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Pengaruh Terapi Latihan Theraband Terhadap Penurunan Nyeri Pada Pasien Osteoarthritis Di Puskesmas Citra Medika Kota Lubuklinggau

Effect Of Theraband Exercise Therapy On Pain Reduction In Osteoarthritis Patients At Puskesmas Citra Medika Lubuklinggau City

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ABSTRAK
Theraband exercise, suatu jenis latihan resistensi elastis yang memungkinkan banyak gerakan yang berbeda untuk meningkatkan kekuatan otot, mobilitas sendi, fungsi dan mengurangi nyeri sendi pada penderita osteoartritis. Masalah penelitian adalah meningkatnya pasien yang mengalami nyeri pada osteoartritis. Tujuan penelitian ini adalah untuk mengetahui pengaruh terapi latihan theraband terhadap penurunan nyeri pada pasien osteoartritis di Puskesmas Citra Medika Kota Lubuklinggau. Penelitian ini merupakan penelitian kuantitatif dengan metode pre and post test design. Pada penelitian ini, kelompok perlakuan akan mendapatkan terapi latihan theraband. Jumlah populasi yang diteliti sebanyak 253 orang, dan hanya diambil 10 sampel. Uji Wilcoxon (non parametrik) digunakan untuk menganalisa data primer dan sekunder. Hasil dari penelitian ini adalah nilai rata-rata penurunan nyeri sebelum menggunakan terapi latihan theraband pada pasien osteoartritis yaitu 5,10. Nilai rata-rata penurunan nyeri sesudah menggunakan terapi latihan theraband pada pasien osteoartritis yaitu 2,20. Ada pengaruh terapi latihan theraband terhadap penurunan nyeri pada pasien osteoartritis di Puskesmas Citra Medika Kota Lubuklinggau dengan nilai p value 0,004. Bagi pihak Puskesmas Citra Medika Kota Lubuklinggau dapat memasukan terapi latihan theraband pada kegiatan program rutin di Puskesmas Citra Medika Kota Lubuklinggau dan melaksanakan terapi latihan theraband sebagai intervensi keperawatan untuk menurunkan nyeri pada pasien osteoartritis.

Keywords :
Theraband Exercise Therapy, Pain, Osteoarthritis.

ABSTRACT
Theraband exercise, a type of elastic resistance exercise that allows many different movements to increase muscle strength, joint mobility, function and reduce joint pain in osteoarthritis sufferers. The research problem is the increase in patients experiencing pain in osteoarthritis. The purpose of this study was to determine the effect of theraband exercise therapy on reducing pain in osteoarthritis patients at the Citra Medika Health Center, Lubuklinggau City. This study is a quantitative method with a pre and post test design. In this study, the treatment group will receive theraband exercise therapy. The total population studied was 253 people, and only 10 samples were taken. The Wilcoxon test (non-parametric) was used to analyze primary and secondary data. The results of this study were the average value of pain reduction before using theraband exercise therapy in osteoarthritis patients, namely 5.10. The average value of pain reduction after using theraband exercise therapy in osteoarthritis patients was 2.20. There is an effect of theraband exercise therapy on reducing pain in osteoarthritis patients at the Citra Medika Health Center, Lubuklinggau City with a p value of 0.004.For the Citra Medika Health Center, Lubuklinggau City, they can include theraband exercise therapy in routine program activities at the Citra Medika Health Center, Lubuklinggau City and carry out theraband exercise therapy as a nursing intervention to reduce pain in osteoarthritis patients.

INTRODUCTION

Osteoarthritis (OA) is a degenerative joint disorder that causes damage to the cartilage, formation of new bone around the joint edges (osteophytes), and inflammation of the synovial membrane. The main symptoms include pain, stiffness, and reduced joint function, which can interfere with daily activities.The most common type of arthritis, osteoarthritis is also referred to as degenerative joint disease, causing pain and limitation of movement in the elderly. Symptoms include gradual progressive loss of joint cartilage, synovitis, pain, stiffness, and loss of joint mobility (LeMOne et al., 2018). Symptoms of osteoarthritis usually include pain, stiffness, swelling, and limitation of joint motion. As the most common form of arthritis, osteoarthritis is also known as degenerative joint disease, which causes pain and limitation of motion, especially in the elderly (Allen et al., 2022).The World Health Organization or WHO osteoarthritis disease in 2019, among 528 million people in all

parts of the world suffer from osteoarthritis. About 73% of people with osteoarthritis are over 55 years old, and 60% of them are women. The disease affects 365 million people, with the knee being the most commonly affected joint, followed by the hip and hand. 344 million people suffer from osteoarthritis.The prevalence of osteoarthritis is expected to rise worldwide as the population ages and the incidence of obesity and injury increases (WHO, 2019). Pain in the knee joint can be caused by age, weight, walking, climbing up and down stairs, squatting, and movement from sitting to standing. Pharmacological and non-pharmacological treatments can help reduce pain. So that efforts to treat osteoarthritis cases can be carried out conservative non-pharmacological therapy, such as theraband exercise therapy can help reduce pain, delay complications, and prevent osteoarthritis from developing (Wahyuni & Zakaria, 2021). One type of elastic resistance exercise known as theraband exercise allows a variety of movements to increase muscle strength, joint mobility, and function and reduce joint pain experienced by people with osteoarthritis (Kurniawati et al., 2020).

Theraband exercise is very cheap and lightweight, has various levels of resentment indicated by the color of the theraband, and is very versatile for physical rehabilitation. As a result, this method can be suggested as an effective way to reduce pain caused by osteoarthritis in the knee joint (Sri et al., 2021). Theraband exercise is one of the increasingly popular osteoarthritis treatment methods. The results showed that lower extremity strengthening therapy or theraband exercise is one of the most effective ways to reduce pain.

This technique improves function, reduces pain, and avoids further surgical procedures in cases of osteoarthritis.Therefore, this method is becoming popular today to reduce pain and improve functional performance in patients with osteoarthritis (Sri et al., 2021).Therapeutic interventions with theraband exercise can reduce pain in patients with osteoarthritis if given at the right dose.

Mechanisms and therapies used to reduce pain in osteoarthritis include knee flexion and extension movements, which produce concentric contractions in the quadricep femoris muscle and eccentric contractions in the hamstring, gracilis, sartorius, popliteus, and gastrocnemius muscles. This increases the dynamic strength of the muscles and improves overall muscle strength. With increased muscle strength, endurance and balance will also improve.In addition to improving muscle strength and size, it improves blood circulation and prevents inflammation, which in turn reduces pain.

RESEARCH METHODS

This study used a quantitative method with a pre and post test design. In the treatment group, the therapy given was theraband exercise.The population in this study consisted of 253 people.The sample in this study consisted of 10 people who suffered from osteoarthritis at the Citra Medika Health Center in Lubuklinggau City.

This study used samples from each member of the population who met the inclusion and exclusion criteria.In this study, theraband exercise therapy intervention will be given six times in two weeks, with a duration of 30 minutes each time. In the implementation of theraband exercise therapy, tools are used, namely theraband tools, theraband exercise SOP, observation sheets, patients are assessed for pain reduction with the Numeric Rating Scale (NRS).

Data on the results of measuring pain in osteoarthritis patients from the results of interviews using the Numeric Rating Scale (NRS) After that, observations were made to assess pain reduction by comparing pre-test and post-test results (Notoatmodjo, 2018).

RESULTS

Univariate Analysis

Table 1. Average Value of Pain Reduction Before Theraband Exercise Therapy in Osteoarthritis Patients

Variable	N	Mean	Std. Deviasi	95% CI For mean		Min- Max
				Lower	Upper	
Pain value before theraband exercise therapy	10	5,10	0,738	4,57	5,63	4 – 6

Based on table 1, the average pain in osteoarthritis patients before theraband exercise therapy is 5.10, with a standard deviation of 0.738, and an interval (95% CI) of 4.57 to 5.63. Pain in osteoarthritis patients before theraband exercise therapy is obtained from the highest value, namely 6 to the lowest, namely 4.

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Table 2 Average Value of Pain Reduction After Theraband Exercise Therapy in Osteoarthritis Patients

Variable	N	Mean	Std. Deviasi	95% CI For Mean		Min- Max
				Lower	Upper	
Pain value after theraband exercise therapy	10	2,20	0,789	1,64	2,76	1- 3

Based on Table 2, the average pain in osteoarthritis patients after theraband exercise therapy is 2.20, with a standard deviation of 0.789 and an interval (95% CI) between 1.64 to 2.76. Pain in osteoarthritis patients after theraband exercise therapy is obtained from the highest value, namely 3 to the lowest, namely 1.

Bivariate Analysis

This analysis is carried out to determine the effect of the independent variable with the dependent variable, the statistical test used is the t test, which is processed by a computerized system. One of the requirements before the t-test is carried out is to test the normality of the data, test the normality of statistical data, one of which is by looking at the normality test on the Shapiro Wilk value (Sig.) on the research variables before and after giving theraband exercise therapy. The results of the study are said to be normally distributed if the sig value. > α 0,05. The following are the results of the data normality test for each variable.

Normality Test

Table 3 Normality Test

	Tests of Normality		
	Shapiro-Wilk		
	Statistic	*Df*	*Sig.*
Pain Before	0,833	10	0,036
Pain After	0,820	10	0,025

Based on table 3 above, the data normality test shows that the pain variable in osteoarthritis patients before and after theraband exercise therapy is not normally distributed, with a significance value less than α 0.05. Therefore, bivariate analysis was performed using the Wilcoxon (nonparametric) test.

Table 4 Pain in Osteoarthritis Patients

Pain in Osteoarthritis Patients	Mean Difference	*p value*
Pain in Osteoarthritis Patients (Before - After)	2,90	0,004

The statistical test results are shown in Table 4, with a p value of 0.004, which means <0.05 (α).This concludes that there is an effect of theraband exercise therapy on reducing pain in osteoarthritis patients at the Citra Medika Health Center, Lubuklinggau City.

DISCUSSION

Based on the results of the researcher's observations using the Numeric Rating Scale (NRS), it was found that the average respondent's pain scale was 5.10 so that this pain was classified as moderate pain. This is characterized by respondents appearing to hold back pain, grimacing and restlessness.

Respondents feel pain when they want to mobilize such as walking and when they want to stand up from sitting Osteoarthritis, and the pain stops when the respondent does not mobilize. The researcher concluded that the level of pain is influenced by various things, including the age factor. With age, a person experiences changes in the muscular system, including a decrease in muscle mass and the number of muscle fibers, which can cause pain.

Age is one of the internal risk factors that influence the occurrence of osteoarthritis in the elderly. There are several interventions that are very effective in reducing joint pain and the risk of osteoarthritis in this age group. According to research by Pratama (2019), 65% of the Indonesian population aged 61 years suffer from osteoarthritis. In addition, women are more prone to osteoarthritis than men, with a significant increase after menopause.The prevalence of osteoarthritis in Indonesia is higher in women than men, with rates of around 14.9% in women and 8.7% in men (Pratama, 2019). According to Lukum (2018), the prevalence and severity of osteoarthritis increases with age.

This is due to the decreased production of chondroitin sulfate, which is the main component of cartilage, in elderly people, which can lead to cartilage fibrosis.Pain arising from osteoarthritis can cause limitation of movement, leading to weakness and instability of the knee joint. This can aggravate the condition of osteoarthritis and negatively affect daily functional activities such as worship, urination, defecation, dressing, taking care of households, and other work (Shiel, 2018).The results showed that the average pain level in osteoarthritis patients after undergoing theraband exercise therapy was 2.20, with a standard deviation of 0.789. The main goal of this management is to prevent or arrest further damage to the joints, as well as to reduce pain and joint stiffness in order to maintain patient mobility.

One method of handling pain in osteoarthritis patients is with theraband exercise therapy. This therapy is effective because it can reduce pain in patients with knee osteoarthritis through therapy given according to dosage. The mechanism of action of this therapy includes knee flexion and extension movements.

This causes concentric contractions in the quadriceps femoris and eccentric contractions in the hamstrings, gracilis, sartorius, popliteus, and gastrocnemius. This movement helps to increase the dynamic strength of the muscles, which in turn increases overall muscle strength. Thus, theraband exercise therapy has been shown to be effective in reducing pain and improving muscle function in patients with osteoarthritis (Suriani and Lesmana, 2019).

Ulfah et al. (2023) found that the analysis of the paired sample t test in the treatment and control groups resulted in a p value = 0.000 <0.05. This indicates a significant effect of treatment on reducing pain and increasing range of motion (ROM) in both groups.Statistical test results show that pain in osteoarthritis patients has a p value = 0.004, which means it is smaller than 0.05 (α). Thus, it can be concluded that theraband exercise therapy has an influence on reducing pain in osteoarthritis patients at the Citra Medika Health Center, Lubuklinggau City.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

1. The average value of pain reduction before theraband exercise therapy in osteoarthritis patients at the Citra Medika Health Center Lubuklinggau City is 5.10.
2. The average value of pain reduction after theraband exercise therapy for osteoarthritis patients at the Citra Medika Health Center Lubuklinggau City is 2.20.
3. There is an effect of theraband exercise therapy on reducing pain in osteoarthritis patients at the Citra Medika Health Center Lubuklinggau City with a p value of 0.004.

Recomendation

The results of this study are expected to provide benefits for educational institutions as a new reference, as well as broaden their horizons and nursing student skills in the application of learning and nursing care with osteoarthritis cases, especially skills in providing non-pharmacological interventions, one of which is by doing theraband exercise therapy.

It is hoped that this study can be a reference for further researchers by increasing the number of samples so that it can provide evidence base practice in osteoarthritis patients by analyzing the decrease in pain after theraband exercise therapy in osteoarthritis patients.

For Puskesmas Citra Medika Lubuklinggau City, it can make theraband exercise therapy in routine program activities at Puskesmas Citra Medika Lubuklinggau City and carry out theraband exercise therapy as a nursing intervention to reduce pain in osteoarthritis patients, in addition, make a

benner about theraband exercise therapy techniques in the form of SOPs so that they can be seen and applied by patients who seek treatment at the image medika health center, so that all patients who come can tell their families and can do theraband exercise therapy with theraband tools.

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