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Influence fitness *Aerobic Exercise* To Increase *Upper Body Strength* At cadre posya n du elderly UPT Puskesmas ngawi anvil during covid pademi-19

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Abstract

Introduction

Physical fitness is a need that must be met so that we can carry out activities of daily life well. Increasing a person's age will cause a decrease in the function of body cells which can lead to a decrease in physical fitness, one of which is muscle strength. Upper body muscle strength can affect functional activity. To achieve good muscle strength, aerobic exercise is needed. This study aims to determine the effect of aerobic exercise on increasing upper body strength in elderly posyandu cadres.

Case Presentation

The aging process occurs after the age of 50 years, it is related to the functional changes of the human body, namely the loss of body mass by 1-2% and a decrease in muscle strength of 1.5-5% every year. (Arif Pristianto, Wijianto, FR (2018). Basic Exercise Therapy. Surakarta: October 2018). Increasing a person's age will cause a decrease in the function of body cells which can lead to a decrease in physical fitness, one of which is muscle strength . (Arwih, MZ (2018). The Relationship between Arm Muscle Strength and Handstand Ability in Floor Gymnastics for Class B Penjaskesrek Students Class B Fkip Uho. Journal of Sports Science, 17(2), 8. https://doi.org/10.24114/jik .v17i2.12302). Decreased muscle strength at the age of > 40 years ranged from 40.9%. Therefore , to maintain optimal muscle condition , it is necessary to exercise physical fitness and good nutrition . (Chan, F. (2012). Strength Training. Smart Nature, 1(1), 1–8. Retrieved from https://onlinejournal.unja.ac.id/index.php/csp/article/ views/703). Brisk walking is a dynamic and rhythmic aerobic exercise that uses large muscles to provide multiple benefits and minimal side effects . (Trisnowiyanto, B. (2016). Effects of Abdominal Muscle Strengthening With Pilates Method. Physiotherapy of Health Polytechnic, Ministry of Health RI, Surakarta, VII(3), 440–444).

Management and Outcome

: Physical fitness that can be optimized is *upper body strength* , namely by increasing the *external oblique* muscle strength . The muscle strength of the upper body (*upper body strength*) can affect te rhadap of activity , namely, increasing stabilis ation body when running the daily activities , maintaining good posture and helps in functional activities, such as lifting items, sitting, standing, walking, running, and jump. If the

elderly posyandu cadres have good upper body muscle strength, it will support the implementation of maximum fitness activities . The ability of *upper body strength* can be measured by *curl up test*.

Discussion

: using the randomized one group pre-post test method, which is to find out the difference before and after being given aerobic exercise for 3 weeks and measuring upper body strength using the curl up test. Sampling was obtained as many as 20 people from prospective elderly posyandu cadres at UPT Puskesmas Paron Ngawi who were taken randomly according to inclusion and exclusion criteria. The data were processed and analyzed with the SPSS 24 software application. Results: Wilcoxon test analysis with $p = 0.000$ results which showed $p < 0.05$, it can be stated the effect of aerobic exercise on upper body strength in prospective elderly posyandu cadres.

Conclussion

Based on the research that has been done, it can be concluded that aerobic exercise carried out for 3 weeks can have an effect on increasing upper body strength in a sample of elderly posyandu cadres at UPT Puskesmas Paron.

Keyword: Aerobic Gymnastics, Upper Body Strength, Elderly Posyandu Cadres.

Introduction

Provide a context for the case and describe any similar cases previously reported.

Case Presentation

In the study, a sample of 20 people was obtained, the sample was taken randomly according to the inclusion and exclusion criteria. The sample selected as the research subject was given an explanation of the research program to be carried out. Samples who participated in the research program were asked to fill out an *informed consent.*

Prosedur Intervention

The steps in this research procedure are divided into 6 parts, namely:

1. Administrative procedures

At the preparatory stage of research administration, the following are carried out: (1) Conducting library studies or studying from books, journals, internet, files, and from various other relevant topics (2) Taking care of licensing documents to conduct research in predetermined locations (3) Making a series of schedules for conducting research (4) Preparing materials, measuring tools and instruments needed during the research (5) Preparing *informed consent* as a letter of approval to conduct research on research samples.

2. Selection procedure until l

In this study, the sample selection refers to certain predetermined characteristics, namely the inclusion criteria: (1) Age 45-75 years (2) Male and female gender (3) Does not have a grade III degenerative disease (4) Par-Q & You who fit for exercise (5) Blood pressure with systolic 160 mmHg and diastolic 100 mmHg . (6) Willing to be a research sample by signing or by thumbprint. Exclusion criteria: (1) Have been accustomed to doing similar fitness exercises in the last 3 months (2) Based on a history of medical records, there is a disease or spinal disorder and experiencing immobilization (3) Having cardiovascular and neuromuscular problems .

1. Procedure for conducting research

At the research implementation stage, it consists of: (1) Initial measurement stage, the procedures carried out include providing an explanation as well as asking for approval from the sample regarding the exercise plan, conducting assessments such as *vital sign* examination , and Par-Q & You according to the format provided, taking measurements *curl up test* before intervention, then document test results and data

recapitulation . (2) The training phase can be carried out indoors or in an open field, namely the sample doing *warming up* (warming up), then the sample doing *aerobic exercise* , then doing *cooling down* (cooling). (3) Phase covering the final measurement after sampling exercise for 3 weeks with 2 meetings, then the sample measurement *curl up test* in accordance with the format that has been prepared, the researchers noted that the results and in documentation.

Management and Outcome

The results of research that has been carried out for 3 weeks by giving *aerobic exercise* to

20 samples of elderly posyandu cadres obtained the following results :

Characteristics of Research Subjects

Characteristics of research subjects related to age, height, and weight. The entire sample characteristic data was tested by descriptive analysis on SPSS, shown in table 1, namely:

Table 1 Descriptive Test

	N		Min	Max	mean	Std. Deviation
Age	20		45	72	53.90	6,973
BB	20		51	96	66.65	11.156
TB	20		153	171	160.80	5.297

The descriptive data in the table above shows that in this study the average age was 53.90 ± 6.9 years with the minimum and maximum values being 45 years and 72 years, respectively. In the characteristics of body weight with a mean of 66.65 ± 11.1 kg with a minimum value of 51 kg and a maximum value of 96 kg, and height in this sample with a mean of 160.8 ± 5.2 cm with a minimum value of 153 cm and a maximum 171 cm.

Normality Test

Normality test in this study using the Saphiro Wilk test which is shown in table 2 as follows:

Table 2 Normality Test

	Statistics	df	Sig.
StrengthU_Pre	.901	20	.042
StrengthU_Post	.864	20	.009

The data from the normality test is said to be normal if the p value (sig) 0.05. From the table above obtained results that are not normal distribution normality test with 0,042 interventions results before and after intervention with a value of 0.009.

Homogeneity Test

Data analysis to test for homogeneity using Levene's test, is shown in table 3 below:.

Table 3 Homogeneity Test

		F	Sig.
StrengthU_Pre	Equal variances assumed Equal variances not assumed	.150	.703
StrengthU_Post	Equal variances assumed Equal variances not assumed	.005	.946

The data from the homogeneity test is said to be homogeneous if the p value (sig) 0.05. Based on the table above, the results show that the pre-post test data is homogeneously distributed with values of 0.703 and 0.946, respectively.

Hypothesis Test

The result is that the data is not normal (non-parametric) so the Wilcoxon test is used, as shown in table 4 below:

Table 4 Hypothesis Test

Test Statistics	
	StrengthU_Post - StrengthU_Pre
Z	-3.924 [b]
asymp. Sig. (2-tailed)	.000

Based on the table above, the results show that the value of sig (2-tailed) < 0.05, it can be stated that there is an effect of *aerobic exercise* on *upper body strength* in elderly posyandu cadres.

Discussion

Influence fitness *Aerobic Exercise* To Increase *Upper Body Strength* At cadre posya n du elderly UPT Puskesmas ngawi anvil during covid pademi-19 .

In this study, elderly posyandu cadres were aged between 45-72 years, which were categorized as elderly. In the elderly, neuromuscular disorders can occur which are associated with a decrease in spinal motor neurons and a decrease in the number and size of muscle fibers, causing loss of muscle performance that can harm individuals. (Sbardelotto et al., 2019). Decreased muscle strength is an important factor in the decline in functional activity and the occurrence of disability in the elderly. Reduction in the number and size of type 2 muscle fibers and a slowly progressive neurogenic process will result in a decrease in muscle mass and muscle strength. Exercise is one way to improve the decline in muscle mass and strength .

In doing everyday activities, physical fitness such as strength of the abdominal muscles is very instrumental . Aerobic exercise is an important parameter of physical fitness in the elderly. Cardiovascular fitness has the ability to improve quality of life, delay cognitive decline, and prolong functional fitness in the elderly by ensuring the functional aspects of the individual.

Brisk walking exercise as a form of aerobic exercise is a form of *moderate exercise* using brisk walking for 15-30 minutes with an average speed of 4-6 km/hour. From brisk walking exercise will provide benefits, namely to increase the maximum capacity of the heart rate, stimulate muscle contraction, breakdown of glycogen and increase tissue oxygen. In addition, it can also reduce plaque formation through increased use of fat and increased use of glucose with physical exercise .

Brisk walking is a dynamic and rhythmic aerobic exercise that uses large muscles to provide multiple benefits and minimal side effects . Aerobic exercise causes increased capillary blood vessels in the muscles, thus facilitating the diffusion of O_2 in the muscle. Thus, resulting in the ability to transport and utilize the average O_2 is greater than the untrained. It may therefore be consumed O_2 more per unit of muscle mass as well as durable in the work.

When exercise is done regularly and accompanied by good eating habits, various body systems will change in a positive way. The muscles will become stronger and can carry greater work and will show less fatigue with increasing each training period (Chan, 2012). High motivation will also affect the ability to produce maximum strength. Physical training can be applied as a non-pharmacological way to increase strength and increase muscle mass, resulting in loss of body mass. Motivation to practice physical activity can increase due to understanding the goals, benefits, and rules of exercise, being interested in the exercise being done and enjoying it.

Conclusion

Based on the research that has been done, it can be concluded that *aerobic exercise* carried out for 3 weeks can have an effect on increasing *upper body strength* in a sample of elderly posyandu cadres at UPT Puskesmas Paron Ngawi.

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