Original Article

THE INFLUENCE OF ELDERLY EXERCISE ON THE PHYSICAL HEALTH OF THE ELDERLY IN CANDIMULYO VILLAGE, JOMBANG REGENCY

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ABSTRACT

Background: Physical health is anything related to the physical. There are many things you can do to improve physical health, such as exercise (physical activity), meeting nutritional needs, and mental health.

Objective: This research aimed to determine the effect of elderly exercise on the physical health of elderly people in Candimulyo Village, Jombang Regency.

Method: This type of research is an experiment with a one group pre-posttest design. with a sample of 15 people or total sampling, the level of physical health was measured by measuring resting and exercise pulses. The statistical test used in this research is the t-test.

Results: Based on the results of research and hypothesis testing carried out by researchers, the results of the pre-test and post-test resting pulse t-test were t-count 80.769 while t-table 1.761 (t-count 80.769 > t-table 1.761) with a significant level of $\alpha = 0.05$ and the results of the pulse t-test The pre-test and post-test exercises were t-count 23.469 while t-table 1.761 (t-count 23.469 > t-table 1.761) with a significant level of $\alpha = 0.05$.

Conclusion: It can be concluded that "There is a significant influence of elderly exercise on the physical health of the elderly in Candimulyo Village, Jombang Regency".

Keywords: Elderly Exercise, Physical Health, Elderly.

INTRODUCTION

Physical health is anything related to the physical or physical. There are many things you can do to improve physical health, such as exercise (physical activity), meeting nutritional needs, and mental health. It is very important to maintain good physical health to support daily activities, especially for those who have entered old age. Maintaining and improving physical health can be done by doing exercise in the form of regular elderly exercise with a training frequency of 3-5 times, training duration ranging from 20 to 60 minutes. According to Sharkey et al (in Agus and Sepriyadi, 2019: 96).

Elderly exercise is a series of regular, directed and planned physical movements in the form of physical exercise which has an impact on the physical training of the elderly. Elderly

exercise is specifically designed to train the body, waist, legs and arms to provide stretching for the elderly, but these movements should not be excessive if you pay attention to elderly exercise so that participants do not move much like aerobic exercise. All types of exercise and light sports activities are very useful for inhibiting degenerative processes or the aging process. This exercise is highly recommended for those aged 45 and over.

Sports in old age can be done by paying attention to strength levels, such as brisk walking, leisurely cycling and gymnastics which can be done regularly. "Even daily activities such as cleaning the house, gardening and washing clothes for 30 minutes are also good for your health. It is important for the elderly to take part in exercise because it will help the elderly's body to stay fit and fresh, because elderly exercise can train the bones to stay strong, encourage the heart to work optimally and help eliminate free radicals in the body. All types of exercise and light sports activities are very useful for inhibiting degenerative processes or the aging process.

Research conducted by Warda Jamilah (2012) from the results of this research shows that the level of knowledge of elderly people about elderly exercise is in the good category. This can be seen from the results of respondents' answers with 67.3% in the good category, 11.5% in the medium category, and 21.1% in the very good category. The attitude of the elderly in this study was that the majority of respondents were in the good category, namely 80.7%, while the moderate category was 19.2%. Factors that support the knowledge of the elderly can be categorized as good, that is, if we look at the condition of the respondent, this allows the respondent to have good knowledge because it is supported by the respondent's experience and strong motivation to continue to obtain information. This may also be related to experience, culture and opportunities to obtain information that respondents obtain in their daily lives. As a suggestion for further research, compare the knowledge of elderly people towards the motivation to do elderly exercise for elderly people in institutions with elderly people in the community.

Based on the problems that the author found in the field, the author felt interested in researching this problem scientifically by raising the title The Effect of Elderly Exercise on the Physical Health of the Elderly in Candimulyo Village, Jombang Regency.

METHODS
Study Design

This research used a one group pretest - posttest design which was used to determine the effect of elderly exercise on the physical health of elderly people in Candimulyo Village, Jombang Regency.

Settings

This research was conducted in Candimulyo Village, Jombang Regency. This research was carried out in the even semester of the 2023/2024 academic year.

Research Subject

According to Sugiyono (2018: 126), population is a generalized area consisting of: objects/subjects that have certain quantities and characteristics determined by researchers to be studied and then conclusions drawn. The population in this study was 15 elderly people who were active in gymnastics activities.

According to Sugiyono (2018: 127), the sample is part of the number and characteristics of the population. This research uses a total sampling technique, because the entire population was sampled in this research.

Instrument

The research instruments used were pulse measurement observation sheets and Standard Operating Procedures (SOP) for treatment in the form of Elderly Exercise.

Intervention

To carry out the training process well, it is necessary to prepare a training program and training schedule. The training period in this study was 16 meetings and 3 times a week.

Data Collection

The procedures carried out in this research were conducting initial observations, identifying problems, determining the population and sample, compiling test instruments, conducting validity, reliability, level of difficulty and differentiating power of questions that had been tested. The next stage is conducting research, analyzing data by conducting prerequisite tests and hypothesis testing, interpreting research results. After conducting research from the beginning to data analysis, research results were obtained. To obtain data in this study, 2 tests were carried out, namely a test before treatment was given and a test after treatment was given.

Data Analysis

The data analysis technique used for hypothesis testing in this research is using the T-test formula which corresponds to a significance level of 0.05% with the formula. This research hypothesis was tested using t-test analysis. Before carrying out t-test analysis, a normality test will first be carried out. The data normality test was carried out using the Liliefors test with a real test level (α) = 0.05. The test criteria are that the null hypothesis is rejected if L-count obtained from observational data exceeds L-table and conversely the null hypothesis is accepted if L-count obtained is smaller than L-table.

Ethical Consideration

The implementation of this research has received permission from the Candimulyo Village and the College of Health Science of Husada Jombang with number 104.e/STIKES/HSD/III/2024.

RESULTS

Differences in Resting Pulse and Exercise Pulse Values Before and After Exercising

Table 1. Distribution of Respondents based on Resting Pulse Rate and Exercise Pulse Rate Before and After the Treatment in Candimulyo Village, Jombang Regency (n = 15).

Data	Number of Samples	Resting Pulse Rate				Exercise Pulse Rate			
		Mean	SD	Min	Max	Mean	SD	Min	Max
Pre-Test	15	111	4.7659	103	119	140	1.9639	137	143
Post-Test	15	95	4.3425	83	98	117	5.6061	107	124

Sources: Primary Data Questionnaire, 2024.

The research data above obtained an average resting pulse rate for elderly people in Candimulyo Village, Jombang Regency after being given treatment of 90 with a standard deviation of 4.3425 and the lowest value of 83, the highest value of 98.

Based on the data above, it was found that there was a decrease in the resting pulse rate of the elderly in Candimulyo Village, Jombang Regency, the average resting pulse value before being given the treatment was 111 and after being given the treatment was 90. The difference in the average measurement of the resting pulse value before and after being given the treatment was 21. There was a decrease of 19% after being given treatment.

Apart from that, based on the data above, it was also found that there was a decrease in the exercise pulse of the elderly in Candimulyo Village, Jombang Regency, the average exercise pulse value before being given treatment was 140 and after being given treatment was 117. The difference in the average measurement of exercise pulse values before and after given treatment 23. There was a decrease of 16% after being given treatment.

Test Requirements Analysis

Table 2. Normality Test Results.

Pulse Rate		N	Lo	Lt
Resting Pulse Rate	Pre-Test	15	0.083	0.220
	Post-Test	15	0.191	
Exercise Pulse Rate	Pre-Test	15	0.179	
	Post Test	15	0.124	

Sources: Primary Data Questionnaire, 2024.

Based on the results of the normality test calculations for the research samples above, it was found that the L-count (Lo) price obtained was smaller than the L-table (Lt) price at the level (α) = 0.05. Thus, it can be concluded that all groups of data in this study were taken from a normally distributed population so that they can be used to test research hypotheses.

The Effect of Elderly Exercise on Resting Pulse Rate
This hypothesis was tested using a t-test using the t-test formula. The results of this hypothesis analysis can be seen in the attachment and summarized in the table.

Table 3. T-test on resting pulse rate in elderly people in Candimulyo Village, Jombang Regency (n = 15).

Variable		n	t-count	t-table	Explanation
Resting Pulse Rate	Pre-Test	15	80.769	1.761	Significant
	Post-Test	15			

The table above showed the large influence of elderly exercise on the resting pulse value of t-count 80.769, while the t-table is 1.761 with a significance level of α = 0.05 n = 15-1. Based on the results of the t-test, t-count > t-table (80.769 > 1.761). It can be said that there is a significant influence of elderly exercise on the resting pulse rate of elderly people in Candimulyo Village, Jombang Regency.

The Effect of Elderly Exercise on Exercise Pulse Rate

This hypothesis was tested using a t-test using the t-test formula. The results of this hypothesis analysis can be seen in the attachment and summarized in the table.

Table 4. T-test on Exercise Pulse Rate in the Elderly in Candimulyo Village, Jombang Regency (n = 15).

Variable		n	t-count	t-table	Explanation
Exercise Pulse Rate	Pre-Test	15	23.469	1.761	Significant
	Post-Test	15			

The table above showed that the influence of elderly exercise on the exercise pulse value is t-count 23.469, while the t table is 1.761 with a significance level of $\alpha = 0.05$ n = 15-1. Based on the results of the t-test, t-count > t-table (23.469 > 1.761). It can be said that there is a significant influence of elderly exercise on the exercise pulse value of the elderly in Candimulyo Village, Jombang Regency.

DISCUSSION

Physically fit is a body that has a static and dynamic level of health that is able to support all activities in daily life without excessive fatigue and this fatigue will quickly recover after resting. The higher a person's level of physical health, the greater their physical work capacity and the smaller the possibility of fatigue. so that the person is said to have a high degree of physical health (Agus, 2012:17-18).

In this study, measurements of physical health levels were taken from measuring the resting pulse rate and exercise pulse rate of elderly people in Candimulyo Village, Jombang Regency. According to Bafirman (2013:86), pulse rate is often used as an indicator to determine a person's health, determine the level of physical fitness, determine the intensity of exercise, and determine the energy system used.

Based on the research results, it was found that the pre-test resting pulse rate, mean 111 standard deviation 4.7659, lowest value 103, highest value 119 and post-test mean 90, standard deviation 4.3425, lowest value 83, highest value 98. Pre-test and post-test testing using the t-test obtained a t-count of 80.769 while t-table was 1.761 with a significance level of $\alpha = 0.05$, so it can be said that "there is a significant influence of elderly exercise on the resting pulse value of the elderly in Candimulyo Village, Jombang Regency". Pre-test exercise pulse, mean 140 with standard deviation 1.9639 and lowest value 137 highest value 143 and post-test mean 117 with standard deviation 5.6061 lowest value 107 highest value 124. Pre-test and post-test testing using t-test obtained a result of t-count of 23.469 while t-table was 1.761 with a significance level of $\alpha = 0.05$, so it can be said that "there is a significant influence of elderly exercise on the exercise pulse value of the elderly in Candimulyo Village, Jombang Regency".

The pulse frequency of someone who is more trained in the resting state is lower when compared to someone who is not trained and when doing physical activity the pulse frequency of someone who is trained and untrained increases equally but for someone who is not trained the increase is faster and higher when compared to trained people. Pulse rate in work physiology has been widely accepted because it has very significant value, not only as an illustration of the ability of the cardio-vascular system to determine the appearance of

health/wellness and performance in sports but also can provide an idea of the level of physical work imposed on the body (Bafirman, 2013: 89-91).

In this research, the hypothesis proposed is "there is an influence of elderly exercise training on the physical health of elderly people in Candimulyo Village, Jombang Regency". From the calculations carried out by researchers, it can be seen that the provision of an elderly exercise program carried out 3 times a week for 16 meetings showed good changes in the physical health of the elderly in Candimulyo Village, Jombang Regency. To find out which treatment showed a more significant improvement, hypothesis testing was carried out using the t-test and it was found that t-count was greater than t-table (t-count > t-table). This means that it can be said that "there is a significant influence of elderly exercise on the physical health of the elderly in Candimulyo Village, Jombang Regency".

Based on theoretical studies, elderly exercise is an effort to improve the physical health of the increasing number of elderly groups, so it needs to be empowered and carried out correctly, regularly and regularly. Based on previous research conducted by Fitri Handayani (2019) regarding the influence of fitness exercise for elderly people on the level of physical health of elderly people at the Ngesti Rahayu Elderly Posyandu, West Ungaran in 2022 with the research results "There are differences in the health of the elderly before and after prolanis exercise treatment for the elderly at Ngesti Rahayu Posyandu 2022".

CONCLUSION

Based on the results of research and hypothesis testing carried out by researchers, the results of the pre-test and post-test resting pulse t-test were t-count 80.769, while the t-table was 1.761 (t-count 80.769 > t-table 1.761) with a significant level of $\alpha = 0.05$ and the t-test results of pre-test and post-test exercise pulse rate is t-count 23.469 while t-table is 1.761 (t-count 23.469 > t-table 1.761) with a significant level of $\alpha = 0.05$, it can be concluded that "There is a significant influence of elderly exercise on physical health elderly people in Candimulyo Village, Jombang Regency."

SUGGESTION

Based on the results of this research, elderly people can do elderly exercise to maintain their physical health. For this reason, health workers should motivate the elderly more to participate in elderly exercise optimally.

LIMITATION

This research had no limitations.

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