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Non-Pharmacological Therapy to Reduce Pain Intensity in Patients

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Abstract

Pain is still the main problem for patients being treated in the treatment room. To overcome pain, analgesic drugs are often given. Even though the first step to help reduce pain can be to use non-pharmacological therapy. This study aims to see effect of non-pharmacological therapy in reducing patient pain levels. The type of research is a quasi-experiment with a one-group pre-test and post-test design approach. Sampling using accidental sampling technique over a period of 1 month obtained 50 respondents who matched the characteristics of the respondents in the research. Overall non- pharmacological therapy (beson relaxation, murotal, guide imagery, zikr, warm compresses, and hypnosis techniques) can reduce pain intensity in respondents who experience pain. Pain management in patients does not always involve immediate administration of medication. Non-pharmacological measures must always be prioritized to treat pain. Non-pharmacological therapy has been proven to be able to overcome or reduce pain levels.

Introduction

Pain is an unpleasant sensory and emotional experience resulting from actual and potential tissue damage. In this case, pain is a production mechanism for the body, arises when tissue is damaged, and causes the individual to react to eliminate painful stimuli (Aiysah, 2017). The International Association for the Study of Pain (IASP) defines pain as an unpleasant subjective sensory and emotional experience related to actual or potential tissue damage or perceived in incidents where the damage occurs (IASP, 2020). In Indonesia, pain is the most common reason for patients to visit healthcare facilities and is the most common reason given for self-medication. Continuous analgesics are the primary therapy in treating pain. However, one of the reasons for inappropriate pain management is a lack of knowledge about non-pharmacological therapies. Although pain can be reduced by using medication, several non-pharmacological techniques can also help control or reduce the pain felt by patients such as benson relaxation, murotal therapy, guide imagery, dhikr, warm compresses, and hypnosis techniques.

The physical impact of pain is rapid breathing, increased pulse, blood pressure, stress, inhibited healing, and decreased immune function. Pain problems management can be done pharmacologically and non-pharmacologically. A combination of pharmacological and non-pharmacological techniques to reduce pain. One of the pharmacological techniques used is relaxation techniques. Relaxation techniques can reduce muscle tension caused by pain (Permatasari & Sari, 2016). Non-pharmacological therapy is

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crucial before treatment carried out to avoid the impact or side effects of consuming drugs (Nurjanah et al., 2020). The research explains the non-pharmacological therapy of benson relaxation, murotal therapy, guide imagery, dhikr, warm compresses, and hypnosis techniques can reduce the intensity of pain in patients in Toto Kabila Hospital Bone Bolango, Gorontalo, Indonesia.

Method

This research used a pre-experimental design method with a one-group pre-post-test design approach. Purposive sampling was used to select respondents, namely adult patients treated in the internal medicine ward. A total of 50 patients were selected for this research. The dependent variable in this study is the intensity of pain in patients being treated in the internal medicine ward, while the independent variable is non-pharmacological therapy. This research has received permission from the Health Research Ethics Commission of Universitas Negeri Gorontalo No: 125A/UN47. B7/KE/2023.

The research was carried out for 1 month and carried out 5 (benson relaxation, murotal therapy, guide imagery, dhikr, warm compresses, and hypnosis techniques) selected interventions to reduce pain. The researcher was assisted by 5 young nurses on clinical specialization work in the internal medicine room in Toto Kabila Bone Bolango, Gorontalo, Indonesia. Each nurse will be assigned one intervention on 10 respondents who meet the respondent criteria. Before carrying out an intervention, every young nurse is provided with standard operational procedures for each intervention. The instrument used to measure pain is a pain intensity scale using the numerical rating scale (NRS) method. NRS is a pain screening tool, commonly used to assess pain severity at that moment in time using a 0-10 scale, with zero meaning "no pain" and 10 meaning "the worst pain imaginable". Statistical analysis using SPSS 26.0.

Result And Discussion

A total of 50 patients who experienced pain problems became respondents in this study.

Table 1. Respondent Characteristics Related to Pain Perception (n=50)

Characteristics	N	%
Gender		
Male	20	40
Female	30	60
Age (year)		
17-25	4	8
26-35	5	10
36-45	9	18
46-55	10	20
56-65	22	44
Medical diagnosis		
Abdominal colic	12	24
Dyspepsia	18	36
Gout	9	18
Gastroesophageal Reflux Disease (GERD)	3	6
Cephalgia	2	4
Hypertension	2	4
Brochopneumonia	1	2
Gastroenteritis (GEA)	1	2
Chronic Kidney Disease	1	2
	1	2

Table 1 shows that most respondents were female, as many as 30 respondents (60%). The age of the respondents was in the range of 56-65 years, as many as 22 people (44%). While the most common medical diagnosis was dyspepsia with 18 respondents (36%).

Based on the research conducted, statistical test results were obtained using the paired t-test on respondents after being given hypnotherapy (five-finger hypnotherapy) intervention once a day for 3 days of treatment with an intervention duration of 5-10 minutes. The p-value is 0.000 (<0.05). It shows a positive influence of five-finger hypnotherapy on reducing the pain scale in the internal room of RSUD Toto Kabila Bone Bolango, Gorontalo. Five-finger hypnotherapy is a psychological intervention. Hypnotherapy causes a person to relax so that it is easier to accept suggestions from the therapist. Hypnotherapy deliberately utilizes the state of fantasy to reduce changes in both the patient's conscious and subconscious mind. In this way, hypnotherapy utilizes the patient's psychological condition to change the perception of pain, including pain, into a more comfortable feeling. Hypnotherapy can divert the client's attention with the suggestions given so that the client will forget the pain they are feeling. Hypnotherapy affects the ACC (Anterior Cingulated Cortex) which will have an effect on the affective process regarding the experience of pain. Affection modules will influence the brain's perception of the pain experience so that it can lead to positive coping (Halim & Khayati, 2020).

The working mechanism of five-finger hypnotherapy is by directly providing a stimulus to the brain in the thalamus, the thalamus will send words of suggestion which will influence alpha waves. Alpha waves will affect the limbic system, namely the amygdala. Then the amygdala will send information to the locus coeruleus and transmit it to the hypothalamus. The hypothalamus will control CRF so that cortisol and ACTH hormones are reduced and secrete endorphin and serotonin neurotransmitters so that the intensity and scale of pain can be reduced (Fitrianingrum et al., 2018). The results of this research are supported by the theory of Wilson and Nelson (2015), which states that hypnotherapy involves hypnosis induction, which can change perception and behavior and even act as a coping mechanism for pain management. Hypnotherapy is a non-pharmacological therapy that works on the client's subconscious. Auditory sensory suggestions that induce the conscious mind cause a trance state, because this condition is an open critical factor and weak supervision. The suggestions will directly reach the pain-reducing mind that has been implanted through suggestions in a hypnotic state and will trigger permanent changes that can reduce pain activity and even eliminate pain. Because the brain changes according to the hypnotist's suggestion. Five-

Table 2. Analysis of Differences in Pain Levels Before and After Intervention (n=50)

	Pain scale						P
	Pre test			Post test			
	Not painful	Mild	Moderate	Not painful	Mild		
	0	0	10	4	6	0	0.000
Guide imagery	0	0	10	0	8	2	0.003
Benson & murotal	0	0	10	0	9	1	0.003
Dhikr	0	0	10	0	9	1	0.003
Warm compresses	0	0	10	1	9	0	0.002

P = Wilcoxon signed-rank test

finger hypnosis in post-laparotomy patients is very effective in reducing the patient's pain intensity. Five-finger hypnosis consists of 4 steps that work on the subconscious mind. The advantage of five-finger hypnosis compared to other hypnotherapy is that apart from being easy to learn, it is also easy for anyone to do (Wahyudi, 2019). Hypnotherapy can also be used for mothers giving birth to reduce pain and stress levels (PS & Widiawati, 2017).

Providing relaxation and distraction therapy to patients with uterine myoma can also cause the patient to relax because it can stimulate an increase in endorphin hormones, which then stimulate a morphine-like substance supplied by the body, when peripheral neurons send signals to synapses. Synapses occur between peripheral neurons and neurons that go to the brain, where substance P conducts impulses. So endorphins block the transmission of pain impulses in the spinal cord, so that the sensation of pain is reduced (Fitriyanti & Machmudah, 2020). Based on research results, supporting theories and relevant journals. Researchers assume that hypnotherapy is a non-pharmacological pain management technique by relaxing patients, so they can stimulate the brain to release neurotransmitters, namely encephalins, and endorphins. Endorphins function to improve mood so that they can change an individual's acceptance of pain. Hypnotherapy can divert the client's attention with the suggestions given. So the client will forget the pain they are feeling.

The Wilcoxon Signed Ranks Test statistic shows a difference in the pain scale before and after giving Guide Imagery therapy with a p-value of 0.005 <α=0.05. So, it can be concluded that there is significant and significant effectiveness in providing Guide Imagery therapy in reducing pain in patients. Guided imagery is using one's imagination in a way specifically designed to achieve a particular positive effect. Guided imagery is used to relax and relieve pain and lower blood pressure, which can consist of combining slow rhythmic breathing with a mental image of relaxation and reality (Fiani, 2016). The benefits of Guide Imagery for health are reducing pain, relaxing body muscles, reducing stress levels, overcoming symptoms of depression, and maintaining health or achieving a relaxed state (Charette et al., 2014). Guide Imagery is a technique of creating an impression in the respondent's mind and then concentrating on that impression so that it can gradually reduce the respondent's perception of pain. When the patient imagines, the pain intensity will decrease because the patient's focus on pain will be diverted to pleasant imagination.

From the explanation explained above for Guide Imagery Therapy on Reducing Pain in Patients, the researchers assume that Guide Imagery Therapy is effective in reducing pain in patients. This therapy only involves imagining or imagining pleasant things so that the patient's previously tense body relaxes. And it can divert attention so that the patient forgets the pain they are feeling. The results showed that there was a difference in the pain scale in patients before being given Benson relaxation and Ar-Rahman murotal therapy and after being given Benson relaxation and Ar-Rahman murotal therapy with a p-value of 0.003 < α=0.05. So, it can be concluded that there is a meaningful and significant effect of Benson relaxation and Ar-Rahman murotal therapy in reducing pain in patients.

The effect of Benson relaxation on reducing pain is because, when an individual performs Benson relaxation, which is a relaxation technique combined with the beliefs held by the patient, Benson relaxation will inhibit sympathetic nerve activity, which can reduce oxygen consumption by the body, and then the body's muscles relax. Thus creating a feeling of calm and comfort (Rahman & Dewi, 2023). Other research explains that Benson relaxation is a development of the deep breathing relaxation method by involving the patient's belief factor in achieving a higher state of health and well-being. Benson relaxation helps the breathing process properly so that oxygen needs can be met, so the body's homeostasis becomes balanced and causes the body to become more relaxed and can reduce the pain felt by the patient (Respati, 2018). Meanwhile, murotal therapy is a therapy that uses the Al-Qur'an as a medium to help increase specific changes in the body both physiologically and psychologically which can reduce the intensity of pain felt because it has

a distracting effect on inhibition and perception (Pasaribu & Sumarni, 2023).

Pain management through murotal therapy can stimulate neuropeptides and stimulate the release of natural endogenous opioids through the stimulation of reading the Qur'an can reduce tension in the nervous system and create relaxation, providing this therapy has an impact on calm, changes in body cells and becomes a modality for reading Al -The Qur'an has a particular frequency that spreads waves that influence the brain positively and restore its balance, so that the pain felt by the client will slowly decrease (Hardianto et al., 2018).

Beta-endorphins release inflammatory mediators such as histamine, cytokines, prostaglandins, and bradykinin to inhibit nerve sensitivity to cause pain. Endorphins also work as an ejector for feelings of relaxation and providing calm, thereby releasing Gama Amino Butyric Acid (GABA), which functions as an inhibitor of pain impulses from one neuron to another by neurotransmitters in the synapse. Neurotransmitters will be stopped by the effects of the opioid beta-endorphin so that the sensory perception of pain decreases (Pranowo et al., 2021). Providing 15 minutes of Al-Qur'an murotal therapy intervention using Surah Ar-Rahman was able to reduce pain due to the release of beta-endorphin as a natural opioid which inhibits the release of inflammatory mediators so that pain impulses are reduced to be perceived (Puspitasari et al., 2023).

Based on the results of research conducted in the internal treatment room at RSUD Toto Kabila Gorontalo, the p-value was 0.003, which was smaller than the α value of 0.05, so it can be concluded statistically, that there is an effect of dhikr therapy by reducing the pain scale. Gate control theory explains that pain occurs in a person due to certain stimuli that can be blocked when an interaction occurs between the pain stimulus and the stimulus in the fibers that transmit non-painful sensations, which is blocked in the inhibitory gate circuit. This blocking can be through distraction or relaxation. Dhikr relaxation will reduce anxiety, which will also affect the intensity of pain felt by the patient (Risnah et al., 2022). Dhikr spiritual therapy will increase endorphin and enkephalin hormones, which cause calm and can reduce the perception of pain. Respondents who received dhikr therapy felt comfortable and relaxed when given the treatment, so respondents felt less pain.

Based on the results of research conducted in the internal care room at Toto Kabila Regional Hospital, the p-value of 0.002 was smaller than the value α=0.05, so it can be concluded statistically, that there is an influence of warm compresses using WWZ (Warm Water Zack) and lemon aromatherapy on the decline painful. Objective data, when given the intervention, respondents said they felt comfortable, reduced pain, and wanted to do warm compresses independently at home. Warm compress is a non-pharmacological therapy to eliminate or reduce pain by providing a feeling of warmth, meeting the need for comfort, reducing or relieving pain, and reducing the occurrence of muscle spasms by using warm water (Hidayati et al., 2021). Warm compress is a non-pharmacological therapy to eliminate or reduce pain by providing a feeling of warmth, fulfilling the need for comfort, reducing or relieving pain, and reducing the occurrence of muscle spasms by using warm water.

Applying a warm compress using Water Warm Zack (WWZ) will relax the muscles, reduce or eliminate pain, and improve blood flow (Prihandini, 2019). When providing lemon aromatherapy intervention, respondents said that apart from the fragrant smell, they also felt comfortable and even fell asleep when the lemon aromatherapy was given. Aromatherapy treatment decreased pain until the respondent did not feel it. The aroma is processed and converted by the body into action by releasing neurochemical substances in the form of endorphins and serotonin so that it has a direct effect on the olfactory organ and is perceived by the brain to provide a reaction that creates physiological changes in the body, mind, soul, and produces a calming effect on the body (Suwanti et al., 2018).

Conclusion

The results of research on 50

respondents found that non-pharmacological therapy consisting of 5-finger hypnosis, guided imagery, dhikr, beson, and murotal, warm compress with WWZ method combined with aromatherapy was proven to reduce pain intensity from moderate to mild scale. The non-pharmacological therapy should be continued by nurses. If they find a patient with pain (moderate scale) do not immediately provide analgesic treatment, which is a collaborative therapy.

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