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Combination Therapy Slow Deep Breathing and Acupressure to Overcome Ineffective Breathing Pattern Nursing Problems: A Case Study

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ABSTRACT

Therapy slow deep breathing exercise and acupressure is a complementary therapy that aims to reduce the symptoms of the disease to improve the quality of individual health. Complementary therapy is rarely done in hospitals so that the symptoms felt by patients are not reduced without medication. This therapy can reduce the symptoms of shortness of breath in patients who specifically experience impaired breathing patterns that are not effective. The study aims to determine the effectiveness of combination therapy slow deep breathing exercises and acupressure to address ineffective breathing pattern nursing problems in nursing care. This type of research is a case study using the nursing care method. The research sample was patients treated in the Gardena room at dr. Soebandi General Hospital Jember. Patients were given nursing interventions in the form of a combination of slow deep breathing exercise therapy and acupressure for 1-2 times a day for 3 days. Providing nursing interventions in the form of a combination of slow deep breathing exercise therapy and acupressure can overcome ineffective breathing pattern nursing problems. This is indicated by the improvement in the patient's condition that the shortness of breath is reduced, the frequency is improving, not using the auxiliary muscles of breathing, and the depth of breathing is improving. Patients can also carry out the therapy independently properly and correctly. A combination of slow deep breathing exercise therapy and acupressure can overcome the problem of ineffective breathing pattern nursing.

Keywords: acupressure therapy; ineffective breathing pattern; slow deep breathing therapy

INTRODUCTION

Complementary therapy has so far not been optimally carried out in hospitals, based on the literature this is because there are still limited skills of practitioners to carry out interventions and the effectiveness of therapy has not yet been fully proven to be effective and safe because research is still small and lacking in support, and in certain diseases (Mailani, 2023). The problem experienced by nurses in carrying out slow deep breathing therapy is that this therapy is considered to be the cause of delaying medical therapy to treat symptoms so that it has the potential for patients to lose recovery (Shen et al., 2021). In acupressure therapy, its use is still not carried out in health services due to the lack of knowledge of nurses about acupressure therapy techniques and points on the meridian pathways so that it will make the therapy not optimal for reducing the symptoms felt by patients (Suardana et al., 2016). Based on observations in the Gardena room at dr. Soebandi General Hospital Jember that slow deep breathing exercise therapy and acupressure therapy have never been done to overcome the problem of ineffective breathing pattern nursing.

The results showed that slow deep breathing interventions could improve respiratory function in 37 respondents (Chukwu et al., 2022). The results of a study in Japan showed that deep breathing therapy for 128 respondents was very effective in improving the quality of life of cancer patients (Inoue et al., 2021). The results of a previous study showed that slow deep breathing therapy was performed on 65 COPD patients at the First Hospital at Jilin University in China. (Wang et al., 2020). Another study showed that slow deep breathing therapy was carried out on 50 respondents in hospitals in China (Shen et al., 2021). The results of research at Dr. M. Goenawan Partowidigdo Indonesia that slow deep breathing therapy can reduce crowded in cases of pneumonia which was carried out on respondents as many as 20 patients (Ali et al., 2022). Research in Jember Indonesia showed that giving slow deep breathing therapy could reduce pre-circumcision anxiety in 20 respondents (Kushariyadi & Rondhianto, 2022).

Volume 3, Number 3 (September 2023)
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Deep breathing relaxation is breathing through the abdomen with a slow, deep, rhythmic frequency that is done comfortably by closing your eyes. This technique reduces respiratory frequency, oxygen consumption, heart rate, and muscle tension (Ministry of Health Republic of Indonesia, 2022). This relaxation technique is a form of nursing care which is the nurse's duty to teach patients about how to relax deep and slow breaths, namely by holding inspiration to the maximum, and how to exhale slowly, these exercises aim to increase oxygenation in the blood, efficiency of lung ventilation, and increased chest expansion (Ali et al., 2022). Giving slow deep breathing exercise can improve lung organ function and reduce tightness in patients (Yokogawa et al., 2019). Slow deep breathing exercise is efficient on lung ventilation by increasing alveolar function and reducing ventilation. Deep and slow breathing increases oxygenation in the arteries by increasing alveolar function and increasing gas exchange in the alveolar-capillary membrane (Ali et al., 2022).

Acupressure therapy is a finger prick therapy which is a form of physiotherapy by providing massage and stimulation at certain points on the body. Acupressure therapy can be used to treat pneumonia patients who experience tightness and chest pain at certain points, namely the LI 4 and LU 9 points on the hands and the T3 point on the back (Nurhan, 2020). The location of the LI 4 point is on the back of the hand, on the radial side of the concavity and proximal to the second metacarpophalangeal joint, the LI 4 point is located on the back of the hand at the highest protrusion when the thumb and forefinger are brought together, this point is used for sedation and is a strong antispasmodic, so many used in painful conditions, both on the meridians or pain felt by the patient. This point is also often referred to as the general acupressure point and hugo points, in the research that has been done, the results show that hugo point acupressure is carried out together with breathing therapy to get results, namely increasing respiratory volume and reducing chest pain in post-chest surgery patients (Fasihi et al., 2022). The second point is LU 9, this point is also on the hand. The tai yuan point (LU 9) is located in the crease of the wrist, above the artery (radial artery), where you can feel the indentation. How to acupressure the tai yuan point (LU 9) by tonifying (strengthening), pressing with the thumb or forefinger rotated clockwise. The third point is T3 which is located on the back. This point is at the top of the shoulder, halfway between the neck's nape and the arm's base. The results of other studies stated that studies conducted at the GB 21 or T3 point in pneumonia patients during the COVID-19 period obtained significant results that felt tightness was reduced (Zhang et al., 2020). The study aims to determine the effectiveness of combination therapy, slow deep breathing exercises, and acupressure to address ineffective breathing pattern nursing problems in nursing care.

METHOD

The study aims to determine the effectiveness of a combination of slow deep breathing exercise therapy and acupressure to overcome ineffective breathing pattern nursing problems in nursing care.

Design and Samples

This type of research is a case study using the nursing care method. The sample in the study were patients who were treated in the Gardena room at dr. Soebandi General Hospital Jember with the problem of ineffective breathing pattern nursing. This study's data sources were obtained from primary data, namely by taking action, observation and question and answer with patients and families, and secondary data obtained through patient medical record data.

Variables and Analysis

The variables of this study were slow deep breathing exercise therapy and acupressure and ineffective breathing pattern nursing problems. Retrieval of patient data in the Gardena Room dr. Soebandi General Hospital Jember subjectively and objectively uses a nursing assessment format. The analysis in this study uses the nursing care process which consists of nursing assessment, nursing diagnosis, nursing intervention, nursing implementation and nursing evaluation.

Settings and Strategy

Patients were given nursing interventions in the form of a combination of slow deep breathing exercise therapy and acupressure for 1-2 times a day for 3 days, namely January 16 to 18, 2023. These nursing interventions were given through the nursing process, namely by giving directly by teaching patients and families with correct and appropriate technique by adjusting the patient's condition. Intervention is provided through the following:

1. Orientation Phase
   - Therapeutic greetings to patients and families
   - Meeting evaluation
   - Contract (topic, time, place).

Volume 3, Number 3 (September 2023)
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p-ISSN: 2798-5059

2. Working Phase
   - Giving slow deep breathing exercise therapy
   - Giving acupressure therapy
3. Termination Phase
   - Evaluation (evaluation of family and patient responses) subjectively and objectively.
   - Follow-up (tasks for participants).
   - Upcoming contract (topic, time, place).

RESULT

Characteristics of Respondents

Table 1. Characteristics of Respondents

Characteristics	
Medical Diagnostics	: Pneumonia + right pleural effusion + HHD
Age	: 77 years
Gender	: Man
Religion	: Islam
Education	: Elementary School
Work	: Farmer
Marital status	: Marry

Nursing Care

Table 2. Nursing Care

Nursing Process	Results
Nursing Assessment	The main complaint of the patient is shortness of breath. Focus physical assessment on: - Inspection of the neck: there is use of the sternocleidomastoid accessory muscles. - On inspection of the chest: there is use of the intercostals internal respiratory muscles. In palpation: there is a palpable fremitus focal decreased and flat throughout the lung fields. On auscultation: there is an additional sound of wet crackles on the patient's right and left chest. - Supporting examination: on the chest X-ray there is a cast that is not enlarged, a picture of contusion pulmonary fracture on the right clavicle shaft.
Nursing Diagnoses	Ineffective breathing pattern related to difficulty in breathing characterized by the patient's shortness of breath, use of the sternocleidomastoid and internal intercostals muscles, the patient's expiration is prolonged for 6 seconds, the pattern of breathing is tachypnea, and the respiratory rate is 32 times per minute.
Nursing Intervention	Observation: 1. Identify indications for breathing exercises. 2. Monitor frequency, rhythm, and depth of breath before and after exercise. 3. Check for contraindications (e.g., contusion, scar tissue, infection, young children). 4. Check the level of psychological comfort by touch. 5. Check for sensitive areas to apply finger pressure. Therapeutic: 6. Do a combination therapy of slow deep breathing exercise therapy and acupressure. Education: 7. Explain the things that need attention in the therapy. Collaboration: 8. Collaboration with a certified therapist

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Volume 3, Number 3 (September 2023)
e-ISSN: 2798-5067
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Nursing Process	Results
Nursing Implementation	1. Perform acupressure therapy by selecting 3 points on the body, namely LI 4, LU 9, and T3. 2. Provision of lotion to taste at the acupressure point. 3. Press the acupressure point with moderate pressure and rotate it clockwise 30 times (10-10-10). 4. Do acupressure 1-2 times a day or as needed (Tim Pokja SIKI DPP PPNI, 2018). 5. Continue doing slow deep breathing exercise therapy. 6. Position one hand on the chest and one hand on the stomach. 7. Inhale through the nose for 4 seconds. 8. Hold your breath for 2 seconds. 9. Exhale from the mouth with rounded lips for 8 seconds. 10. Do this exercise 5-10 times (Tim Pokja SIKI DPP PPNI, 2018).

Nursing Evaluation

Table 3. Nursing Evaluation Day 1

NO	Indicator	Input					Output				
		1	2	3	4	5	1	2	3	4	5
1	Dyspnea		√						√		
2	Use of accessory muscles for breathing		√					√			
3	Expiratory phase prolongation		√					√			
4	Orthopnea		√					√			
5	Breathing frequency		√						√		
6	Breath depth		√						√		

Table 3 shows that the output of the summative evaluation on the first day of January 16, 2023, found that the patient had reduced shortness of breath, SPO2 = 95% with an NRBM of 10 lpm, respiratory rate of 24 times per minute with fast and shallow breaths, use of accessory muscles to breathe. The therapy that was carried out for the first time was quite effective because there was a decrease in respiratory frequency, but the patient still had difficulty participating in the exercises because of the tightness he felt. After being given acupressure therapy on the back and arms, the patient looks relaxed and more comfortable. The nursing action of giving oxygenation and buying a nebulizer is still being carried out to the patient. Based on these data, the output of an ineffective breathing pattern on the first day of giving the intervention has yet to be resolved on several indicators, namely number 2, 3, 4.

Table 4. Nursing Evaluation Day 2

NO	Indicator	Input					Output				
		1	2	3	4	5	1	2	3	4	5
1	Dyspnea			√					√		
2	Use of accessory muscles for breathing		√						√		
3	Expiratory phase prolongation		√						√		
4	Orthopnea		√						√		
5	Breathing frequency			√					√		
6	Breath depth			√						√	

Table 4 shows that the output of the summative evaluation on the second day of January 17, 2023, found that the patient's complaints had decreased, shortness of breath had decreased, use of the intercostal accessory muscles,

Volume 3, Number 3 (September 2023)
e-ISSN: 2798-5067
p-ISSN: 2798-5059

respiratory rate 26 times per minute, SPO2 = 96% with a nasal cannula of 8 lpm. Nursing actions for oxygenation and nebulizer administration are still being carried out. The patient was able to follow the exercise well because the tightness he felt was reduced and his breathing was not as shallow as the previous day. Based on the results above, the output of an ineffective breathing pattern on the second day of intervention has begun to be partially achieved on a number of indicators, namely number 1 to 6.

Table 5. Nursing Evaluation Day 3

NO	Indicator	Input					Output				
		1	2	3	4	5	1	2	3	4	5
1	Dyspnea			√						√	
2	Use of accessory muscles for breathing			√							√
3	Expiratory phase prolongation			√						√	
4	Orthopnea			√						√	
5	Breathing frequency			√							√
6	Breath depth				√					√	

In table 5, the output of the summative evaluation on the third day of January 18, 2023, showed that the patient's complaints had decreased and were getting better, because his condition was good, the patient was planned to go home. This is evidenced by the shortness of breath that is felt by the patient much better, respiratory rate 22 times per minute, SPO2 = 95% with nasal cannula 6 lpm, breathing pattern is still tachypnea, there is no use of accessory muscles for breathing. Nursing action of giving oxygen therapy is still being carried out. Based on the results above, the output of an ineffective breathing pattern on the third day of giving the intervention was achieved, marked by improvements in all indicators, namely numbers 1 to 6.

DISCUSSION

Table 1 shows that patients with a medical diagnosis of pneumonia + dextra pleural effusion + and HHD. The patient has a previous medical history, namely a history of asthma but has not relapsed for a long time, the patient smoked until before he was sick, the patient has no history of infectious or metabolic diseases. Based on the results of research on age characteristics that along with increasing age can increase the occurrence of pneumonia, at the age of 75 years and over it reaches 2.9% of all cases of pneumonia (Kemenkes RI, 2022). Older people are also very vulnerable to respiratory diseases because they are related to changes that occur physiologically due to aging. The cause of pneumonia susceptibility in old age is decreased function of organs, changes in the immune system, phagocytic activity, and is exacerbated by the occurrence of multipathological conditions in old age (Mulyana, 2019). Other studies state that patients have a history of respiratory disease and smoking are trigger factors for acute and chronic respiratory disease, and there is a relationship between smoking and the incidence of pneumonia (Fathoni et al., 2023).

Table 2 shows the results of the physical examination (main complaint) found in the patient, namely the patient said tightness, use of the sternocleidomastoid and internal intercostalis muscles, the patient's expiration was prolonged 6 seconds, the pattern of breathing was tachypnea, the respiratory rate was 32 times per minute. Based on the main complaint felt by the patient when he was admitted to the hospital, the family said that the patient had felt shortness of breath since 1 week before entering the hospital and it got worse about 3 days before entering the hospital and was treated at the public health center and taken to dr. Soebandi General Hospital Jember. This is in accordance with the results of other studies that the results of anamnesis in pneumonia patients included shortness of breath, coughing, tachypnea breathing patterns, and during a physical assessment of the lungs, crackles were heard in the lung fields (Ali et al., 2022). Patients with pneumonia experience symptoms of shortness of breath due to interference with the process of oxygen diffusion between the alveoli and the pulmonary capillaries so that tissue hypoxia can occur (Ali et al., 2022). Patients diagnosed with pneumonia can cause various nursing problems, including shortness of breath due to inflammation of the alveoli sacs which causes fluid or pus to form so that air cannot enter and leave the lungs optimally (Singh & Tripathi, 2022). In patients with pneumonia, they often also feel pain in the chest due to the occurrence of pleuritis, so that pneumonia patients are often found lying down bending their knees because of the pain. Pneumonia patients experience

Volume 3, Number 3 (September 2023)
e-ISSN: 2798-5067
p-ISSN: 2798-5059

inflammation of the alveoli and pleural organs, causing the exchange of O2 and CO2 to be not optimal so that patients experience shortness of breath, causing problems with ineffective breathing pattern nursing (Kemenkes RI, 2020). Based on the data from the results of the physical examination, the patient showed complaints of respiratory problems, namely shortness of breath since 3 days before the patient was taken to the hospital and these conditions were getting worse when he was admitted to the hospital with other respiratory complaints.

In table 2 regarding the implementation of nursing which was carried out for 3 days, namely from 16 to 18 January 2023 with a therapeutic dose of 1-2 times a day and carried out independently by the family in the slow deep breathing exercise intervention, by monitoring respiration after intervention according to the output indicator of nursing problems ineffective breathing patterns, the shortness indicator is measured by the dyspnea severity scale (DSS) which is measured through objectively measured parameters to validate the level of shortness felt by patients in an emergency (Ali et al., 2022).

Tables 3, 4 and 5 regarding the evaluation of nursing days 1 to 3 show that the results of implementing nursing actions in combination with slow deep breathing exercise therapy and acupressure can overcome the tightness felt by patients with ineffective breathing pattern nursing problems. This study is in accordance with studies conducted on pneumonia patients with complaints of shortness of breath which obtained significant results for a decrease in symptoms felt by patients (Ali et al., 2022). The results of other studies also show that CHF patients with shortness of breath who are given slow deep breathing exercise therapy for 3 consecutive days guided for 1 cycle and carried out independently by the patient and family can reduce the shortness of breath felt by the patient (Suharto, 2021). The results of another study showed that acupressure therapy also had an effect on reducing the tightness felt by patients who were carried out on COVID-19 patients in Wuhan China. Patients who were given acupressure therapy compared to patients who were not given acupressure therapy showed a significant decrease in symptoms in patients who were given therapy (Zhang et al., 2020).

CONCLUSION

The results of the study obtained were male patients aged 77 years with a medical diagnosis of Penumonia + Dextra Pleura Effusion + HHD (Hypertensive Heart Disease), work as a farmer, with complaints of shortness of breath, there were sounds of wet rhonchi on the right and left chest, muscle use breathing aids, namely sternocleidomastoid and internal intercostalis, the patient's expiration lengthens 6 seconds, the pattern of breathing is tachypnea, with a respiratory rate of 32 times per minute, with nursing problems the pattern of breathing is ineffective. The patient underwent a nursing intervention with a combination of slow deep breathing exercise therapy and acupressure with a dose of 1-2 times a day for 3 consecutive days and the results showed that the nursing intervention could reduce the problem of nursing shortness of breath, ineffective breathing patterns.

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