-pharmacological therapy not widely used. The impact of using pharmacological therapy has many side effects, it should be minimized and balanced with non-pharmacological supportive therapy (Risipawati, Halid, and Supriyadi 2022).

Based on the World Health Organization (WHO), 40% of the world's population, 31% of the population experience headaches and of these sufferers, only less than a fifth make efforts to control their blood pressure (WHO, 2019). In 2022, WHO estimates that the prevalence of headaches in hypertension will be 22% of the total population. The highest prevalence in Africa is 27%. Southeast Asia with a prevalence of 25% is in 3rd place of the total global population. In Indonesia, reporting on headaches in hypertension is not very clear because most people consider this to be common and often treat themselves and the incidence of hypertension itself shows the number one cause of death each year with the highest cause of occurrence (34.1%) (Kemenkes RI 2023). Meanwhile, according to the health profile in East Java Province, there are around 11,600,444 residents, with a proportion of 48.8% male and 51.2% female. The prevalence of high blood pressure in women is 66.6% higher than in men 31.34% (Jatim 2022). In the prevalence in the Keputih health center, most of the hypertension level

1 was 61.3%, hypertension level 2 was 30.6% and hypertension level 3 was 8.1%. In Surabaya, the prevalence of headaches can reach 30-50% also applies in the Keputih area. Hypertension sufferers often face additional challenges, such as stress and anxiety, which can worsen headaches. In addition, misunderstanding of the relationship between hypertension and headaches makes many people not associate these two conditions, so they do not seek appropriate treatment (Debora et al. 2023). Unhealthy lifestyle habits, such as a high-salt diet and lack of physical activity, also contribute to both of these problems. On the other hand, the stigma surrounding hypertension and mental health problems often makes sufferers reluctant to consult a medical professional (Saputra and Huda 2023).

The high incidence of hypertension makes this disease a public health threat. Hypertension is known as a condition of high blood pressure. Systolic pressure is the highest blood pressure when the ventricles contract, while diastolic blood pressure is the lowest when the ventricles relax. In hypertension, increased blood pressure is caused by blood passing through the vessels with excessive force. Factors that cause hypertension include age, family history, unhealthy lifestyle habits, gender and stress levels. Headaches in people with hypertension in the community require quite a lot of effective treatment. One of the supportive therapies for treating headaches that can be given is autogenic relaxation. The benefits of autogenic relaxation are to help individuals to be able to control several body functions such as breathing, blood pressure, heart rate and blood flow so that a relaxed state is achieved. The effectiveness of this relaxation is carried out for 20 minutes (Ramayanti 2023). Relaxation is a form of therapy in the form of giving instructions to someone in the form of systematically arranged movements to relax the mind and body parts. One type of relaxation that can be given to reduce headaches in hypertension sufferers is autogenic relaxation (Novitasari and Wirakhmi 2018). In pain, pain intensity measurement is done using a Numerical Rating Scale (NRS). The purpose of this community service is to apply autogenic relaxation to reduce the pain scale in hypertension patients.

METHODS

Research is conducted using a case intervention approach in patients with hypertension. The study is carried out at one of the community health centers in Surabaya City, where the prevalence of hypertension is relatively high. This research implements a non-

pharmacological supportive therapy in the form of autogenic relaxation therapy. Prior to conducting the research, the research team obtained permission from the relevant authorities to carry out the study. Data collection is performed through home visits, aiming to provide explanations regarding the purpose and procedures of the research. Researchers introduce themselves, explain the objectives of the study, and obtain informed consent from participants, as well as their willingness to cooperate throughout the research process. Data are collected using observation sheets, interviews, and direct observation. Additionally, a review of past health history and health-related habits over the previous six months is conducted. Blood pressure is measured using a tensiometer. Following baseline assessment, participants are guided by the researchers to perform autogenic relaxation therapy. The therapy is conducted twice a week, while participants are also instructed to perform the therapy independently at home at a predetermined time for approximately 20 minutes during the day. To evaluate headache intensity, measurements are conducted using an observation sheet incorporating the Numeric Rating Scale (NRS) and the PQRST pain assessment method. If the patient's pain is classified as moderate or higher (score >3), autogenic relaxation therapy is administered at the site of pain for 20 minutes, followed by reevaluation.

RESULTS

Characteristics of Hypertension Patients Based on Cases

(1) Mrs. R, 46 years old, female. Mrs. R's profession is a housewife, has a history of hypertension since her second pregnancy. The assessment date is August 5, 2024. At the time of the examination, objective data was obtained for blood pressure of 155/100 mmHg with a pain scale of 5 (moderate). The client said that her family had no history of hypertension. (2) Mrs. H, 51 years old, female. Mrs. H's profession is a housewife, has a history of hypertension in her family. The assessment date is August 5, 2024. At the time of the examination, objective data was obtained for BP of 157/110 mmHg with a headache scale of 4 (moderate). The client said that she had been suffering from hypertension for the past 5 years. The client said that she had been dizzy and had difficulty sleeping since 2 days ago due to pain in the back of her head. The client also often consumes coffee. (3) Mr. W, 53 years old, male. Mr. W's profession is a private employee, has a history of hypertension in his family. Assessment date August 5, 2024. At the time

of the assessment, objective data was obtained BP 160/100 mmHg with a headache scale of 5 (moderate). The client said he was taking amplo-dipine. (4) Mr. S is 47 years old, male. Mr. W's profession is a trader. Assessment date August 5, 2024. At the time of the assessment, objective data was obtained BP 160/110 mmHg with a headache scale of 6 (moderate). The client said he had often experienced headaches since 5 days ago.

Pain Scale Before and after application of Autogenic Relaxation Technique

Table 1. Characteristics of pain scale before and after application of autogenic relaxation technique in hypertension patients.

Patient	Meeting to	Headache Scale	
		Pre	Post
Ny R	1	5	5
	2	4	2
Ny H	1	4	4
	2	4	2
Tn W	1	5	5
	2	4	3
Tn S	1	6	6
	2	4	3

Table 1 shows that the data on the first day there were 2 respondents who experienced a headache scale of 5 (moderate pain). There was 1 respondent who experienced a headache scale of 4 (moderate pain), and 1 respondent who experienced a headache scale of 6 (moderate pain). on the second day there were 2 respondents who experienced a headache scale of 2 (mild pain). there were 2 respondents who experienced a headache scale of 3 (mild pain).

DISCUSSION

This study demonstrates that organizational resilience is positively associated with work-related performance among healthcare workers, highlighting the critical role of organizational capacity in sustaining workforce functioning within complex healthcare environments. In settings characterized by high workload, uncertainty, and frequent disruptions, the ability of an organization to anticipate, adapt, and respond effectively becomes essential in maintaining employee performance. These findings reinforce the perspective that workforce outcomes are not solely determined by individual competencies, but are strongly influenced by organizational-level factors that shape the working environment and support systems (Duchek, 2020; Barasa et al., 2018).

The present findings are consistent with previous studies emphasizing that organizational resilience contributes to improved employee outcomes through

mechanisms such as adaptive leadership, effective communication, and flexible resource management. Resilient organizations are better equipped to create supportive environments that enable employees to cope with stressors and maintain optimal functioning under pressure (Iflaifel et al., 2020; Cooper et al., 2021). In healthcare contexts, these capabilities are particularly important, as professionals are required to deliver high-quality care while navigating unpredictable clinical demands. Prior research has also shown that organizational resilience is linked to improved workforce stability, reduced burnout, and enhanced job-related outcomes, further supporting the relevance of resilience as a strategic organizational asset (Robertson et al., 2015; Hartmann et al., 2020).

Among the dimensions of work-related performance, the findings suggest that organizational resilience has a particularly strong influence on work engagement. This indicates that resilient organizational environments may play a central role in enhancing employees' psychological connection to their work, including their sense of enthusiasm, dedication, and involvement. Theoretically, this can be explained through the lens of job demands–resources (JD-R) theory, which posits that organizational resources serve as key drivers of work engagement by buffering job demands and fostering motivation (Bakker & Demerouti, 2017). In this context, organizational resilience can be conceptualized as a higher-order resource that strengthens employees' capacity to remain engaged despite challenging work conditions. This is in line with previous findings demonstrating that supportive and adaptive organizational environments significantly enhance employee engagement and well-being (Schaufeli, 2017; Knight et al., 2017).

In addition to engagement, organizational resilience was also associated with other dimensions of work-related performance, including job performance, productivity, and job involvement. These findings indicate that resilience influences not only motivational and affective aspects of employee behavior but also observable work outcomes and efficiency. A resilient organization may facilitate better coordination, clearer role expectations, and more effective decision-making processes, all of which contribute to improved job performance and productivity (Lengnick-Hall et al., 2011; Bardoel et al., 2014). Furthermore, the association with job involvement suggests that employees working in resilient environments are more likely to develop a stronger psychological attachment to their roles,

Indonesian Academia Health Sciences Journal which has been linked to higher organizational commitment and sustained performance over time (Kanungo, 1982; Karatepe & Olugbade, 2017). Collectively, these findings underscore the multidimensional impact of organizational resilience on workforce effectiveness.

Despite these important contributions, several limitations should be acknowledged. First, the cross-sectional design of the study limits the ability to establish causal relationships between organizational resilience and work-related performance, as temporal dynamics cannot be assessed. Second, the use of self-reported measures may introduce potential biases, including social desirability and subjective perception, which could affect the accuracy of the findings. Third, the study was conducted within a single hospital setting, which may limit the generalizability of the results to other healthcare organizations with different structural and cultural characteristics.

CONCLUSION

Headache scale in hypertension patients before autogenic relaxation technique was performed on four respondents with moderate scale category. Headache scale in hypertension patients after autogenic relaxation technique was performed on four respondents with mild scale category. Application of autogenic relaxation can be used as distraction therapy to reduce headache. It is expected that the findings obtained in this community service can provide additional information for the community about how to handle headache in hypertension patients, namely with autogenic relaxation technique.

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