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Effectiveness of Range of Motion on Reducing Pain Levels in Elderly Osteoarthritis in Jatirahayu Community Health Center, Bekasi

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Abstract

Problems often faced by the elderly in physical conditions that begin to weaken, resulting in degenerative diseases such as arthritis or Osteoarthritis. Osteoarthritis has the right treatment to relieve pain in the joints. In this Osteoarthritis, the right technique will be carried out, namely non-pharmacological with ROM (Range Of Motion) movements. aims to determine the effect of providing ROM (Range Of Motion) interventions on reducing pain levels in the elderly with osteoarthritis in the Jatirahayu Bekasi Health Center area. Method: The population in this study was 37 elderly people. This sample was taken with a total of 10 respondents. This study is a study that uses a Quasi Experimental research design, with a one group pre-test post-test approach. Results: Using the Paired Sample T-Test. Based on the results of the study, the results obtained with the Paired Sample T-Test obtained a mean of 3.60000, Std. Deviation 0.96609, and Sig. (P Value) 0.000 < 0.05 concluded that there was an influence between the results of the decrease in pain scale on the data before and after ROM intervention was given. The results stated that the pain scale of respondents before and after ROM intervention was given was effective.

Keywords: Physical Conditions Range of Motion (ROM), Pain, Osteoarthritis

Introduction

Elderly or old age is the process of human growth and development until they grow old and experience a decline in the physiological function of their organs. According to WHO (World Health Organization), old age is divided into the following 4 criteria: middle age is 45-59 years, elderly is 60-74 years, old elderly is 75-90 years, very old age is over 90 years. The aging process is a process in which there is a decline in organ function and a decline in physical development that cannot be avoided. The proportion of elderly people in the world shows an increase every year. Currently, the number of elderly people in the world is estimated to reach 500

million and in 2025 it is predicted to reach 1.2 billion.

The proportion of elderly people reached 10.82% or around 29.3 million people or more than 10% of the total population of Indonesia. 63.65%, elderly people are in the age range of 60-69 years. The morbidity rate of elderly people is 22.48% and 43.22 elderly people complained about their health in the last month but 81.08% of elderly people treat themselves without visiting health facilities when experiencing complaints. Elderly people have problems that occur including physical, psychosocial, cognitive, emotional, economic problems. One of the problems is physical problems which are

Osteoarthritis or joint pain is a disease that occurs due to damage to the cartilage or joint cartilage. In 2018, based on Basic Health Research data, it showed that the prevalence of Osteoarthritis in Indonesia increased sharply to 18.6% in people over 65 years old and reached 18.9% in people over 75 years old. In Indonesia, osteoarthritis attacks 11.9% of the population as a whole, 33% of the population over 75 years old, and most often occurs in the knees, where this disease attacks 15.5% of women and 12.7% of men. In Southeast Asia, there are 27.4 million people who have Osteoarthritis problems. West Java Province has 8.84% of the 52,511 population who experience joint disease. In Bekasi City, the prevalence of joint disease reaches 7.07% of 3,238 people. When viewed from the characteristics of the age group, the age of 65 to 74 years reaches 23.54% of 2,747 people, while those aged 75 years and over are around 22.48% of 1,221 people.

Osteoarthritis problems that will arise are when an elderly person does quite heavy activities. Osteoarthritis is generally characterized by pain, crepitus, and morning stiffness especially in the knee joints. Osteoarthritis can occur in all joints but generally in the knees, hips, hands, spine and feet which are characterized by pain, stiffness, limited joint movement, swelling and loss of normal joint function. Osteoarthritis has the right treatment to relieve pain in the joints.

Osteoarthritis management in the elderly can be done in two ways, namely pharmacological therapy is an action of administering drugs, while non-pharmacological is an action by

Method

This study is a study that uses a Quasi Experimental research design,

providing physical exercise, elderly education, acupuncture and so on. In this Osteoarthritis, the right technique will be carried out, namely non-pharmacological with ROM (Range Of Motion) movements.

ROM (Range Of Motion) is an exercise performed to maintain or increase the level of integrity in its ability to move joints normally in increasing muscle mass and tone. One or all joints of the body can be used in range of motion exercises during daily activities. The types of mobilization or range of motion exercises are divided into two, namely active ROM and passive ROM. Active ROM is the client's ability to move independently, while passive ROM is a movement assisted by someone.

Based on the last results, it was obtained that ROM movements have an effect on reducing physical mobility disorders due to pain reduced from moderate to mild. It can also be concluded that in osteoarthritis patients who experience mobility disorders with joint and knee exercises in cases show that the problems experienced in both cases can be resolved.

Based on a preliminary study of the initial survey conducted by researchers on November 6, 2024 at the UPTD Jatirahayu Bekasi by interviewing 3 elderly people. The results showed that the elderly interviewed, namely 2 elderly people felt pain before going to bed at night and 1 elderly person felt pain while doing activities. When the pain recurred, 3 elderly people said the pain recurred, 3 elderly people did not do sports activities, they just left it alone to reduce the pain.

with a one group pretest-posttest design method. This study was conducted by giving a pretest first before giving an intervention, after which an intervention

was given and finally a posttest was carried out. Therefore, this type of research is included in the Quasi-experimental type.

This research was conducted in the UPTD (Regional Technical Implementation Unit) of Jatirahayu Health Center, Bekasi, precisely at the Bakung Posbindu. This research was conducted on December 27-31, 2024. The population in this study was

obtained from the elderly at the Jatirahayu Health Center in the last month of September 2024, totaling 37 people. The sampling technique used the one group pretest-posttest technique. The sample taken from all elderly in the Jatirahayu Health Center work area totaling 10 people.

Results and Discussion

A. Respondent characteristics based on general data

Table 1 Frequency Distribution of Respondent Characteristics Based on Age, Gender and Education Level

Characteristics	Frequency	Presentation
Age		
60-75	10	100%
≥ 90	0	0%
Gender		
Woman	10	100%
Man	0	0%
Level of education		
Kindergarten	0	0%
SD	0	0%
JUNIOR HIGH SCHOOL	0	0%
SENIOR HIGH SCHOOL	2	20%
Bachelor	8	80%
Total	10	100%

Based on table 1 shows that most of the 10 respondents, namely the age of 60-75 years with a frequency result of 10 stated as 100%. Female gender with a frequency result of 10 stated as 100%

and education level with a frequency result of 2 high school stated as 20%, Bachelor's degree frequency 8 stated as 80%.

B. Univariate analysis results

Table 2 Frequency Distribution of Respondents Based on Pain Scale Before and After

No	Pain Scale	<i>Pre-test</i>		<i>Post-test</i>	
		f	%	f	%
1	No Pain	0	0.0%	3	30%
2	Mild Pain	0	0.0%	6	60%
3	Moderate Pain	1	10%	1	10%
4	Severe Pain	9	90%	0	0.0%
	Amount	10	100.0%	10	100.0%

Based on table 2 shows that the frequency before the intervention was given for moderate pain was 1 respondent with a percentage of 10%

while the frequency for severe pain was 9 respondents or 90%. The frequency after the intervention was given for no pain was 3 respondents with a

percentage of 30%, mild pain was 6 respondents with a percentage of 60% and moderate pain was 1 respondent with a percentage of 10%.

C. Bivariate analysis results

Table 3 Paired Sample T-Test Distribution Results

Pain Intensity	Mean	Sd	P Value
Pretest – Posttest Range Of Motion (ROM)	3,60000	0,96609	0,000

Based on table 3 shows the results of the Paired Sample T-Test with a Sig. (P Value) of 0.000 <0.05, it is concluded that there is an influence of this ROM between the results of the decrease in the pain scale in the data before and after the intervention was given.

D. Results of Analysis of the Effect of ROM on Reducing Pain Levels in Elderly with Osteoarthritis in the Jatirahayu Health Center Area, Bekasi

Based on the results of the study in table 3 on the results of the Paired sample t-test at Posbindu Bakung (PKM Jatirahayu) obtained a mean of 3.60000, Std. Deviation 0.96609, and Sig. (P Value) 0.000 <0.05 concluded that there is an influence between the results of the decrease in pain scale on the data before and after ROM intervention was given. Thus the alternative hypothesis (Ha) which states that the pain scale of respondents before and after ROM intervention is effective or accepted.

Previous research according to Pratiwi, Jayanti Rahmadina et al in 2021 with the journal title The Effect of Range of Motion Exercises on Reducing Pain Intensity in the Elderly with Osteoarthritis obtained the results of the research journal conducted by previous researchers, namely the difference in average values before and after ROM exercise with a P Value of 0.001 <0.05 it can be concluded that Ho is rejected which means that there is an effect after ROM exercise on reducing the pain scale in the elderly with osteoarthritis at the

Budhi Dharma Bekasi Elderly Social Rehabilitation Center.

The researcher's assumption that this means that in the study it can be used to prove Ha states that ROM intervention is effective in reducing the scale of osteoarthritis pain in the elderly at Posbindu Bakung (PKM Jatirahayu). The pain scale is assessed based on human behavior, so that pain affects the expression during pain. The assessment of the pain scale can be divided into patients who have verbal abilities and can report their own pain (self-reported) and if someone with verbal disabilities is either due to cognitive impairment.

ROM exercises are a great way to build muscle and keep your joints in tip-top shape by strengthening the muscles that move your joints. In addition to these benefits, they can also reduce the risk of falls and other forms of pain by strengthening muscles that can improve your body shape and mobility. Additionally, ROM range of motion exercises can help relieve osteoarthritis pain by reducing muscle tension and increasing blood flow to the joints.

Conclusion

The majority of respondents in elderly osteoarthritis are women with a percentage of 100% accompanied by an age of 60-75 years with a percentage of 100% and also a level of education with high school results of 2 respondents (20%) and Bachelor's degree 8 respondents (80%). From the results of the study it was recognized that out of 10 respondents who had osteoarthritis

before the ROM intervention, 1 respondent had moderate pain with a percentage of 10% and 9 respondents had severe pain with a percentage of 90%.

From the results of the study it is recognized that out of 10 respondents who have osteoarthritis after ROM intervention, it was found that there was no pain in 3 respondents with a percentage of 30%, mild pain in 6 respondents with a percentage of 60% and moderate pain in 1 respondent with 10%. The results of the analysis test with the Paired Sample T-Test obtained a Mean of 3.60000, Std. Deviation 0.96609, and Sig. (P Value) 0.000 <0.05 concluded that there was an influence between the results of the decrease in the pain scale in the data before and after the ROM intervention was given. Thus the alternative hypothesis (H_a) which states that the pain scale of respondents before and after the ROM intervention was given is effective or accepted.

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