

Implementation of A Combination Training Progressive Muscle Relaxation Therapy and Music Therapy (Resik Therapy) to Decrease Hypertension in Datar Village, Sumbang District

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Abstrak

Hipertensi merupakan faktor utama penyebab kematian manusia secara global. Berbagai upaya telah dilakukan namun belum optimal. Kondisi tersebut mendorong para akademisi untuk mengembangkan terapi non farmakologis guna melengkapi terapi farmakologis salah satunya dengan relaksasi otot progresif dan terapi musik. Kombinasi terapi relaksasi otot progresif dan terapi musik (RESIK) dapat menghambat vasokonstriksi pembuluh darah melalui stimulasi baroreseptor. Tujuan pengabdian masyarakat ini adalah untuk meningkatkan pencegahan tekanan darah tinggi pada klien dengan hipertensi di Desa Datar Kecamatan Sumbang. Warga yang mengikuti kegiatan ini sebanyak 31 orang yang terdiri dari 31 perempuan dengan rentang umur 30-70 tahun. Pendekatan utama yang digunakan adalah ceramah, diskusi, demonstrasi, redemonstrasi. Pengabdian mengukur tekanan darah pada klien dengan hipertensi terlebih dahulu. Lalu klien diberikan pelatihan terapi RESIK selama 30-45 menit. Setelah itu pengabdian mengukur kembali tekanan darah pada klien. Hasil pengabdian menunjukkan adanya penurunan tekanan darah dengan rata-rata skor systole awal 134 menjadi 132 rata-rata skor diastole awal 95 menjadi 87. Oleh karena itu, mitra mendapatkan ipteks dalam upaya menurunkan tekanan darah. Warga diharapkan menerapkan terapi RESIK upaya pencegahan hipertensi untuk menurunkan risiko komplikasi seperti stroke.

Kata kunci: Hipertensi, Terapi Musik, Terapi Relaksasi Otot Progressif

Abstract

Hypertension is a major factor causing human death globally. Various efforts have been made but not optimal. These conditions encourage academics to develop non-pharmacological therapies to complement pharmacological therapies, one of which is progressive muscle relaxation and music therapy. The combination of progressive muscle relaxation therapy and music therapy (RESIK) can inhibit vasoconstriction of blood vessels through baroreceptor stimulation. The purpose of this community service was to increase the prevention of high blood pressure in clients with hypertension in Datar Village, Sumbang District. There were 31 residents who took part in this activity, consisting of 31 women with an age range of 30-70 years. The main approaches used are lectures, discussions, demonstrations, and redemonstrations. The servant measures blood pressure in clients with hypertension first. Then the client was given RESIK therapy training for 30-45 minutes. After that the servant re-measures the client's blood pressure. The results of the service showed a decreased in blood pressure with an average initial systole score of 134 to 132, an average initial diastole score of 95 to 87. Therefore, partners received science and technology in an effort to lower blood pressure. Residents are expected to apply RESIK therapy to prevent hypertension to reduce the risk of complications such as stroke.

Keywords: Hypertension, Music Therapy, Progressive Muscle Relaxation Therapy

1. BACKGROUND

Hypertension or often called high blood pressure, is a chronic disease that can increase the risk of coronary heart disease, stroke and chronic kidney failure and even death. Hypertension is an important health problem for the community to pay attention to. This disease rarely causes symptoms and can kill individuals secretly, that's why hypertension is also called the silent killer disease (Kilic, 2018). Primary hypertension is a major cause of cardiovascular disease morbidity which has a significant influence on the incidence of stroke. The prevalence of stroke in

hypertensive patients aged 50 years is 20% with a risk ratio of 4 and the prevalence continues to increase with age (Fatmasari et al., 2019). Patients with hypertension have a 2.87 times risk of having a stroke. In Indonesia, the prevalence of hypertension continues to increase (Article, 2020). Based on the Basic Health Research (Riskesdas) in 2013 the prevalence of hypertension was 25.8%, while at Riskesdas in 2018 it increased to 34.1% (Health Research and Development Agency, 2013).

The prevalence of uncontrolled hypertension is high. The prevalence of uncontrolled hypertension is 67.2% (Incircus, 2020). The incidence of uncontrolled hypertension is more than 52.7%, while the results of research by Hussain et al., stated that the prevalence of uncontrolled hypertension in Indonesia is more than 91%. (Janchai et al., 2021). In addition, prolans is also not optimal in the management of hypertension patients. The results of a preliminary survey in October-November 2018 at 2 Puskesmas Banyumas Regency obtained data on the number of primary hypertension sufferers who took the prolans 303 people from 2266 people with hypertension and 196 people (64.68%) with uncontrolled blood pressure.

The incidence of hypertension in Datar Village, Sumbang District is quite high. Based on data from interviews with the Puskesmas 1 Sumbang which oversees the work area of Datar Batuuraden Village, it shows that several diseases that are often experienced by the elderly include hypertension, diabetes, heart disease, and stroke with a higher number of hypertension cases among others. Puskesmas data obtained 91 elderly (49%) with hypertension cases. Based on the results of interviews with Mas, as many as 8 of 17 people (47%) who suffered from PTM did not do a health check at the prolans service or health facility, and 7 of 17 people (41.1%) who suffered from PTM did not routinely take the medicine recommended by the doctor. A total of 38 people (54.3%) had never received health education about non-communicable diseases (hypertension, stroke, DM, cancer). People do not know how to control hypertension and how to lower blood pressure. The community said it needed health education in the form of how to treat and prevent hypertension in clients with hypertension.

Nurses provide non-pharmacological treatment that can be done independently and inexpensively in an effort to maintain blood pressure stability for people with hypertension. Several studies have shown that non-pharmacological approaches that can reduce hypertension include acupressure, Chinese herbs, herbal therapy, deep breath relaxation, aroma therapy, classical music therapy, meditation, massage, progressive muscle relaxation therapy and biofeedback (Zhao et al., 2021). Progressive muscle relaxation therapy and music therapy (RESIK) can inhibit vasoconstriction of blood vessels through baroreceptor stimulation (Azizah et al., 2021). This will cause a decrease in heart rate, stroke volume, and cardiac output which results in a decrease in blood pressure (Key, 2014). RESIK therapy is relaxation that can be done independently, easier than other non-pharmacological therapies.

The purpose of this community service is to reduce high blood pressure through RESIK therapy for clients with hypertension in Datar Village, Sumbang District.

2. METHODS

2.1. Place and Time of Devotion

This community service was carried out at the Datar Village, Sumbang District, Banyumas Regency, Central Java Province. While the implementation time is Sunday, August 20, 2022 starting at 09.00-12.00 WIB.

2.2. Tools and Materials Used

The tools and materials used in this service are equipment for measuring blood pressure, namely 5 manual tension meters, LCDs, and knowledge questionnaire instruments.

2.3. Population and Sample

Community service is carried out for all residents of Datar Village, Sumbang District. There are 31 people who are at risk of hypertension, aged 30 years and over, both male and female.

2.4. Service Procedure

2.4.1. Pre-analytical

Pre-analytic is the time before the examination is carried out, pre-analytic starts from the preparation of service (Nisma et al., 2021.). The preparation of the service team prepares the event as well as possible with health protocols. Places for washing hands and soap or hand sanitizer are prepared to wash hands before carrying out activities. Masks and seminar kits (materials and stationery) for all participants were prepared. Participants were asked to wash their hands before entering the analysis room. The service activity was held at the Datar Village Hall, Sumbang District and the service time was adjusted to the residents' suggested time, starting at 9. The servant gave invitations to residents 3 days before the activity and was reminded 1 day before the activity. The Village Hall for activities is arranged according to health protocols, given a distance between residents in the waiting room and examination room. All these health protocols are well prepared before the service is carried out.

2.4.2. Analytic

Analytical is the time of implementation or analysis, before measuring blood pressure for residents who suffer from hypertension. Each resident was first measured blood pressure with a sphygmomanometer. This is done to determine the blood pressure of residents. Individuals can be said to be diagnosed with hypertension if the systolic blood pressure is at a level of 140 mmHg or more and the diastolic blood pressure is at a level of 90 mmHg or more. (Chew et al., 2021).

After measuring blood pressure, residents filled out a hypertension prevention knowledge questionnaire (pretest). After that, residents were given Health Education regarding how to prevent hypertension through RESIK Therapy (Combination of Progressive Muscle Relaxation Therapy and Music Therapy) for 30-45 minutes. Progressive muscle relaxation is an effective way to relax and reduce anxiety, if a person is able to rest his muscles in the right way, it will be followed by mental or thought relaxation. While music based on the working principle, the music heard by the ear will be stimulated to the brain, then the music will be translated according to the type of music and the target to be stimulated. Sound waves that are delivered to the brain will generate alpha brain waves that can evoke relaxation. Therefore, The application of RESIK therapy is expected to reduce the blood pressure of clients with hypertension. Then the residents were taken to measure their blood pressure.

2.4.3. Post Analytics

Post-analytic is the state after an analysis of the patient/citizen has been carried out. For residents who are diagnosed, it will be continued by involving these residents for referrals to the PTM Posbindu in the Datar Region, Sumbang District. In accordance with the partners' problems and the solutions offered previously, the method of implementation that will be carried out is the method of counseling and checking and training on routine RESIK therapy for residents who experience the disease. The implementation of health education is carried out first for residents, then blood pressure checks are carried out for each resident who comes. Furthermore, RESIK Therapy training was conducted for residents who are at risk of hypertension in order to reduce the risk of hypertension complications such as stroke.

3. RESULT AND DISCUSSIONS

After handling the cooperation contract between the Head of LPPM Unsoed and the Community Service Team of the Department of Nursing regarding the implementation of community service, the team made various preparations before going directly to the field. It is necessary to talk about the strategy and method of implementing the service, the place and

conditions of the residents who will participate in the service. After that, team members divide tasks (teamwork): team members are tasked with registration, scientific education, analysis of examination results and teaching the correct use of tools to people affected by hypertension. The service also involved as many as 4 students as servant assistants to help measure blood pressure.

a. Partner Condition

Partners involved in the PKM program for the application of science and technology are clients with hypertension in Datar Village, Sumbang District, with 31 participants. The role of these participants is very vital to support the success of the program because they are the primary parties who are directly related to the treatment and control of hypertension.

b. Service Participants

There are 31 residents of Datar Village, Sumbang District, with 31 women.



Figure 1. Measurement of blood pressure before the training in Risk Therapy

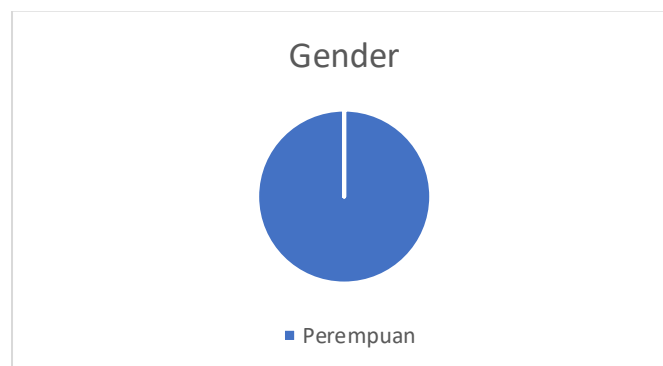


Figure 2. Participants by gender

The age of the residents who are the target of the examination is the age of 30 years and over because at that age the body's biochemical metabolism has begun to decline, as a result it can cause metabolic abnormalities and result in the emergence of several diseases. (Jerita Eka Sari et al., 2021)



Figure 3. Education to Reduce Hypertension through RESIK Therapy

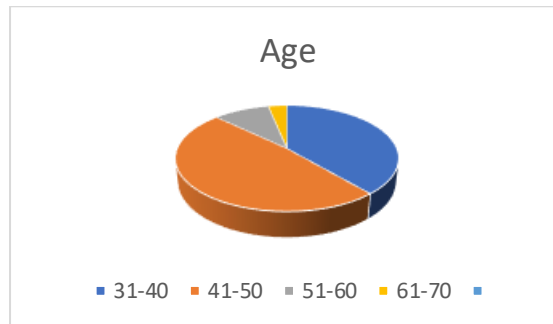


Figure 4. Participants by age

Results of Measuring the Average Blood Pressure of Residents on Hypertension Prevention



Figure 5. RESIK Therapy Training for residents to reduce hypertension

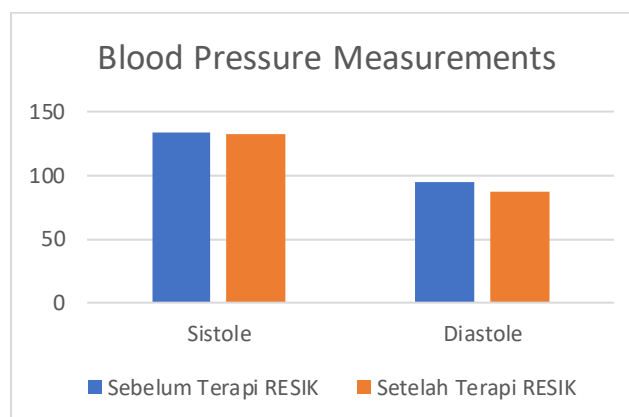


Figure 6. Results of blood pressure measurements before and after RESIK therapy

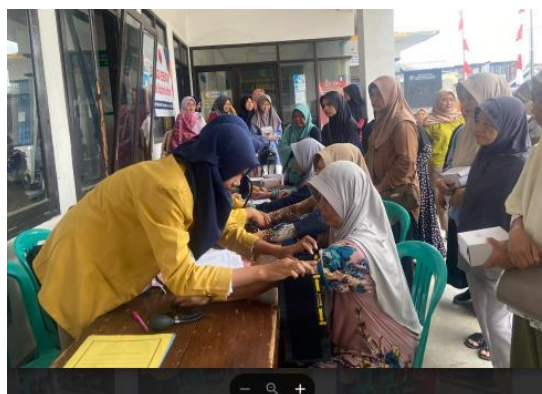


Figure 7. Measurement of blood pressure after being given RESIK terapi therapy

The results of the service showed a decrease in blood pressure with an average initial systole score of 134 to 132, an average initial diastolic score of 95 to 87. A decrease in the average blood pressure score of residents after residents received hypertension prevention education through combination therapy of progressive auto relaxation and therapy music (RESIK Therapy).

Non-pharmacological management includes weight loss, alcohol and sodium restriction, regular exercise and relaxation. There are many kinds of relaxation related to hypertension sufferers, one of the relaxations that can be done is progressive muscle relaxation and music therapy (RESIK). Progressive muscle relaxation is a form of therapy in the form of giving instructions to someone in the form of movements that are systematically arranged to relax the mind and body parts such as muscles and restore conditions from a tense state to a relaxed, normal and controlled state, starting from movement hand to foot movement.

Progressive muscle relaxation will reduce pulse and blood pressure and respiratory rate. Systolic blood pressure is influenced by psychology, so that relaxation will get calm and decrease systolic pressure, besides that systolic blood pressure is also influenced by systemic circulation and pulmonary circulation so that with this therapy assisted by breathing regulation there will be a decrease in systolic blood pressure. (Azizah et al., 2021). While diastolic blood pressure is related to coronary circulation, if the coronary arteries have atherosclerosis, it will affect the increase in diastolic blood pressure, so that with progressive muscle relaxation therapy there is a slight decrease in diastolic blood pressure. Relaxation is basically related to the human nervous system, which consists of the central nervous system and the autonomic nervous system (sympathetic nerves and parasympathetic nerves). (Yan et al., 2017). A relaxed state can stimulate the body to produce a molecule called nitric oxide (NO). This molecule works on blood vessel tone so that it can reduce blood pressure.

Progressive muscle relaxation is done by consciously stretching and relaxing muscles, when the muscle contracts a nerve impulse arrives at the axon terminal, there is a release of acetylcholine which will diffuse across the synapse. (Yan et al., 2017). Acetylcholine makes the sarcolemma more permeable to Na^+ ions, which will enter the cell immediately. The sarcolemma depolarizes, becoming positively charged on the inside and negatively charged on the outside. Depolarization stimulates the release of Ca^{2+} ions from the sarcoplasmic reticulum, Ca^{2+} ions will bind to the troponin-tropomyosin complex, which will cause it to shift away from the actin filaments. (Betts et al., 2020). Myosin breaks down ATP to release its energy, the bridges on myosin then attach to the actin filaments and pull them towards the center of the sarcomere, which causes the sarcomere to shorten. All of the sarcomere in the muscle fibers will be shortened so that there is a contraction of all the muscle fibers. When the sarcolemma repolarizes again, K^+ ions leave the cell, returning a positive charge outside the cell and a negative charge inside the cell. This pump will then return Na^+ ions out and K^+ ions into the cell. The cholinesterase in the sarcolemma will inactivate acetylcholine. Then, the nerve impulse will prolong the contraction (more acetylcholine is released). When there are no more impulses, the muscle fibers will relax and return to their original length.

Progressive muscle relaxation can trigger the heart's pumping activity to decrease and the arteries to widen, so that a lot of fluid comes out of the blood circulation. This will reduce the workload of the heart because people with hypertension have a faster heart rate to pump blood as a result of increased blood. After experiencing relaxation, the heart's pumping activity is reduced, arteries are dilated, and a lot of fluid comes out of circulation. As it is known that young people have better elasticity of blood vessels. This elasticity of blood vessels causes a large tolerance of the vessels to end-diastolic pressure. Arterial walls that are elastic and easily distended will easily widen the diameter of the blood vessel walls to accommodate changes in pressure. (Da et al., 2019).

Progressive muscle relaxation is an effective way to relax and reduce anxiety, if a person is able to rest his muscles in the right way, it will be followed by mental or thought relaxation. While music is based on its working principle, music that is heard by the ear will be stimulated to the brain, then the music will be translated according to the type of music and the target to be stimulated. Sound waves that are delivered to the brain will generate alpha brain waves that can

evoke relaxation. Therefore, the application of RESIK therapy is expected to reduce the blood pressure of clients with hypertension.

4. KESIMPULAN

Based on the results of community service regarding Education on Increasing Knowledge of Hypertension Prevention Through Combination of Progressive Muscle Relaxation Therapy and Music Therapy (RESIK Therapy) it has gone well and received a very pleasant welcome by the residents. The results of the service showed a decrease in blood pressure with an average initial systole score of 162 to 149, an average initial diastolic score of 128 to 105. A decrease in the average blood pressure score of residents after residents received hypertension prevention education through combination therapy of progressive auto relaxation and therapy music (RESIK Therapy). Residents are advised to apply RESIK Therapy regularly to prevent hypertension and hypertension complications such as stroke.

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