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THE EFFECTIVENESS OF THE SQUAT EXERCISE MODEL ON PHYSIOLOGICAL CHANGES IN X-FOOT PATIENTS AT EVITA SPORT CONSULTANT AND THERAPY

Lilik Evitamala[1], Hasbi[2], Mohammad Syahroni[3]
[1,2,3] Universitas Nahdlatul Ulama NTB
Alamat: Jalan Pendidikan No 6, Mataram, NTB
Email: lilikevitamala23@gmail.com, Bi_Hasbi@rocketmail.com, bungraid@gmail.com

Abstract*: Feet are an important part of the human body. The feet support the body's weight and are used for walking. If the legs experience problems, other parts of the body will feel the impact. One of the problems with the feet is X-shaped feet. Through physical exercise, people's physical fitness will increase so that it can support optimal performance. The form of training to gain leg muscle strength in weight training is squatting. Squat training is a type of weight training to increase the development of strength, especially in the leg muscles, and weights are the main basis for training. The type of research used is quasi-experimental. The subjects in this research were 12 Police Academy Candidates at Evita Sport Consultan and Therapy. Because the population was relatively small, the entire population was sampled using total sampling techniques. The variable in this research is the physiological changes in sufferers of Foot The initial test is taken before being given treatment or before being given any form of training through a prepared training program. The hypothesis proposed in this research is that there is an effectiveness of the Squat Training Model on the Physiological Changes of X-Leg Sufferers at Evita Sport Consultan and Therapy.*
Keywords: Training Models, Squats, Physiological Changes, and X-Legs

Abstrak: Kaki merupakan bagian penting dari tubuh manusia. Kaki menopang berat badan dan digunakan untuk berjalan. Jika kaki mengalami masalah, maka bagian tubuh lainnya pun akan ikut merasakan dampaknya. Salah satu masalah pada kaki adalah kaki berbentuk X. Melalui latihan jasmani maka kebugaran jasmani masyarakat akan meningkat sehingga dapat menunjang kinerja yang optimal. Bentuk latihan untuk menambah kekuatan otot tungkai pada latihan beban adalah jongkok. Latihan jongkok merupakan salah satu jenis latihan beban untuk meningkatkan perkembangan kekuatan terutama pada otot kaki, dan beban merupakan landasan utama dalam latihan. Jenis penelitian yang digunakan adalah eksperimen semu. Subyek dalam penelitian ini adalah 12 orang Calon Akpol di Evita Sport Consultan and Therapy. Karena populasinya relatif kecil, maka seluruh populasi dijadikan sampel dengan menggunakan teknik total sampling. Variabel dalam penelitian ini adalah Perubahan Fisiologis Penderita Kaki. Tes awal dilakukan sebelum diberikan pengobatan atau sebelum diberikan pelatihan dalam bentuk apapun melalui program pelatihan yang telah disiapkan. Hipotesis yang diajukan dalam penelitian ini

adalah terdapat Efektivitas Model Latihan Squat Terhadap Perubahan Fisiologis Penderita X-Leg di Evita Sport Consultan and Therapy.
Kata Kunci: Model Latihan, Squat, Perubahan Fisiologis, Kaki X

Feet are an important part of the human body. The feet support the body's weight and are used for walking. If the legs experience problems, other parts of the body will feel the impact. One of the leg disorders is X-shaped legs. abnormal.

The center of gravity does not rest between the first and second toes like a normal foot. In x-shaped legs, the two knees will be pressed together while the soles of the feet will jut out so that if you look closely the legs will form the letter The elements of physical condition required in each sport or physical activity are different. Therefore, a person's physical condition needs to be improved through systematic and continuous exercise.

Through physical exercise, people's physical fitness will increase so that it can support optimal performance. The form of training to gain leg muscle strength in weight training is squatting. Squat training is a type of weight training to increase the development of strength, especially in the leg muscles, and weights are the main basis for training.This squat exercise is done by loading the body's organs with a barbell with intensity, sets, frequency and length of exercise which can cause a training effect in the form of increasing strength, explosive power and muscle endurance.

By increasing strength, explosive power and muscle endurance, physical abilities will increase in general. Squat training can be done in two ways, namely with a Smith machine and free weights. The Smith machine really helps balance the load well for beginners so they can concentrate on the muscles being trained (Riadi, 2010:146).

RESEARCH METHODS

The research method used is a quantitative research method. Experimental research design is a research method used to find the effect of certain treatments on objects under controlled conditions (Sugiyono, 2010).This research is quantitative research. The research design used in this study was "one-group pre and post test design".

$$T_1 \rightarrow X \rightarrow T_2$$

Image 3.1: Research design

(Reference: Hulfian, 2014:38)

Information :

T1 = *pretest*

X = *Treatment*

T2 = *postest*

The population in this study were Police Academy candidates at Evita Sport Consulting and Therapy. The sampling technique used in this research is Population Study. The number of samples in this study was 11 people. The instrument used in this research is the Knee Angle Test using a meter. To obtain the data needed or needed to support the success of research, a method for data collection is needed. In this research, the method used to obtain data is the documentation method and the action test method.

The data processing method used is a statistical analysis method, because the data obtained is quantitative in the form of numbers. In statistical analysis, the data obtained must first be proven to be correct and valid. For this purpose the author uses the t-test.

RESULTS AND DISCUSSION

1. Results of the pre-test decrease in resting pulse rate

   The pre-test results are data obtained before the sample in the research, namely 20 clients at Evita Sport Consultant and Therapy who received treatment in the form of giving Squat Model Exercises.

   Table 1. Pre Test Results for Decrease in Foot Size

No	Name Of Klien	Foot Size Value X (cm)
1.	Nanda	8
2.	Lila	6
3.	Echa	8
4.	Putri	5
5.	Gefira	9
6.	Wayantara	7
7.	Astiri	6
8.	Diska	6
9.	Aurel	9
10.	Devan	9
11	Ghaftan	7

Based on the table above, we can see that clients at Evita Sport Consultant and Therapy have problems with the physiological size of X feet.

2. Post test results decrease recovery pulse rate

   The post test results are data obtained after the sample in the research, namely 20 clients at Evita Sport Consultant and Therapy, received treatment in the form of giving Squat Model Exercises.

Table 2. Post Test Results for Decreasing Foot Size X

No	Name Of Klien	Foot Size Value X (cm)
1.	Nanda	4
2.	Lila	2
3.	Echa	1
4.	Putri	0
5.	Gefira	3
6.	Wayantara	3
7.	Astiri	2
8.	Diska	0
9.	Aurel	3
10.	Devan	2
11	Ghaftan	3

Based on the table above, we can see that the total number of clients who succeeded in reducing foot size X was 2 people.

3. Hypothesis Testing

1) Formulate a hypothesis

Ha: There is the effectiveness of the squat training model on the physiological changes of X-leg sufferers at Evita Sport Consultant and Therapy

Ho: There is no effectiveness of the squat training model on physiological changes in X-leg sufferers at Evita Sport Consultant and Therapy

2) Prepare a work table

No	Nama	Skala Nilai Kaki X		D	D^2
		Pre test(T_1)	*Post test* (T_2)		
1.	Nanda	8	4	4	16
2.	Lila	6	2	4	16
3.	Echa	8	1	7	49
4.	Putri	5	0	5	25
5.	Gefira	9	3	6	36
6.	Wayantara	7	3	4	16
7.	Astiri	6	2	4	16
8.	Diska	6	0	6	36
9.	Aurel	9	3	6	36
10.	Devan	9	2	7	49
11	Ghaftan	7	3	4	16
Jumlah		**80**	**23**	**57**	**311**

3) Distribute data into formulas

$$\mathbf{t} = \frac{\sum \mathbf{D}}{\sqrt{\frac{\mathbf{N}.\sum \mathbf{D^2} - (\sum \mathbf{D})^2}{\mathbf{N-1}}}}$$

$$\mathbf{t} = \frac{\mathbf{57}}{\sqrt{\frac{\mathbf{11\,(311) - (57)^2}}{\mathbf{11-1}}}}$$

$$\mathbf{t} = \frac{\mathbf{57}}{\sqrt{\frac{\mathbf{3421-3249}}{\mathbf{10}}}}$$

$$\mathbf{t} = \frac{\mathbf{57}}{\sqrt{\frac{\mathbf{172}}{\mathbf{10}}}}$$

$$\mathbf{t} = \frac{\mathbf{57}}{\sqrt{\mathbf{17,2}}}$$

$$\mathbf{t} = \frac{\mathbf{57}}{\mathbf{4,147}}$$

$$\mathbf{t} = \mathbf{13,744}$$

4) Test the t value
The result of the t calculation based on the formula above is the calculated t, namely 13.744, which is compared with the t table at a significant level of 5% at the n-1 degree of freedom (11-1= 10), namely 1.812.

5) Draw conclusions
Because t count > t table (13.744 > 1.812) the working hypothesis is accepted so it can be concluded that "There is an effectiveness of the Squat Training Model on Physiological Changes in X-Foot Sufferers at Evita Sport Consultant and Therapy

The squat movement is one of the weight training movements, namely training using external weights. Squat jump is an exercise that aims to train the muscles: Hamstrings (biceps femoris) from the back of the upper leg, gluteus maximus. This squat style exercise needs to be continued, because it is important and has great benefits for the body in carrying out daily activities and in several sports. In the training, which is held every week in three meetings over a period of 6 weeks, it will be able to help the process of physiological changes in the client.

Physical training that is given regularly with the right dosage and sufficient frequency can cause changes in body function, increasing the ability to produce energy and providing changes to physical abilities. Regular physical exercise will result in an increase in ATP (Gusti, 2018).

Squat training is a type of weight training to increase the development of strength, especially in the leg muscles, and weights are the main basis for training.

This squat exercise is done by loading the body's organs with a barbell with intensity, sets, frequency and length of exercise which can cause a training effect in the form of increasing strength, explosive power and muscle endurance.

By increasing strength, explosive power and muscle endurance, physical abilities will increase in general. Squat training can be done in two ways, namely with a Smith machine and free weights. The Smith machine really helps balance the load well for beginners so they can concentrate on the muscles being trained

CONCLUSION

Based on the results of the analysis and discussion, it can be drawn that there is an effectiveness of the squat training model on the physiological changes of X-leg sufferers at Evita Sport Consultant and Therapy.

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