Analysis of Nursing Care for the Elderly with Hypertension Using the Practice of Progressive Muscle Relaxation Therapy: A Case Study

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Abstract

Background: Hypertension attacks more in middle age or the elderly. Non-pharmacological therapy is needed that it safe and easy to apply in providing nursing care as an effort to control Hypertension in the elderly. Progressive Muscle Relaxation (PMR) therapy can be used as an effective and safe nursing action.

Objective: This case study aims to analyze the application of progressive muscle relaxation therapy in providing nursing care for the elderly with hypertension.

Methods: This study used case study design. The participant was an elderly with Hypertension. Instrument used was a sphygmomanometer and PMR as a systematic technique to achieve a state of relaxation, a method that is applied through the application of a progressive method with gradual and continuous exercise on skeletal muscles by tensing and relaxing them which can restore muscle feeling so that the muscles relax, in this study, for 3 days with a length of 15 minutes on each day.

Results: This study uses a case study. The results showed that the change in blood pressure before and after being given PMR decreased, from 170/110 to 158/100 mm Hg. This also has an impact on all client complaints so that they can be resolved, although not completely. The application of PMR therapy in nursing practice can be used as an effort to control hypertension naturally.

Conclusion: There is that PMR therapy can be applied in providing nursing care to the elderly with Hypertension because it is effective in lowering blood pressure.

Keywords:
Elderly, Case Study, Hypertension, Progressive Muscle Relaxation

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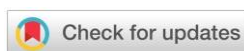
INTRODUCTION

Non-communicable diseases or NCDs are the main cause of death globally. The high prevalence of NCDs has an impact on decreasing productivity and disrupting the fulfillment of daily activities. Concern for the increasing prevalence of NCDs has promted the birth of various initiative at the global and regional levels for the control of NCDs. In reducing NCDs cases through controlling risk factors in the community, various efforts have been made to prevent and control NCDs. Efforts to prevent and control NCDs in Indonesia itself are in the form of integrated coaching posts or posbindu. Posbindu NCDs is the participation of the community in carrying out early detection and monitoring of NCDs risk factors which are carried out in an integrated routine and periodically as an effort to control various types of NCDs. NCDs risk self-detection efforts from this posbindu program can be applied to control various kinds of NCDs diseases (P2PTM, 2019).

NCDs includes many types of diseases including Hypertension, Stroke, Coronary Heart Disease, Cancer, Diabetes Mellitus, and ARI. Heart and blood vessel disease (cardiovascular system disease) is a major problem for NCDs in developed and developing countries where hypertension is the number 1 cause of death in the world every year (Kemenkes RI, 2019). Hypertension attacks more in middle age or the elderly (elderly). where based on the 2018 Riskesda data, hypertension suffered the most by age >55 years old, which was 55.2% (Riskesdas, 2018).

Hypertension that occurs in the elderly requires immediate treatment because Hypertension cannot be cured and can only be controlled. Moreover, uncontrolled hypertension might relate to further complication for elderly, including fraily and deterioration of cognitive function (Hastuti et al., 2021). Hence, the management of Hypertension in the elderly itself needs to consider various things including risk factors and complications. Pharmacological therapy (Hypertension drugs) is not recommended for the elderly because continued use of drugs can cause complications. Non-pharmacological techniques are more recommended in overcoming Hypertension because they do not cause technical and pharmacologic complications that can be done, including progressive muscle relaxation techniques, warm water foot soaks, Hypertension exercises and other non-pharmacological therapies (Aspiani, 2016).

Of several non-pharmacological therapies that are considered effective in lowering blood pressure in the elderly with Hypertension is progressive muscle relaxation therapy. According

to research of Sabar (2020), the results show that Progressive Muscle Relaxation (PMR) exercise can significantly reduce systolic blood pressure ($p = 0.027$) and also lower diastolic blood pressure ($p = 0.041$). This is supported by research by Rahmawati (2018) which shows that Progressive muscle relaxation therapy significantly reduces blood pressure in patients with hypertension so that this therapy can be used as an alternative therapy as non-pharmacological therapy in lowering blood pressure for patients with hypertension.

In addition to being more effective in lowering blood pressure, progressive muscle relaxation therapy includes the cheapest relaxation method, reduces expenditure, is practical, efficient and easy to do, has no side effects, and makes the mind feel calm and the body becomes more relaxed (Valentine, et., al., 2014). Progressive muscle relaxation can also help reduce stress, lower blood pressure, and increase immunity so that functional status and quality of life improve (Karang dkk, 2017). Based on some of the things above, it proves that progressive muscle relaxation is effective and safe in lowering the blood pressure of the elderly so that it can be applied in the management of the elderly with Hypertension. Ability to manage chronic disease by the patient themselves is one of good outcomes from nursing intervention (Elon et al., 2021). Thus, to manage Hypertension in the elderly, the role of nurses as caregivers is very important. In the implementation of maintenance interventions, applying protective muscle relaxation therapy exercises that are safe and minimal side effects are carried out as an effort to control Hypertension.

In an effort to apply progressive muscle relaxation therapy as an effort to control Hypertension in providing nursing care, the author takes a case study of one elderly person from the work area of the Tarogong Public Health Center, namely Mrs. O, because based on a preliminary study at the Tarogong Health Center itself, many elderly people with Hypertension are aged >65 years.

Based on preliminary studies, efforts to control Hypertension have been carried out by taking Hypertension drugs to lower blood pressure, even though the continuous use of these drugs can be dangerous because of the risk of causing complications. Based on the above background, researchers are interested in conducting an "Analysis of Nursing Care for the Elderly with Hypertension Using the Practice of Progressive Muscle Relaxation Therapy".

METHOD

Study Design

This research is a case study by educting anamnesis, observation, and physical examination, as well as analyzing the theory and practice related to the nursing care provided based on an Evidence Based Practice (EBP).

Sample/ Participants

The participant in this study was an elderly person with Hypertension, namely Mrs.O. Participants, Mrs. O lives at her house, at Kampung Babakan Jambe, Pasawahan Village, the working area of the Tarogong Public Health Center.

Instrument

This study used two instruments: a sphygmomanometer to check blood pressure and then, a standard operating procedure for the implementation of progressive muscle relaxation therapy.

Data Collection

To determine which participants will be treated as patients, the researchers asked for data from the Tarogong Health Center to obtain data on hypertension patients. Then one participant was selected to be given nursing care. The researcher conducts a meeting contract with the patient by first explaining the purpose of providing nursing care. The researcher asked the client's willingness to be invited to work together when the care was carried out. Participants in informed consent.

Data was collected through (1) interviews to obtain information or verbal information, especially those related to health history and daily activities; (2) Observation is a planned procedure that includes seeing, observing, and recording a number of certain activities or certain situations that exist with health problems involving physical, mental, social and spiritual aspects; (3) Physical examination is carried out using the Inspection, Palpation, Percussion, Auscultation (IPPA) approach, namely examination by looking at the body parts being examined through observations of size, shape, position, and body symmetry. Palpation is a technique that uses the sense of touch in the form of hands and fingers to collect data such as

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temperature, turgor, shape, humidity, vibration and size. Percussion is an examination by tapping certain parts of the body surface to compare with other parts of the body (left-right) with the aim of produce sound, Auscultation is a physical examination performed by listening to the sound produced by the body using an instrument. a stethoscope; (4) Documentation is done by searching for data in the form of medical records, literature, diagnostic examinations, journals and other relevan data.

The stages of giving PMR therapy include 8 steps, namely: (1) Sitting or lying in a comfortable room and away from noise; (2) Tighten the leg muscles for 5 seconds and then relax the muscles for 5 seconds, extending the toes so as not to cramp; (3) Tighten and relax the calf muscles for the same duration of time; (4) Tighten and relax the muscles of the hips and buttocks; (5) Do the same method on the abdominal and chest muscles; (6) Tighten the shoulder muscles and then relax; (7) Tighten the facial muscles by frowning while closing your eyes for 5 seconds, then relax the facial muscles for 5 seconds; (8) Relax your hand muscles by clenching your fists for 5 seconds and releasing your fists slowly for 5 seconds.

Data Analysis

Data analysis was carried out in 3 stages, namely: (1) Data reduction, namely the process of selecting data, focusing on simplification of data, abstracting data, and transforming rough data that emerged from written notes in the field. This data reduction activity can be carried out through: strict data selection, making summaries, and classifying the data into a pattern that is broader and easier to understand; (2) Data presentation, namely presenting data in the form of short narrative descriptions to understand what happened, plan further work based on what is understood; (3) Conclusions, namely from the data presented, then the data is discussed and compared with the results of previous studies and theoretically with health behavior, conclusions are drawn using the induction method, the data collected is related to assessment, diagnosis, planning, action, and evaluation

Ethical consideration

The ethics that underlie the preparation of this case study consist of: (1) Informed Consent, where the subject must obtain complete information about the purpose of the research to be carried out, has the right to freely participate or refuse to become a participant. In the informed

consent it is also necessary to state that the data obtained will only be used for scientific development; (2) Anonymity, the subject has the right to request that the data provided must be kept confidential which is guaranteed by obscuring the identity of the participant or being anonymous. (3). Confidentiality, the confidentiality given to informants is guaranteed by researchers (Nursalam, 2011).

The ethical principle applied in providing nursing care to Mrs. O with progressive muscle relaxation therapy is benefit. Beneficience is doing good, just doing something good. This principle requires nurses to do good things so as not to make mistakes and crimes. Example: a nurse advises a client on an exercise program to improve general health. Likewise with the provision of nursing care to Mrs. O, the authors provide progressive muscle relaxation exercises to reduce blood pressure in clients.

RESULTS

1. Assessment

The client is an elderly 79 year old woman who lives in a village called Kampung Babakan Jambe, Pasawahan Village, Tarogong Kaler District, Garut Regency. The client is a Muslim, works as a trader. Based on the results of the assessment on Mrs. O, it was found that the main complaints were headache and neck pain, pain was felt on a pain scale of 5 (0-10), pain decreased when the client sat and increased if the client stood for a long time or was active. In addition, clients also complain of difficulty sleeping and often woke up at night, the client slept 4 hours per day; and sometimes feel dizzy when walking. Mrs. O walks with the help of a cane because his left leg sometimes hurts.

The results of the blood pressure examination were 170/110 mmHg, fallen 3 months ago and says his vision is blurry. The results of the study of family health history, it was found that the client's mother also suffered from hypertension. The client said he had no experience with hypertension, did not know about hypertension, and many clients asked about hypertension and how to lower blood pressure naturally without anti-hypertension drugs.

2. *Nursing Diagnoses*

After conducting the assessment, the author began to formulate nursing problems. The following formulation of nursing diagnoses that appear on the client:

a. Acute pain b.d increase in blood pressure d.d client complains of pain in the head and neck, the client looks grimacing and the client's blood pressure is 170/110 mmHg. The authors

raised this problem because at the time of the assessment, major data were found in the form of clients complaining of headaches and neck pain, throbbing pain with a pain scale of 5 (0-10). Pain decreases if the client sits back and increases if the client stands for a long time or is active.

b. Disorders of sleep patterns related to headaches d.d the client says it is difficult to sleep and is often awake at night, the client sleeps 4 hours per day, blood pressure is 170/110 mmHg. The authors raised this problem because at the time of the assessment it was found that the client complained of difficulty sleeping and was often awake at night because of pain.

c. Knowledge deficit b.d lack of exposure to information d.d client says he doesn't know about hypertension, clients ask a lot of questions about hypertension and how to lower blood pressure. The authors raised this issue because at the time of the study it was found that the client did not know about hypertension and the client asked about how to lower blood pressure.

d. Risk for falls related to retention of cerebral blood vessels d.d client complains of headache, aged >65 years (79 years), had fallen 3 months ago, blurred vision. The authors raised this problem because during the assessment it was found that the client's data complained of pain, blurred vision, FR > 6 inches, TUG results 22 seconds, the house looked a bit dark and scattered

3. Nursing Care Plan

At the intervention stage, the authors found difficulties and obstacles. This is because the nursing diagnoses that exist in the theory partially do not appear in this case, so that the planning already contained in the theory cannot be implemented in all cases in the field. Because if the plan is not in accordance with the problems experienced by the client, the plan will not improve the conditions experienced by the client optimally. Therefore, the plan that the author formulates is adjusted to the nursing diagnoses obtained in the case in the field. The steps in planning are adjusted to the guidelines from the Indonesian National Nurses Association (PPNI) with the books used, namely the IDHS, SLKI, and SIKI to determine nursing diagnoses, nursing goals and objectives, nursing plans and to implement nursing plans and evaluate nursing actions given to the client.

The main diagnosis is acute pain by monitoring the response, pain scale, factors that aggravate and relieve pain, assess nonverbal pain responses, and encourage clients to do progressive muscle relaxation so that blood pressure drops so that pain is reduced. The second

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diagnosis is a sleep pattern disorder by identifying sleep activity patterns, sleep-disturbing factors, and recommending avoiding foods/drinks that interfere with sleep. The third diagnosis is knowledge deficit by identifying readiness and ability to receive information, providing health education materials and media, scheduling health education according to agreement, and providing opportunities to ask questions. The fourth diagnosis is the risk of falling by identifying risk factors for falling, environmental factors that increase the risk of falling, recommending adjusting the lighting of the room, recommending using non-slip footwear and recommending concentrating on maintaining body balance.

The intervention performed on Mrs. O to reduce blood pressure is by progressive muscle relaxation. The procedure carried out consists of 15 steps. Progressive muscle relaxation has been proven by many studies. effective in lowering blood pressure in the elderly. This is proven when researchers apply progressive muscle relaxation therapy in the elderly with hypertension, there is a decrease in blood pressure in Mrs. O, there is a decrease in blood pressure and is able to reduce the pain experienced by the client.

4. Nursing Implementation

At this stage the authors carry out implementation in accordance with the intervention plan that has been determined together with the client. The implementation carried out on the client has succeeded in reducing the disruption in meeting the client's needs although it is not completely resolved because of many factors that influence it. But the client shows a change in conditions for the better.

Progressive muscle relaxation therapy in this study was intended to reduce blood pressure in Mrs. O which was proven that after the client was given progressive muscle relaxation therapy exercises for 3 days with each meeting for 15 minutes, there was a significant decrease in blood pressure which was initially 170/110 mmHg. to 158/100 mm Hg. The impact of the decrease in blood pressure resulted in a decrease in the pain scale from 5 to 4, the client's sleep became more restful and rarely woken up. While the implementation for the problem of nursing knowledge deficit, is done by providing health education about hypertension and its control. Meanwhile, for the nursing problem of falling risk, it is recommended that the client use anti-slip sandals, increase room lighting and modify the environment so as not to cause a potential trip that can cause the risk of falling.

5. Evaluation

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The results of the evaluation of the four nursing problems that arise in Ny. After implementation for 3 days with 15 minutes for each administration, namely for acute pain problems, sleep disturbances, knowledge deficits, and risk of falling, the results showed positive results, although only some of the criteria could be completed. After doing progressive muscle relaxation therapy, the client's blood pressure dropped from the initial examination of 170/110 mmHg to 158/100 mmHg on day 3; the client's headache complaints decreased slightly from a pain scale of 5 to 4; complaints of decreased sleep patterns even though they can only sleep for about 6 hours but the client can sleep soundly without being awake; the knowledge deficit has been partially resolved, as evidenced when asked about hypertension disease was able to answer even though there were some who forgot and still did not know; only the problem of the risk of falling that can be completely overcome is proven by the client saying he already has rubber sandals, will always wear them when walking and be careful when walking so as not to fall.

DISCUSSION

Assessment of Mrs. O with hypertension using preliminary study techniques and direct anamnesis to the client and the client's family, the assessment starts from the client's identity, physical examination through health and family medical history.

1. Assessement

The study was found that Mrs. O's complaints were headaches, neck pain and complaints of difficulty sleeping and sometimes felt dizzy when walking and walking using a cane because her left leg sometimes hurt. when the blood pressure examination was carried out, the results were found to be another blood pressure or 70/10 mmHg, this is in accordance with the signs and symptoms according to Ardiansyah (2012) that signs and symptoms in patients with Hypertension are Headaches, blurred vision, swings, unsteady steps, nocturia and edema.

At the time of examination of the family medical history, it was found that the client's late mother also suffered from Hypertension. This is in accordance with Asfiani's (2016) theory that Hypertension can occur in people who have genetic offspring with hypertension sufferers. From the case, data also obtained, namely in Mrs. O there are risk factors for Hypertension, one of which can be caused by age because Mrs. o's age is currently 79 years and heredity factors. Classification of Hypertension based on graphs according to Nurarif (2016) based on systolic and diastolic blood pressure Mrs. O is in the medium grade 2 category 170/110.

2. Nursing Diagnoses

The formulation of nursing diagnoses includes 3 elements, namely Problem (P), Etiology or cause (E) and Sign-Symptom (S). The nursing problems that arise in Mrs. O based on the results of the assessment, namely: (1) Acute pain, this problem was raised because at the time of the assessment data were found in the form of the main complaint of headache, neck pain, throbbing pain on a scale of 5 (0-10). This is caused because hypertension causes systemic blood vessel vasoconstriction resulting in an increase in cerebral blood vessels that compress brain fibers and cause acute pain; (2) Disorder of sleep patterns was removed because the data found that the client complained of difficulty sleeping and often woke up at night. This is because the headache felt by the client presses the nerves so that it interferes with the client's sleep; (3) Knowledge deficit, this problem was raised because at the time of the study it was found that the client did not know about Hypertension and always asked about how to lower blood pressure, it might also be because changes in health status affected the lack of exposure to information; (4) The risk of falling is raised because at the time of the assessment, data obtained from the client complaining of pain, blurred vision, FR > 6 inches, TUG results 22 seconds, the house looks a bit dark and scattered, all of these factors can contribute to the possibility of the client to fall.

3. Nursing Care Plan

The plan that the author formulated is in accordance with the nursing diagnoses obtained in cases in the field. the steps in planning are adjusted to the guidelines of the Indonesian National Nurses Association or Persatuan Perawat Nasional Indonesia (PPNI) with the books used, namely sdki slki and siki to determine nursing diagnoses, nursing goals and objectives, nursing plans and to implement nursing plans and evaluate nursing actions given to the client.

The main diagnosis is an acute search by monitoring the response to the pain scale, factors that aggravate and relieve pain, assessing the response, verbally and destroying the fabric, doing illustrations or progressively so that blood pressure drops so that pain is reduced. The intervention carried out on Mrs.O for lowering blood pressure is by progressive muscle relaxation. The procedure carried out consists of 15 steps. Progressive muscle relaxation has been proven by many studies to be effective in lowering blood pressure in the elderly. This was proven when the researchers applied progressive muscle relaxation therapy in the elderly with Hypertension, there was a decrease in blood pressure in Mrs.O.

4. Nursing Implementation

In this stage, the authors carry out the implementation in accordance with the interventions that have been planned with the client. Implementation is aimed at reducing blood pressure in Mrs.O with progressive muscle relaxation therapy for 3 days for 15 minutes each. Progressive muscle relaxation is a systematic technique to achieve a state of relaxation, a method that is applied through the application of a progressive method with gradual and continuous exercise on skeletal muscles by tensing and relaxing them which can restore muscle feeling so that the muscles relax and can be used as a treatment to lower blood pressure in patients with essential hypertension (Ramba, et al, 2015).

The stages of giving PMR therapy includes 8 steps, namely: (1) Sitting or lying in a comfortable room and away from noise; (2) Tighten the leg muscles for 5 seconds and then relax the muscles for 5 seconds, extending the toes so as not to cramp; (3) Tighten and relax the calf muscles for the same duration of time; (4) Tighten and relax the muscles of the hips and buttocks; (5) Do the same method on the abdominal and chest muscles; (6) Tighten the shoulder muscles and then relax; (7) Tighten the facial muscles by frowning while closing your eyes for 5 seconds, then relax the facial muscles for 5 seconds; (8) Relax your hand muscles by clenching your fists for 5 seconds and releasing your fists slowly for 5 seconds. This progressive muscle relaxation therapy technique is expected to lower Ny. O so that it has an impact on reducing acute pain, disturbed sleep patterns due to pain as the main cause, so that if the pain is resolved, it is possible that the problem of sleeping pattern disorders will be resolved as well. For the knowledge deficit, the implementation is carried out by providing health education related to hypertension. To diagnose the risk of falling, the implementation given is by recommending the client to use non-slip sandals, increasing the lighting of the room and modifying the environment so as not to cause a potential trip that can cause the risk of falling.

5. Evaluation

Based on the evaluation results, it was found that of the three nursing problems that emerged, namely acute pain, disorders of sleep patterns, knowledge deficit, all three showed positive results, indicating the client's condition was in a better direction even though the three nursing problems had only been partially resolved. Based on the evaluation results, it was found that there was a decrease in blood pressure after the client was given progressive muscle relaxation therapy for 3 days with a daily duration of about 15 minutes/meeting.

The results of the intervention showed that after giving progressive muscle relaxation therapy for 3 consecutive days, the client's blood pressure decreased from the initial examination of 170/110 mmHg to 158/100 mmHg on the 3rd day of examination. This condition resulted in the improvement of headache complaints, clients who gradually decrease from a pain scale of 5 to 4; the client said that she sleeps more soundly because her headache has reduced ands he rarely wakes up during sleep; the client also has a better understanding of the high blood pressure he suffers from. The finding is consistent with the study of Chauhan and Sharma (2017) suggested that PMR could help reduce blood pressue and act as an adjunctive intervention for hypertension.

CONCLUSION

From a case study conducted on Mrs. O with Hypertension and intervention with progressive muscle relaxation therapy to reduce blood pressure, the results obtained after giving progressive muscle relaxation therapy for 3 consecutive days the client's blood pressure dropped from the initial examination of 170/100 mmHg to 158 /100 mmHg. at the time of the evaluation on the third day, the complaints of pain in the fabric progressed from all 5 to 4 pains. Therefore, it can be concluded that the provision of progressive muscle relaxation therapy may beneficial in providing nursing care for efforts to reduce blood pressure in the elderly with Hypertension grade 2.

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