

Application of benson relaxation therapy and progressive muscle relaxation on sleep quality in hypertensive patients in Lingasari Village, Ciamis Regency

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ARTICLE INFO

Article history:

Received Apr 30, 2024

Revised May 19, 2024

Accepted Jun 13, 2024

Keywords:

Benson Relaxation Therapy
Hypertension
Lanisa
Progressive Muscle Relaxation
Therapy
Sleep Quality

ABSTRACT

Most elderly people with hypertension have poor sleep quality. Poor sleep quality in elderly people with hypertension can worsen their hypertension condition, causing an increased risk of heart disease, cognitive impairment, and a general reduction in quality of life. Benson relaxation therapy and progressive muscle relaxation can be an effective and safe alternative in managing sleep and activity in elderly people with hypertension. Both therapies do not involve the use of drugs and can be easily learned by seniors. This study aims to determine the effect of Benson relaxation therapy and progressive muscle relaxation on sleep quality in hypertensive elderly people. This research uses a quasi-experimental method with a one group pretest posttest design. Data collection used the Pittsburgh Sleep Quality Index (PSQI) questionnaire. The sample was determined using purposive sampling with a total of 35 respondents. The statistical results of the paired sample t-test showed a p value of 0.000 (p value < α 0.05) so it can be concluded that there is an influence of Benson relaxation therapy and progressive muscle relaxation on sleep quality in hypertensive elderly people. This study suggests integrating progressive muscle relaxation interventions combined with Benson therapy into community health programs by actively involving families.

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INTRODUCTION

The world is currently faced with the same challenges in dealing with the increasing number of elderly people who continue to show an increase. WHO data in 2020, elderly people over 60 years old have exceeded the number of children under five in the world. In 2050, the elderly population will increase by 22%, it is even estimated that it will reach 2 billion people, and 80% of them will be in low and middle income countries. (RI Ministry of Health, 2022a)(RI Ministry of Health, 2022b).

In line with WHO predictions, in Indonesia the growth of the elderly is very fast compared to other age groups. Data from the Central Statistics Agency (BPS) shows that Indonesia has experienced an increase in the number of elderly people from 18 million people (7.6%) in 2010, to 27 million people (10%) in 2020, and is predicted to continue to increase in 2035. to 40 million people (13.8%). The number of elderly residents in West Java Province, both those living in urban and rural areas, is 9.25% (Census & BPS, 2020) (Judge, 2020).

The increase in the number of elderly people in Indonesia can have various impacts and influences on social, economic and public health conditions. An increase in an individual's life expectancy that is not commensurate with the quality of human development can cause a demographic burden, including health problems. This causes the elderly population to be at risk of declining health and can become a burden on families and society. The dependency burden rate is described by the increasing economic burden of the non-productive elderly population which must be borne by those of productive age (RI Ministry of Health, 2017) (R. Ministry of Health, 2017). Based on the West Java Health Profile, the non-productive age population in the age group ≥ 65 years is 2.5 million people (Sari & Ridza, 2021) (Damayanti & Sunendiari, 2021). The burden experienced by the productive age is influenced by the health condition of the elderly. The aging process as an accumulation of damage at the cellular and molecular level that occurs over a long period of time is often associated with the occurrence of non-communicable diseases. Various studies have shown that age is a risk factor for non-communicable diseases in the elderly group. The highest prevalence of non-communicable diseases is hypertension, namely 32.5%.

Physiologically, the older a person is, the greater the risk of developing hypertension. The highest proportion of hypertension occurred in the age group ≥ 75 years, amounting to 63.8% in 2013 and increasing to 69.5% in 2018 (Indonesian Ministry of Health, 2019). An increase in hypertension cases has also occurred in Ciamis Regency, West Java Province in the last three years, where in 2017 there were 40,916 cases, in 2018 there were 64,097 cases and in 2019 there were 99,404 cases. (Fatimah & Yuliani, 2019) (Fatimah & Yuliani, 2019). This shows an increase of 63.8% in 2018 and increased again in 2019, namely 64.5%.

The degenerative process that occurs in the elderly causes a decline in their health condition. The most frequent complaints experienced by the elderly include sleep disorders (insomnia) which causes a decrease in the quality of the elderly's sleep. Decreased sleep quality has an impact on the health and quality of life of the elderly (Madjid, 2014). The results of the study prove that more than half (60.0%) of the elderly experienced poor sleep quality and more than half (56.7%) of the elderly experienced a recurrence rate of hypertension with complications, while the Spearman rank correlation results obtained p -value = (0.000) so it can be concluded that there was a significant relationship between sleep quality and the recurrence rate of hypertension in the elderly. Hypertension is high blood pressure that is abnormal and is measured at least three times on different occasions. A person is said to be hypertensive if their blood pressure is more than 140/90 mmHg. Hypertension is a non-communicable disease and is one of the main causes of death in the world. Blood pressure is the force exerted by blood circulation against the walls of the body's arteries, namely the main blood vessels in the body. This pressure depends on blood vessel resistance and how hard the heart works. The more blood the heart pumps and the narrower the arteries, the higher the blood pressure.

One of the symptoms experienced by elderly people with hypertension is difficulty sleeping as well as headaches, blurred vision, irritability, chest pain, dizziness, strong and fast heartbeat. Hypertension is a non-communicable disease which is a serious health problem today. Uncontrolled hypertension can cause target organ disorders, and can cause heart attacks, strokes, kidney problems and blindness (Rahmadani, 2020) (Sinaga et al., 2021).

Several studies have found data that the majority of elderly people with hypertension have poor sleep quality. The driving factor for poor sleep quality due to hypertension is the presence of symptoms of sleep disorders such as frequent awakening, snoring and nocturia. Apart from that,

there are other motivating factors that can also disrupt the elderly's sleep patterns, such as comorbidities (arthritis), habitual behavior such as taking long naps, going to bed early, and waking up early in the morning. (Suryaningrum, 2023)(Utari, nd).

Poor sleep quality will make it easier for elderly people to experience a recurrence of hypertension, because poor sleep quality can change the stress hormone control and sympathetic nervous system, resulting in an increase in blood pressure. (Amanda et al., 2017). This is caused by changes in the structure of blood vessels such as narrowing of the lumen, and blood vessel walls become stiff and their elasticity decreases, thereby increasing pressure from the blood vessels. (Nurhapipa et al., 2020)(Dunggio et al., 2024). Based on the research results of Haviza & Sugianto (2014), it was found that the majority of those with poor sleep quality had hypertension blood pressure. If you experience short sleep duration or poor sleep quality, it can increase a person's blood pressure. Based on the results of Setiyorini's research (2014), it was found that poor sleep quality can have an effect on increasing blood pressure. If a person's sleep quality gets worse, it will increase the risk of increasing blood pressure.

Hypertension or high blood pressure is a medical condition that can have a negative impact on the quality of sleep of an elderly person (Kumala et al., 2017)(Nur Kholifah, 2021). Relaxation techniques are one of the cost-effective and easy-to-use methods for treating sleep disorders. Relaxation techniques, as a subjective stress management method, reduce anxiety levels, mood disorders, bodily discomfort and autonomic nervous system activity and can affect sleep quality. Benson relaxation therapy and progressive muscle relaxation are two non-pharmacological approaches that can help reduce stress, increase relaxation, and improve sleep quality. Findings from Bagheri's research. H et al in 2021 found that the application of BR and PMR techniques can result in an overall improvement in sleep quality among elderly patients who experience chronic diseases, namely CABG.

Benson relaxation therapy was developed by Dr. Herbert Benson, a cardiologist at Harvard Medical School. This method aims to induce a relaxation response in the body by combining deep breathing exercises, focusing attention, and repeating positive words. This therapy has been shown to be effective in reducing stress, lowering blood pressure, and improving sleep quality in different populations, including the elderly. Progressive muscle relaxation, on the other hand, was developed by Dr. Edmund Jacobson. This method involves a series of exercises aimed at reducing muscle tension and increasing awareness of the difference between muscle tension and relaxation. In progressive muscle relaxation, seniors are taught to gradually tighten and then relax certain muscle groups in their body. This exercise helps reduce physical and mental tension, and also improves sleep quality.

Poor sleep quality in elderly people with hypertension can worsen their hypertension condition, causing an increased risk of heart disease, cognitive impairment, and a general reduction in quality of life. Benson relaxation therapy and progressive muscle relaxation can be an effective and safe alternative in managing sleep and activity in elderly people with hypertension. Both therapies do not involve the use of drugs and can be easily learned by seniors (Setiawati et al., 2021)(Teten Tresnawan & Kep, 2023).

By using Benson relaxation therapy and progressive muscle relaxation regularly, seniors with hypertension can achieve better physical and mental relaxation, reduce stress, and improve the quality of their sleep. Additionally, this therapy can provide additional effects such as lowering blood pressure and improving overall well-being.

RESEARCH METHOD

Evidence Based Nursing (EBN) is defined as the synthesis and use of scientific findings (research results) from a randomized control trial study. Sakeett, et al (2009) say that EBN is a synthesis and use of scientific findings from various types of research, including randomized control trials, descriptive research, information from case reports and expert opinions. Dharma (2011) defines

EBN as an integration of the best research evidence that has gone through the review and synthesis stages which is used as a basis for nursing practice and provides benefits for recipients of nursing services.

The aim of Evidence Based Nursing is: a) To provide an objective and rational basis for nursing practice. One of the characteristics of the scientific method is that it is objective, which means that proof of truth is based on empirical facts. The research results will produce interventions that are objective and rational. In nursing practice, phenomena are found from clinical experience which must be proven scientifically and these scientific facts are then used as the basis for EBN nursing practice. Nursing actions carried out on the basis of scientific facts will produce quality nursing care. b) Provide evidence that nursing practice is based on the application of relevant and up to date scientific principles. By implementing evidence based nursing or nursing practice based on scientific evidence, it provides evidence that nursing practice is based on a strong scientific basis obtained through research. Nursing practice is based on principles of action that have been proven effective in overcoming problems experienced by patients. c) Train nurses' ability to think critically and rationally about a phenomenon or problem. The application of EBN will indirectly train a nurse's critical and rational thinking skills in dealing with problems or phenomena to find the right solution. Scientific sources are a solution to overcome this problem, one of which is the results of previous research. d) As one of the characteristics of professional nursing, every professional nursing practice action is always based on scientific evidence, not based on habit. As a professional in the health sector, you should base every action based on scientific facts from the results of research that has been carried out correctly and has been proven to provide benefits for patients. e) Improving the quality of nursing services. Indicators of this improvement are increased patient satisfaction, reduced treatment days and reduced treatment costs. These indicators can be achieved by implementing nursing procedures that have been scientifically proven to be effective.

As a basis for developing subsequent research questions. The effectiveness of applying research results in nursing practice is known through process evaluation and results evaluation. The evaluation results are used as a basis for developing subsequent research questions for relevant topics. So that nursing science will continue to develop.

The population involved in the implementation of EBNP is elderly people with hypertension who experience sleep disorders in Linggasari Village, Ciamis Regency. The sampling technique was carried out by purposive sampling. By using G-Power, a minimum sample size of 34 people was obtained. The sampling must comply with the following inclusion and exclusion criteria: a) Inclusion criteria, namely: elderly hypertensive patients aged over 60 years who experience sleep disorders, patients not using other complementary therapies, patients willing to be respondents. b) Exclusion criteria are: patients who are in critical condition, conditions of decreased consciousness, confused patients (not following orders), elderly hypertensive patients with comorbidities.

The sampling technique uses a purposive sampling technique which is based on certain considerations made by the researcher himself, based on previously known characteristics or properties of the population. (Rahmi & Husna, 2020) (Afandi et al., 2021). Researchers take samples based on sample criteria including inclusion criteria and exclusion criteria, where these criteria determine whether or not the sample can be used as research material. This research wants to test the difference in averages before and after the intervention, therefore the test used is the hypothesis test of paired average differences.

Implementation of Evidence Based Nursing Practice

Implementation strategy

The implementation of EBNP in Linggasari Village, Ciamis Regency goes through several stages: a) Outreach to groups of hypertensive elderly who experience sleep disorders who will carry out the implementation of EBNP, b) Implementation Team, the implementation of EBNP

involves residents assisted by cadres from the elderly group who were previously trained, who will be evaluated per week the results of the implementation of the EBNP.

The training session was made into 2 sessions over 2 days. Session 1 was carried out on cadre nurses, and the second session was carried out on day 2 on the elderly group and their families. Training sessions are carried out with face-to-face teaching with the help of structured MP4s including music and directions. Each session lasts 30-45 minutes. At the end of the training session, to ensure that participants performed the practice accurately, they were asked to perform the technique in the presence of the researcher. If there is no positive feedback, the training session will be readjusted until the elderly person understands the training. To increase compliance with relaxation exercises, families were also present at the training sessions, and they were also asked to support and encourage participants to carry out daily exercises. After the training session an MP4 video containing all the relaxation technique instructions and music was given to the participants. Participants were instructed to do the exercises at home twice a day, once during the day and once before bed (20 minutes each time) for four weeks. c) Tools and Materials (Instruments), the tools used in this application are: a) Inform Consent Sheet, Inform Consent containing the elderly's willingness to become respondents. Informed consent is filled in by the elderly accompanied by the resident. b) PSQI instrument, elderly sleep quality is assessed using the Pittsburgh Sleep Quality Index (PSQI) questionnaire. The PSQI questionnaire with a maximum number of questions of 9 questions is divided into seven components, namely sleep latency, sleep duration, sleep habit efficiency, sleep gain, use of sleep medication, hair loss dysfunction, and sleep quality. The scores from the 7 test components are added up to form one according to the assessment criteria: Good = 0, Good = 1-7, Good = 8-14, and Very good = 15-21. PSQI has been validated by the University of Pittsburg with a sensitivity of 89.6% and a specificity of 86.5%. The reliability of this questionnaire has also been tested with a Cronbach's AI value of 0.83. c) MP4 video. d) Leaflet

Implementation of EBN

The implementation of the Evidence Base Nursing Practice was carried out in the Linggasari Village community, Ciamis Regency. The number of respondents who implemented EBNP was 35 elderly people with hypertension. In terms of implementation, no obstacles were found in implementing the intervention to patients. Previously, the resident looked at the patient data to select respondents according to the required criteria. After obtaining potential respondents, the respondents were given informed consent provided by the researcher and filled in by the patient or patient's family. The Progressive Muscle Relaxation Exercise intervention combined with Benson is carried out in stages and in a structured manner every day with the team and cadres responsible for the patient after it has been agreed that the process will be implemented. Before carrying out progressive muscle relaxation exercises combined with Benson, each respondent was first assessed or assessed for their sleep quality using PSQI by residents to determine the sleep quality of elderly people with hypertension.

Participants enrolled in the intervention group were invited to a room for relaxation training. Relaxation training is carried out by residents as specialist students who already understand and have studied progressive and Benson muscle relaxation techniques. Training sessions are conducted with face-to-face teaching with the help of structured videos that include music and directions. Each session lasts 30-45 minutes. At the end of the training session, to ensure that the elderly practiced accurately, the elderly who had taken part in the training session were asked to perform the technique in front of the researcher. If there is no positive feedback, another session is arranged to bring their learning to the desired level. To increase compliance with relaxation exercises, families were also invited to attend training sessions, and they were also asked to support and encourage participants to carry out daily exercises. After the training session, a video and leaflet containing all the relaxation technique instructions were given to the participants. In addition, participants were ensured to have a cellphone and leaflets and were asked to do

relaxation exercises with the help of the video twice a day, once during the day and once before bed (20 minutes each time). for four weeks.

Each week, researchers telephoned the sample and provided necessary instructions about exercise, resolved their potential problems during exercise, and assessed any complications resulting from the intervention. Additionally, the researcher's telephone number was provided to the participants and they were permitted to contact the researcher if they had any problems, complications or questions during the intervention program. To assess participants' adherence to relaxation exercises, a checklist was given to them and they were asked to mark their daily exercise performance. A list of participants was received at the end of the intervention.

Assessment is carried out in stages and in a structured manner for each patient before Benson relaxation is carried out combined with progressive muscle relaxation. Progressive Muscle Relaxation exercises combined with Benson are carried out over a period of 15-20 minutes. Exercises were carried out 2 times a day for four weeks. After the fourth week, another sleep quality assessment was carried out in hypertensive elderly whether there was a change or not in sleep quality using PSQI. Data from the assessment sheet was processed using SPSS software in 2016. During the implementation of EBNP, resident nurses were involved in implementing the intervention directly with trained cadres. Implementation of the intervention Progressive muscle relaxation exercises went smoothly without any significant obstacles. Overall there were no negative effects on patients who underwent the intervention.

RESULTS AND DISCUSSIONS

Lanisa Characteristics Data

The characteristics of the elderly in the form of age, gender, age, marital status, education and employment are presented in the following table:

Table 1. Characteristics of the elderly (n=35)

Characteristics	Frequency	Presentation
Gender		
Man	6	17.10%
Woman	29	82.90%
Age		
Early Elderly	28	80%
Middle Elderly	7	20%
Status		
Marry	24	68.60%
Widow	11	31.40%
Education		
elementary school	31	88.60%
junior high school	3	8.60%
SENIOR HIGH SCHOOL	1	2.90%
Work		
IRT	28	80%
Laborer	5	14.30%
Doesn't work	2	5.70%

In the table above, it can be seen that almost all of the elderly are women, 29 elderly (82.9%), with ages in the early elderly range, 28 elderly (80%). Of the respondents, it was found that the majority of elderly people were married, namely 24 people (68.8%) and almost all respondents had an educational background of elementary school graduates, 31 people (88.6%) and 28 people (80%) worked as housewives.

Statistical Test Result Data

The results of the bivariate analysis show the data normality test which is shown in the following table

Table 2. Data normality test results

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Pre-test	,169	35	,013	,951	35	,118
Post-test	,172	35	,010	,954	35	,153

Based on the results of the normality test using Shahiro Wilk and Kolmogorov on a sample of 35 respondents, it showed that the data was normally distributed (p value > significance 0.05), so statistical tests on the differences between pre-intervention and post-intervention were carried out using the Paired t-Test.

Table 3. Distribution of significance values

Progressive muscle relaxation exercise intervention and benson therapy						
	Mean	N	Std. Deviation	Std. Error Mean	Correlation	Sig.
Pre-tet	7.06	35	1,909	0.323	0.931	0,000
Post-test	5.31	35	1,728	0.292		

The results of statistical tests can be explained that there is a significant difference in the results of assessing the sleep quality of the elderly before and after progressive muscle relaxation and Benson exercises. The average result obtained before was 7.06 (SD 1.9909) and after the intervention was 5.31 (SD 1.728) with a p -value of 0.000 ($P < 0.05$).

Table 4. Distribution of mean values of sleep quality components
progressive muscle relaxation exercise intervention and benson therapy

PSQI components	Pre-test		Post-test		Mean Difference
	m	elem enta ry scho ol	m	elem enta ry scho ol	
Sleep latency	0.89	0.63	0.8	0.68	0.09
Sleep duration	1.26	1.01	0.77	0.77	0.49
Sleep efficiency	0.11	0.53	0.029	0.117	0.081
Sleep disturbance	1.17	0.58	1.11	0.32	0.06
Use of sleeping pills	0.058	0.23	0.029	0.17	0.029
Daytime dysfunction	1.57	0.92	1.31	0.79	0.26
Sleep quality	1.46	0.7	0.8	0.4	0.66
Overall Sleep Quality	5,6	2	4.86	1	0.74

From the table above, it can be seen that there was a decrease in the average of all components of sleep quality in the elderly after the relaxation exercise intervention was carried out, where the highest decrease occurred in the average decrease in sleep quality from before 1.46 to 0.8 after the intervention.

Discussion

In the results of the application of EBNP, it was found that the majority of hypertensive elderly were female with a total of 29 people (82.90%) while there were 6 men (17.1%). The results of the application of EBNP are in line with previous research conducted by Faryda Ackas, et al (2015) regarding the relationship between sleep quality and the degree of hypertension in the elderly in the work area of the Posyandu Healthy Homes at Mercy Bantul. The results of the study showed that the majority of genders were women at 62% and also research conducted by Fredy, et al (2020) in Buku Village, Mapili District, Polewalu Mandar Regency, it was obtained that the majority of elderly people were female, 82.8%. This could be because women are very at risk of developing hypertension in old age due to hormonal changes. In women, the hormone estrogen

can protect against cardiovascular disease. Estrogen hormone levels will decrease after menopause. Low estrogen levels can also increase blood viscosity which can cause the risk of heart disease, apart from that. Apart from that, a study also stated that women's cholesterol is higher than men's due to differences in lifestyle. Lifestyle and activities are important in determining the risk of hypertension in the elderly. In other research, it was found that women have more fat, namely around 20-25% compared to men who have 15-20% fat. If high density lipoprotein (HDL) cholesterol levels are low and low low density lipoprotein (LDL) cholesterol levels will affect the process of atherosclerosis occurs and causes blood pressure to increase (Kalangi, 2015). This could be the reason why women are more at risk than men (Setyaningrum, 2024). This is confirmed by the results of previous research that the sleep quality of elderly people in rural areas is significantly related to female gender (Novitasari & Aulia, 2019) (Dulay & Sidabutar, 2020).

In the EBNP results, it can be seen that 28 elderly people who experience hypertension are aged 60-74 years (80%). This is in line with Susanto and Amanda's research. Where the majority of hypertension sufferers in the elderly experience sleep disorders based on age characteristics, the majority of respondents are included in the elderly category so that in this age range the elderly are only starting to experience sleep disorders in the early stages. Previous research states that sleep patterns change with age (Stephens & Gatchel, 2018). Nugroho (2014), explains that as a person gets older, the problems they face also increase, where these problems can take the form of physical changes such as a decrease in cell function, hearing system, vision system, cardiovascular system, temperature regulation system (body temperature), respiratory system, gastrointestinal system, endocrine system, skin system and musculoskeletal system which influence the mental and social conditions of an elderly person.

The results of this application also found that the majority of respondents had elementary school education. A total of 31 respondents (88.6%) of whom had elementary school education, this is in line with research by Susanto (2022) where the majority of elderly people, namely 69.2%, had a primary education background. Education has an influence on the incidence of hypertension. A person's knowledge of health problems is usually in line with a person's level of education. People who have higher education usually have a greater level of knowledge about health. The hope is that when someone has sufficient understanding of something, they will have good awareness in maintaining their health.

Judging from the occupational category of the elderly in the implementation of EBNP, the majority are housewives, namely 80%. For a housewife, most of her activities are only carried out in the home environment. Elderly people who have high daily activities or work and lack of physical activity, irregular eating and sleeping schedules are risk factors for increasing chronic diseases in the elderly such as hypertension. Based on the results of Adam's research (2019), elderly people who have less activity and suffer from hypertension are higher, namely 87.5%, compared to elderly people who have good activity but suffer from hypertension, namely 41.4%.

If we look at marital status, most elderly people are still married, 68.6%. Because if you look at the age of the elderly, they are still at the elderly age. However, disharmonious marital status can contribute to poor sleep quality due to lack of family support (Susanto, 2022).

The application of EBNP was carried out twice a day for four weeks. The intervention of progressive muscle relaxation training and Benson therapy for hypertensive elderly people began by providing relaxation training by researchers as specialist students who had previously studied relaxation techniques from research journals whose validity had been tested. The training sessions were conducted in 2 sessions with face-to-face teaching with the help of videos that included music and directions. Each session lasts 30-45 minutes. The first session was carried out on cadres caring for hypertensive elderly and the second session was carried out on all hypertensive elderly who were respondents in the implementation of this EBNP. At the end of the training session, the resident always ensures that the participants carry out the practice correctly, they are asked to demonstrate the progressive and Benson muscle relaxation techniques in front of the researcher

until the feedback from the participants is positive, namely they can understand and demonstrate the ROP and RB exercises correctly. To increase the elderly's compliance in carrying out this relaxation exercise, the researchers also invited the elderly's family and were asked to support and encourage the participants to carry out the exercise twice a day. After the training session, the elderly accompanied by their family are provided with a video and leaflet containing progressive muscle relaxation and Benson movements in mp3 mode which can be opened on a cellphone or computer/laptop to encourage the elderly to do the exercise twice a day, namely once during the day and once before going to bed for 20 minutes each time you exercise. Before the training session started, the researchers first measured the sleep quality of the elderly using the PSQI instrument as pre-test data, then after four weeks of training the elderly had their sleep quality measured again as post-test data.

Every week, the researchers together with trained cadres called the participants and provided necessary instructions about the exercises, resolved their potential problems during the exercises, and assessed any complications due to the intervention. In addition, the telephone number of one of the researchers (specialist student) was provided to the participants and they were allowed to contact the researcher if they had any problems, complications or questions during the intervention program.

The progressive muscle training intervention combined with Benson given to the elderly is a movement consisting of: the patient sitting or lying on his back in a comfortable position in a quiet room with dim light. Next, tighten and relax muscle groups sequentially from head to toe. The elderly client is trained to stretch the muscle tightly and maintain it for 5 seconds and then quickly and completely relax it for 10 seconds until all feelings of relaxation enter the entire body. Meanwhile, he inhales deeply through his nose and exhales through his mouth and focuses on the emotions experienced during muscle contraction and relaxation. After that, the elderly are instructed to do Benson relaxation, namely the patient is instructed to sit in a comfortable position in a quiet room with dim light, close their eyes slowly, relax the muscles from the feet to the face, stay relaxed, breathe through the nose, and be aware of breathing. . seniors exhale gently through their mouths while, based on their respective belief systems, repeating words or expressions silently. Elderly people are told to breathe normally and comfortably and try to keep their muscles relaxed. Then, the elderly are told to open their eyes but not stand for several minutes.

Then, in the fourth week, the elderly had their sleep quality measured again using the PSQI which contains questions to evaluate sleep quality. The PSQI contains 19 items that determine subjective sleep quality over the past month. It has seven subscales including sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbance, use of sleeping medication, and daytime dysfunction. Subscale weights are weighted evenly on a scale from 0 (no difficulty) to 3 (severe difficulty), giving a global score of 0-21. A total PSQI score > 5 indicates poor sleep quality. The implementation process was carried out on 35 elderly people who had the required criteria and after the intervention was completed, the result was a change in sleep quality with a decrease in the mean of 1.75. It was proven that the application of progressive muscle relaxation and Benson interventions in hypertensive elderly people had a significant effect on improving sleep quality. In the application of this EBNP, subjective sleep quality, sleep latency, sleep duration, sleep disturbance, sleep dysfunction, and overall sleep quality in the elderly improved significantly after four weeks of intervention.

Sleep quality is an important sleep characteristic displayed by a person which includes various domains such as assessment of the length of sleep, disturbances that occur during sleep, latent period during sleep, sleep dysfunction during the day, sleep efficiency, sleep quality, and medication consumption. Sleep. If one of the seven domains above experiences a disturbance, it can cause a decrease in sleep quality (Ouellet & Rohmawati, 2012). Elderly people who suffer from hypertension have excessive anxiety so they experience emotional disorders and sleep disorders

which will affect the quality of sleep. As people get older or aging, their sleep patterns will experience distinctive changes that differentiate them from younger people.

Sleep disorders cause many physical and mental consequences such as decreased concentration, memory impairment, and general weakness in the elderly. In implementing EBNP, the average score obtained before doing the relaxation training was 7.06 and after the relaxation training the average was 5.31. This is in line with Habiolah's research in 2019 which found that the average score of subjective sleep quality in the intervention group increased significantly after relaxation program.

When relaxing calmly, relaxed and fully concentrating on the tension and relaxation of the muscles trained for 30 minutes, the secretion of CRH (corticotropin releasing hormone) and ACTH (adrenocorticotrophic hormone) in the hypothalamus decreases. A decrease in the secretion of these two hormones causes sympathetic nerve activity to decrease so that the release of adrenaline and noradrenaline is reduced, as a result there is a decrease in heart rate, blood vessels widen, blood vessel resistance decreases and the heart pump decreases so that the heart's arterial blood pressure decreases (M. Ilham, Armina, Hasyim Kadri, 2019).

With poor sleep quality, the degree of hypertension increases, this is because the hormones that regulate blood pressure balance do not work optimally, resulting in loss of sleep which causes the nervous system to become hyperactive which will then affect the entire body system including the heart and blood vessels. Short sleep duration, apart from increasing the average blood pressure and heart rate, can also increase the activity of the sympathetic nervous system and stimulate physical and psychosocial stress, ultimately increasing persistent hypertension.

This progressive muscle relaxation training technique is a regulation of the human nervous system, namely the central nervous system and autonomic nerves. The central nervous functions as a center for controlling desired movements, while the autonomic nerve functions to control digestive and cardiovascular functions. The autonomic nervous system consists of two subsystems whose work is opposite to each other, namely the sympathetic and parasympathetic nerves. The sympathetic nerves work to increase the stimulation that stimulates the body's organs. When the elderly experience tension and anxiety, it is the sympathetic nerves that work so that the heart rate, blood pressure, increases, and the number of breaths, blood flow to the muscles and pupil dilation increase. Meanwhile, the parasympathetic nerve is responsible for reducing all body functions whose functions are increased by the sympathetic nervous system so that the activity of the body system will begin to decrease, heart rate, respiratory rate and blood pressure will also decrease due to relaxed feelings (Irawan, 2018).

The application of EBNP resulted in results showing that the progressive muscle relaxation and Benson techniques applied to 35 hypertensive elderly people found significant results on sleep quality. The sleep quality of the elderly shows significant changes as measured using the PSQI assessment sheet. In its implementation, it was found that the average sleep quality component score decreased, including the average sleep latency decreased by 0.9, sleep duration after intervention decreased by 0.49, sleep efficiency decreased by 0.081, sleep disturbances decreased by 0.06, and use of sleeping medication decreased by 0.029. Daytime dysfunction decreased by 0.26 and average sleep quality experienced the largest decrease, namely 0.66.

These results suggest that Benson's and progressive muscle relaxation exercises can serve as a practical and effective way to elicit improved sleep quality among hypertensive elderly living in the community. These positive effects can play an important role in improving the quality of life among this vulnerable group of people. Therefore, this cost-effective and simple technique can be used by the elderly together with sleeping pills to improve the quality of their sleep so that good quality sleep will be able to control blood pressure well. Most elderly people who have poor sleep quality have an increasing degree of hypertension, this is because the hormones that regulate blood pressure balance do not work optimally, resulting in loss of sleep which causes the nervous system to become hyperactive which then affects the entire body system including the heart and blood

vessels. Short sleep duration, apart from increasing the average blood pressure and heart rate, can also increase the activity of the sympathetic nervous system and stimulate physical and psychosocial stress, ultimately increasing persistent hypertension. (Dewi & Susilo, 2021) (Prasetya, 2024).

CONCLUSION

Basically, the implementation of progressive muscle relaxation training interventions combined with benson in hypertensive elderly people is very possible to be carried out in the community. Based on the results data obtained, it can be seen that there is a decrease in the average sleep quality score from 7.06 to 5.31 based on the PSQI instrument assessment. Implementation of the intervention: Progressive muscle relaxation exercises combined with Benson for hypertensive elderly people can be done twice a day for four consecutive weeks. The application of progressive muscle relaxation and Benson interventions in hypertensive elderly has proven to be effective in hypertensive elderly to help improve sleep quality, this is proven by a decrease in degree or scale after carrying out this intervention.

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