Deep Breathing Relaxation Technique toward Decrease Pain Intensity in Post Operative Patients at Mamuju District Public Hospital

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ABSTRACT
Deep breathing relaxation therapy is non-pharmacological therapy which effectively reduces pain intensity. However, not all nurses at Mamuju District Public Hospital use this method as they prefer to implement analgesic therapy. This study aimed to determine influence of deep breathing relaxation technique to pain intensity in postoperative patients at Mamuju District Public Hospital. This quantitative study was pre-experimental with one group pre-test and post-test method. Samples were postoperative patients in High Care Unit (HCU) at Mamuju District Public Hospital. This study was conducted on April-October 2015 with a sample of 70 people obtained through accidental sampling method. Data collection was conducted using pre-test and post-test deep breathing relaxation. The independent variable in this study was deep breathing relaxation technique, while the dependent variable was pain intensity. Data analysis used Wilcoxon test. The results of this study showed that deep breathing relaxation technique decreased the pain intensity in postoperative patients at Mamuju District Public Hospital.
Keywords: Deep breathing relaxation technique, postoperative patients, nurse

INTRODUCTION

The rapid development of science and technology in health sector as well as the growth of public knowledge require more qualified health care. People need the feeling of comfort that is diversely perceived by each person. Then one of conditions that make people discomfort is a pain. Because the nature of pain is subjective individual sense, therefore, a nurse should be sensitive to patient's pain. The nurse is required to have the ability to identify and cope with pain.

The congress on pain in from 2000 to 2010 talked on how to control the pain and develop study on pain. Pain is a major health problem in the United States of America. Granting relief to pain management is fundamental human rights contained in the legislation draft concerning pain management. The American Bar Association in 2000 declared pain management as basic legal rights. Nurses are the legal and ethically responsible of handling the patients's pain to reduce the suffering.

The pain that is not treated adequately has a harmful effect beside the discomfort this may cause. In addition to discomfort and interfere, the pain which does not subside may affect the pulmonary system, cardiovascular, gastrointestinal, endocrine and immunological. In this condition, sometimes the stress response of patients to trauma can also be increasing pain that occurs over time and lasts for a long time leads a person to depression and the inability or powerlessness in their activities.

One complaint which often arise from the surgery is an acute postoperative incision pain. Pain scale is an effective method for nurses to assess postoperative pain. It is important to ensure a holistic approach in the assessment and treatment of patients. Individuals with pain experienceare the best source of information to describe the pain they experienced. Nurses need to apply the techniques and skills that will ultimately provide pain management action for the patients' pain. The nursing knowledge of the mechanism of pain and interventions continue to evolve through nursing study. Pain management strategy is an action to reduce pain, which consists of pharmacological and non-pharmacological. Non-pharmacological pain management is the act of lowering a response to pain without the use of pharmacological agents. One kind of non-pharmacological healing or rehabilitation phase to reduce postoperative pain is by a deep breathing relaxation technique.

Relaxation techniques need to be taught several times to achieve optimal results and instructions needed to use the relaxation techniques to reduce or prevent the pain. The use of relaxation techniques does not imply that the pain is unreal, but it only helps reduce the fear or anxiety associated with pain in a better way.[13]. Several studies have shown that relaxation breathing is very effective in reducing postoperative pain, one of which is a study on appendectomy patients which concluded that the relaxation techniques are evidently effective in lowering the adaptation response to pain in appendectomy patients at Aloei Saboe Gorontalo Public Hospital.

According to the initial data retrieval conducted by researchers at the Mamuju District Public Hospital, the number of patients who underwent surgery every month was at least 70 people. The interviews with the responsible HCU of Mamuju District Public Hospital, informed that breathing relaxation techniques is very rarely performed by the nurses to assist patients to relieve wound pain due to surgery. This is because the nurses often provide patients analgesic pain relief following the doctor's instructions, so the

comfort sense of patients was still impaired by analgesic pain when the reaction was gone. This study then measured the effectiveness of breathing relaxation techniques against changes in the pain intensity in postoperative patients at Mamuju District Public Hospital in aim to determine the effectiveness of deep breathing relaxation against the patients' pain.

METHOD

This quantitative study used pre-experimental design consisting of pre-test and post-test group[5]. The populations of study were 280 postoperative patients at Mamuju District Public Hospital on January to April 2015. The sample determination in this study applied accidental sampling method to obtain a sample of 70 people.

The independent variable in this study was deep breathing relaxation technique as measured by guiding patients how to take a deep breathing, then to exhale slowly through the mouth, and keep concentrating and repeating this technique when the pain returned until the patients felt calm. The dependent variable was the pain intensity, which was measured through the score by the patients before and after the breathing relaxation in a pain scale of 0-10. The score 0 means no pain, the score 1-3 means mild pain, the score 4-5 means moderate pain, the score 7-9 means severe pain controlled, and the score 10 means uncontrolled severe pain.

Sources of data in this study were primary data and secondary data. The primary data was obtained from direct observations at the time of breathing relaxation technique to the patients, while the secondary data was obtained from the data available in the hospital and other sources related to the needs of study.

The data collection was done by first asking respondent's willingness to sign the informed consent. After respondents approved, then they were interviewed to assess the characteristics of pain in accordance with the method (P, Q, R, S, T), so the nurse could determine the intensity of pain the patients got through the pain scale before the deep breathing (pre-test) then be intervened with deep breathing relaxation technique. After the intervention was completed, then the study determined the change in pain intensity through the interviews.

The data analysis in this study used the statistical methods with Wilcoxon Test[6] with an error rate or p value = 0.05, to obtain a therapeutic effect on the reduction in pain intensity in postoperative patients.

RESULTS

Most respondents were females, and the largest proportion of respondents was the age of 28-32 years. Based on the duration of surgery, most respondents underwent the surgery for 6-10 hours, while the breathing relaxation technique took an average of 20 minutes. When interventions, in general, respondents complained of pain on the location of the incision, and felt the pain symptoms such as pain cut-slices. While based on experience, the trigger of pain on the incision was generated when the patients moved their limbs.

Table 1. Characteristics of Respondents

Characteristic	Category	n	%
	13-17 years	2	2.9
	18-22 years	9	12.9
	23-27 years	14	20
	28-32 years	17	24.3
	33-37 years	10	14.3
Age	38-42 years	5	7.1
	43-47 years	6	8.6
	48-52 years	3	4.3
	53-57 years	3	4.3
	63 years	1	1.4
Sex	Male	16	22.9
	Female	54	77.1

Duration of Surgery	6-10 hours	64	91.4
	11-15 hours	4	5.7
	16-20 hours	1	1.4
	21-22 hours	1	1.4
Duration of Intervention	15 minutes	15	21.4
	20 minutes	30	42.9
	25 minutes	11	15.7
	30 minutes	12	17.1
	60 minutes	2	2.9
Location of Pain	Surgical wound	65	92.9
	Surgical wound and surrounding	5	7.1
Symptoms of Pain	Cuts	53	75.7
	Punctured	16	22.9
	Other	1	1.4
Trigger of Pain	Only when moving	67	95.7
	Only when on the move	2	2.9
	When moving and active	1	1.4

To measure the changes in pain intensity of 70 respondents, before the intervention, there were 65.7% of respondents experiencing pain at medium category and 27.1% at light category as well as severe pain control in surgical scar at 7.1%. However, after the treatment, there was a reduction in pain intensity at which 60% of respondents experienced pain at mild category. This category of pain was at 28.6% and the category of severe pain controlled at 4.3%, even there were patients who no longer experienced pain on the incision after the relaxation at 7.1%.

Table 2. Comparison of Pain Intensity Before and After Relaxation

Category of Pain	Relaxation Techniques			
	Before		After	
	N	**%**	**n**	**%**
No Pain	0	0	5	7.1
Mild	19	27.1	42	60
Moderate	46	65.7	20	28.6
Severe	5	7.1	3	4.3
Serious pain is not controlled	0	0	0	0

There were 35 respondents who experienced a reduction in pain intensity after deep breathing relaxation technique, while 35 respondents did not have change, either before or after therapy.

Table 3. Breathing Relaxation Technique and Pain Intensity

No.	Change in Intensity	Change in Intensity of Pain After Relaxation Guide		p (Wilcoxon Test)
		n	**%**	
1.	Decreased Intensity	35	50	
2.	Increased Intensity	0	0	**0,000**
3.	No Changes	35	50	
	Amount	**70**	**100**	

Based on the results of the Wilcoxon Test, the significance value was 0.000 (p < 0.05). Thus, it can be concluded that the provision of breathing relaxation technique in affected a reduction in pain intensity in postoperative patients.

DISCUSSION

The results are in line with study by Nurdin (2013) on the effect of relaxation technique on pain intensity in patients with postoperative fracture with varying levels of pain intensity experienced by patients ranging from mild, moderate to severe uncontrolled pain. Patients with severe pain intensity in scale of 7-9 had their more attention to pain difficult to be diverted and they were not able to move. While, patients with moderate pain intensity in scale of 4-6 could get their most attention to pain diverted, and were still able to move , and patients with mild pain intensity in scale of 1-3 had their little attention to pain diverted and could move.

Study by Fitriani (2013) titled "The Effect of Relaxation Techniques Breath in the Adaptation Response of Pain in Patients Maternity First Stage of the Latent Phase" supports the results above, which also found no difference in pain intensity experienced by patients including mild, moderate, severe pain, and severe pain uncontrolled.

Engram (1999) in the Goddess (2009), said that a person's response to pain is influenced by emotions, level of consciousness, cultural background, past experience of pain and the sense of pain. The difference of the patient's pain experience is because pain is a complex sensation, unique, universal and individual. Is said to be individualized to the individual response to the sensation of pain varied with the other so that the sensation of pain is felt also vary.

McCaffery (1980) in Prasetyo (2010) reported that pain puts patients as an expert in the areas of pain because only the patients themselves know about the pain they felt. Even pain is something very subjective, there is no objective measure, so that only people who feel it can define pain most accurately and precisely.

In Potter & Perry (2010), there are four physiological processes of nociceptive pain (nerves conduct pain stimuli to the brain), namely transduction, transmission, perception, and modulation. Clients experiencing pain cannot distinguish the four processes. Understanding the respective processes will help people identify the factors causing pain, symptoms following the pain, and the rationale for each action given, thus the measurement scale of 1-10 is used to help measure the level of pain that can be perceived by each patient.

Results of other studies also support the results of this study, one of which was the results of study Goddess (2009) on the effect of deep breathing relaxation techniques to decrease the perception of pain in older adults with rheumatoid arthritis, concluding that there was significant influence of administration of deep breathing relaxation technique to a decrease in perception of pain in elderly people with rheumatoid arthritis, as well as study by Fitriany (2013) at Siti Fatimah Hospital in Makassar concluding that there was a difference between the level of pain and adaptation response of pain in patients maternity the latent phase of the first stage before and after a deep breathing relaxation technique given.

According to Jayanthi (2010) in Ernawati (2010), breathing relaxation techniques can improve ventilation in the alveoli, maintaining gas exchange, prevent pulmonary atelectasis, cough improve efficiency, reduce stress both physical and emotional that reduce the pain intensity and anxiety.

Potter & Perry (2010) also mentioned that deep breathing relaxation technique can lower heart rate, blood pressure, and respiratory rate; increase global awareness; decrease oxygen requirements; be a sense of peace; and decrease muscle tension and metabolic rate, therefore, it can create a feeling of relaxed for patients.

The use of relaxation techniques does not imply that the pain is not real, but it only helps reduce the fear or anxiety associated with pain that is not getting worse. Despite being able to reduce the intensity of pain, breathing relaxation technique can also improve ventilation in the lungs and improve blood oxygenation.

Patasik (2013) mentioned that the relaxing effect of deep breathing and a guided imagery make respondents feel relaxed and calm. This is what causes the intensity of pain experienced by postoperative patients of caesarean section decreased after the deep breathing relaxation techniques and guided imagery.

There are several studies, both domestic and foreign studies, relevant to this study that found the effectiveness of deep breathing relaxation to the reduction of pain in patients. As found out by Mobily, Herr, Kelley (1993), three cognitive techniques that can help reduce pain in patients are intervention relaxation, distraction, and imagination-guided visualization.

However, behind many benefits and advantages of breathing relaxation technique, this therapy also has some weaknesses that are less skilled instructors can give the impression of rigid, so that the process of deep breathing relaxation therapy would be not optimal. In addition, the medium used in the

relaxation room with condition of less attention, for example, can affect patients feel comfortable while doing sports; if the counselees are less able to control themselves with a habit of prioritizing personal values; the severity of the problems the counselee face as they are pressured to be able to master the problem. Although they had several times treated less, they showed changes for the better.

Moreover, another drawback obtained in this study was that the postoperative patients who became respondents in this study were general, not specifically the postoperative patients with certain diseases, so that the results of this study were not able to find out the effectiveness of breathing relaxation therapy in postoperative patients with certain diseases. The results of this study could not describe in details the stages of change in perceived pain of patients ranging from pain to be at relax point.

CONCLUSION

Breathing relaxation technique can affect the pain intensity in postoperative patients because there is a significant difference between before and after breathing relaxation technique. This therapy is very helpful in reducing pain of postoperative patients for relieving mental and physical tension as stress can increase tolerance to pain and improve pulmonary ventilation and oxygenation of blood. This study is expected to contribute in the field of nursing, particularly the use of non-pharmacological therapy in reducing pain, so that there are many alternative ways used for reducing pain. Especially to the nurses at Mamuju District Public Hospital who rarely use non-pharmacological therapy in reducing pain in patients.

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