

The Effect Of Elderly Exercises On Reducing Pain In The Elderly At The Al-Islah Elderly Center

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ABSTRACT

Introduction: Elderly or old age is the final stage of human life development, starting from the age of 60 years and above. The elderly experience a decrease in the ability of the body's organs to repair themselves or change or maintain normal function. Gymnastics for the elderly is light exercise that can be done anywhere, and is a sport that is not included in the heavy exercise category, so it can be applied to the elderly.

Objective: to determine the effect of exercise on reducing pain in the elderly at the Al-islah elderly home.

Method: The research design used was pre-experimental using one class pre test-post test design. The total sample of 22 respondents was included in this research. The Wilcoxon test was used in this research with the SPSS program.

Results: test results p value = 0.000. This result shows a significant value smaller than the specified value, namely 0.05 ($p \leq 0.05$). Based on these results, H_a was accepted and H_0 was rejected, so it was concluded that H_a was accepted, meaning that there was an influence of elderly exercise on reducing pain in the elderly at the Al-Islah Elderly Home.

Conclusion: There is an influence of elderly exercise on reducing pain in the elderly with a pain score scale of mild, moderate and severe

Introduction (Cambria Bold 12 pt)

At older age, the body's organs are less able to repair themselves or replace or maintain normal function (Malo, 2021). Synovial fluid production decreases and muscle tone changes. In addition, the articular cartilage thins, the bands of tissue made of fibers that attach other bones to the joint, and becomes stiff. This can lead to decreased flexibility, which can lead to limited joint mobility in older adults. Limiting exercise and reducing joint mobility can improve mobility in older adults. Therefore, lack of joint movement results in unfavorable impacts, the body feels weak, the body's immune system decreases, and diseases often arise in old age (Huda et al. 2022).

According to WHO (World Health Organization) prevalence figures in 2014, there are 600 million elderly people in the world, and according to records of Indonesia's elderly population in 2014 by the Central Statistics Agency (BPS), the number of elderly people reached 28 million people. In 2014, the number of elderly people in East Java Province reached 2,971,004, while in Malang City it reached 836,373 in 2014 (Ministry of Health of the Republic of Indonesia, 2014 (Martini et al., 2018). Joint pain (arthritis) is known among local residents as a non-fatal disease, rheumatism, if left untreated, can cause the body's limbs to not function properly. The pain caused interferes with and limits daily



activities (Kartini, Samaran, & Markus 2019). around it. Arthritis is a well-known and widespread disease throughout the world in which inflammation occurs symmetrically, causing swelling, pain, and ultimately damaging the inside of the spine, preventing movement or work. Arthritis usually occurs in the joints of the fingers, wrists, knees, and feet (Malo, 2021).

As we age, there is a decrease in synovial fluid production in the joints and changes in muscle tone. Apart from that, there is thinning of the cartilage and stiffening of the ligaments. This is due to a decrease in flexibility as a result of which elderly people tend to limit their joint movements. Restrictions on movement and reduction of movement can worsen the mobility condition of the elderly. So, as a result of this deficiency, it can have an unfavorable effect, the body feels weak, the body's endurance decreases, sickness often occurs in the elderly (Huda et al., 2022).

Elderly exercise is light physical activity that can be done anytime, anywhere and can be exercise that is not included in the heavy category so it can be applied to the elderly. Gymnastics can help health around the spine where movements can help with nutritional and fluid needs in the body. and prevent pressure on the sciatic nerve. Gymnastics has a function in increasing the flexibility of muscles experiencing spasm and increasing nerve performance. Many studies report the long-term effects of exercise training, namely improving health and body fitness. This works by increasing blood flow along with cellular oxygenation so that it can reduce the incidence of cellular hypoxia and reduce lactic acid congestion and reduce pain. Aging exercise is one of the non-pharmacological therapies that is simple to do (Huda et al., 2022). The results of the research show that this elderly exercise is effective in treating knee pain in the elderly. Likewise, research conducted by Prawesti (2013) concluded that elderly exercise can reduce complaints of joint pain in the elderly.

Based on the results of a preliminary study on April 18 2023 at the "Al-Ishlah" Elderly Home, there were data on 34 elderly people and 3 people experienced bed rest. Researchers conducted interviews with 2 nurses that out of 34 elderly people, the nurses measured elderly pain using elderly pain intensity observation sheets. Of the elderly who complained of joint pain, 15 people experienced difficulty in carrying out daily activities with a pain scale range of 7-8 (severe pain) so depending on the nursing home staff, 11 people experienced some difficulty with a scale of 4-6 (moderate pain) so there were several activities. certain institutions had to be assisted by nursing home staff, while 8 of them said they were not disturbed in carrying out daily activities with a pain scale range of 1-3 (mild pain) so they were not dependent on nursing home staff. From the background above, it can be concluded that the aim of this research is to determine the effect of elderly exercise on reducing pain in the elderly at the Al-Ishlah elderly boarding house.

Method

The research method in this research uses the One Group Pre-experimental research type. with pretest and posttest. This research uses a cross-sectional research approach which is carried out on each research respondent with only one observation at a time. The instrument used in this research was the paindetect questionnaire. Data collection used questionnaires and observations which were used to measure elderly exercise to reduce pain in the elderly at the Al-ishlah elderly boarding house. The population was 22



respondents with a sample taken of 22 respondents . The selection of respondents in this study used total sampling. The data analysis method uses the Wilcoxon test to determine the relationship between the two variables that will be studied by the researcher .

Results

Based on the results of research conducted in July 2023, the characteristics of elderly respondents were obtained and as follows:

Table 1. Characteristics of the elderly

| No | Age | Frequency (f) | Percentage (%) |
|----|--------------------|---------------|----------------|
| 1. | Elderly Age | | |
| a. | < 60 years | 2 | 9.1 |
| b. | 60-65 years old | 14 | 63.6 |
| c. | >66 years | 6 | 27.3 |
| 2. | Education | | |
| a. | elementary school | 7 | 31.8 |
| b. | JUNIOR HIGH SCHOOL | 5 | 22.7 |
| c. | SENIOR HIGH SCHOOL | 3 | 13.6 |
| d. | College | | |
| 3. | Gender | | |
| a. | Man | 0 | 0.0 |
| b. | Woman | 22 | 100.0 |

Based on Table 1, it shows that from the 22 respondents it was found that the majority of the respondents were 60-65 years old, 14 respondents with a percentage of (63.6%), while the small number <60 years old were 2 people with a percentage (9.1%). Most of the respondents' education was elementary and middle school, namely 7 respondents with a percentage (31.8%), while a small portion had tertiary education, namely 3 respondents with a percentage (13.6%). Most of the female gender was 22 people with a percentage of 100.0%.

Table 2 Frequency distribution of respondents' education at the Al-Islah Elderly Home.

| Education | Frequency (f) | Percentage (%) |
|--------------------|---------------|----------------|
| elementary school | 7 | 32.8 |
| JUNIOR HIGH SCHOOL | 7 | 31.8 |
| SENIOR HIGH SCHOOL | 5 | 22.7 |
| College | 3 | 13 |
| Total | 22 | 100 |

Based on table 2, it shows that from 22 respondents, it was found that the majority of the respondents' education was elementary and middle school, namely 7 respondents with a percentage (31.8%), while a small portion had tertiary education, namely 3 respondents with a percentage (13.6%).



Table 3 Frequency Distribution of Gender of Respondents at the Al-Islah Elderly Home

| Gender | Frequency (f) | Percentage (%) |
|--------|---------------|----------------|
| Woman | 22 | 100 |
| Total | 22 | 100 |

Based on table 3, it shows that from 22 people it was found that the majority were female, 22 people with a percentage of 100.0%.

Table 4 Frequency Distribution of Pain Before Exercise at the Al-Islah Elderly Home .

| Group | Mean | elementary school | Min | Max |
|----------------------|------|-------------------|-----|-----|
| Pain before exercise | 3.50 | 0.859 | 2 | 4 |

Based on table 4, it can be seen that the average pain scale before exercising in the elderly is 3.50 with a median value of 4.00, a standard deviation of 0.859, while the pain scale is a minimum of 2 and a maximum of 4.

Table 5 Frequency Distribution of Pain After Exercise at the Al-Islah Elderly Home

| Group | Mean | elementary school | Min | Max |
|---------------------|------|-------------------|-----|-----|
| Pain after exercise | 2.60 | 0658 | 1 | 2 |

Based on table 5, it can be seen that the average pain scale before exercising in the elderly is 2.64 with a median value of 3.00, standard deviation 0.658, while the pain scale is a minimum of 1 and a maximum of 4.

Table 6 Bivariate Analysis Test Results of the Relationship of Elderly Exercise to Reducing Pain in the Elderly at the Al-Islah Elderly Home

| Painful | N | Sig.(2-tailed) |
|----------------------------------|----|----------------|
| Before and after senior exercise | 22 | 0,000 |

Based on table 6, the significant test results show p value = 0.000. This result shows that the significant value is smaller than the specified value, namely 0.05 ($p \leq 0.05$). Based on these results, H_a was accepted and H_o was rejected, so it was concluded that H_a was accepted, meaning that there was an influence of elderly exercise on reducing pain in the elderly at the Al-Islah Elderly Home.

Discussion

1. Pain Before Exercise in the Elderly

The research results showed that the average pain level for elderly people before exercise was 3.50, the median was 4.00, and the standard deviation was 0.859, while the pain level ranged from a minimum of 2 to a maximum of 4. Pain is a personal experience of discomfort caused by tissue damage. The pain mechanism begins with a painful stimulus. These stimuli can be biological, chemical, thermal, electrical and mechanical. Pain-producing stimuli pulse



through peripheral nerve fibers, then enter the spinal cord and travel through one of several nerve pathways before reaching the gray matter of the spinal cord. Pain information can interact with inhibitory cells, preventing painful stimuli from reaching the brain or passing unhindered to the cortex, allowing the brain to interpret the quality of pain and feel pain (Cahyono, 2017) .

Several factors that influence pain mentioned above are in line with research findings regarding the characteristics of respondents based on age and level of education. In terms of age, the majority of respondents are in early adulthood, namely up to 14 respondents. In terms of education level, the majority of respondents have elementary and middle school education. Based on the results of the respondents' characteristics, researchers said that the older they got and the more they got older the more educated older people are, the greater their understanding of pain and the greater their efforts to overcome it. Pain complaints are common in the elderly, sodium urate deposits around the joints can interfere with daily activities in the elderly. To reduce pain complaints, most elderly people use pain relievers given by nurses (Sari et al., 2018) .

Based on the researcher's opinion, from the results of the research that has been carried out, it was found that 1 person using the no pain scale was in the range of 0.2 people using the pain range ≤ 10 or intermittent pain, 4 people using the pain range 11-19 on the moderate pain scale and 15 people with the pain range pain 20-28 who experience strong pain. According to the data above, the majority of elderly people experience pain with a moderate level of pain. This may be because the elderly feel pain when carrying out daily activities, and there is a variety of uric acid crystallized in the body, so by exercising hard crystals, the uric acid pathway is actually moved, and the goal is to suppress the nerve joint pain of the elderly.

2. Decreased Pain After Exercise in the Elderly

According to the research results, it was found that the average pain scale after elderly exercise was 2.64 with a median value of 3.00 and a standard deviation of 0.658, while the minimum pain scale was 1 and a maximum of 2. This research is also similar to research conducted by Utami (2014).) that elderly exercise improves heart function and kidney filtration rate, which allows excess acid crystals Urate is excreted from the body through urine. Removing uric acid crystals that can be excreted through urine can reduce excess uric acid levels in the body, thereby reducing pain levels. researched (Putri, 2018) .

Mention that elderly exercise is very suitable for the elderly, because elderly exercise is light exercise that trains muscles and joints, and elderly exercise movements avoid jumping movements, but can still stimulate the function of organs, muscles and joints. In addition to reducing pain, low-intensity physical activity or exercise is recommended for the elderly, as exercise pain is an unpleasant sensory and emotional experience that a person experiences due to tissue damage (actual and potential). The intensity of pain can be mild, moderate, severe, or very severe. Although pain is a feeling, it has cognitive and emotional components (Bahrudin, 2018) . Based on the researcher's hypothesis, the results



of measuring joint pain before doing geriatric exercises showed that the majority of elderly people experienced joint pain in the severe pain category, then after 1 week of doing geriatric exercises it occurred as often as 6 times. Aging goes through a nice transition from strong to moderate pain. With this transformation, the grandfather was very serious about doing gymnastics for the elderly, and every movement was followed correctly. Not only that, the old man also paid attention to every beat and beat. Therefore, each change of movement is accompanied by old gymnastics music. Some elderly people experienced changes in the total pain scale score, but there were no changes in categories significantly, the possibility that every movement of an elderly person is inaccurate when doing elderly exercises, and is not in accordance with the movements being carried out, or is determined by other factors, elderly people experience a category of severe pain so that they are not optimal when doing geriatric exercises.

3. The Effect of Elderly Exercise on Reducing Pain in the Elderly at the Al-Islah Elderly Home

Based on table 5, the significant test results obtained are p value = 0.000. This result shows that the significant value is smaller than the specified value, namely 0.05 ($p \leq 0.05$). Based on these results, H_a was accepted and H_o was rejected, so it was concluded that H_a was accepted, meaning that there was an influence of elderly exercise on reducing pain in the elderly at the Al-Islah Elderly Home.

Elderly exercise is a sport that is suitable for the elderly because it is not a light exercise. Training muscles and joints apart from light exercise is done to avoid danger to the elderly. Jump, jump, cross-legged, but still stimulate the work of the body's organs, muscles and joints at light to moderate intensity. To reduce knee pain, elderly people are advised to do physical activity or light exercise such as jogging with light intensity such as gymnastics. for parents. Apart from that, regular exercise can maintain body health permanently, so the elderly must exercise.

Gymnastics for the elderly not only has the effect of relieving pain, but also has a great effect in reducing nervous stress, strengthening the respiratory system, increasing cardiac endurance increases blood flow, and reduces insomnia disorders. The researchers analyzed and found that after continuous exercise in the elderly, the degree of joint pain in the elderly decreased. After several days of exercise in older adults, the level of joint pain decreases, but the next day, the pain increases as environmental factors, age, and anxiety factors influence the client's emotional level and ultimately the level of pain. In this study, many elderly people were aged between 60-74 years. Researchers believe this is because as we age, the higher the joint pain, the less. Painful joint disorders often occur as a person ages. Generally speaking, patients with joint pain are people over 40 years old, but at this time they can be restrained by their parents. This is because people of childbearing age are less focused on health, such as unhealthy eating patterns and lifestyles

Conclusion



Research on the Effect of Elderly Exercise on Reducing Pain in the Elderly at the Al-Islah Elderly Home, concluded that:

1. The average pain scale is 3.50 at the Al-Islah Elderly Home
2. The average pain scale is 2.64 at the Al-Islah Elderly Home
3. There is an effect of exercise for the elderly on reducing pain in the elderly at the Al-Islah Elderly Home, obtained p value = $(0.000) < (0.05)$.

Ethics approval and consent to participate

Code of Ethics Number (No. 58/EC/KEP-FST/2023)

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