



## The Effect of Plank Training With The Concept of Training from Home During The Covid-19 Pandemic

Aghus Sifaq<sup>1</sup>, I Dewa Made Aryananda Wijaya Kusuma<sup>2✉</sup>, Achmad Rizanul Wahyudi<sup>3</sup>, Amrozi Khamidi<sup>4</sup>, Eva Ferdita Yuhantini<sup>5</sup>

Jurusan Pendidikan Kepelatihan Olahraga, Fakultas Ilmu Olahraga, Universitas Negeri Surabaya, Surabaya, Indonesia<sup>12345</sup>

### History Article

Received 04 November 2020  
Approved November 2020  
Published November 2020

### Keywords

Training from home; Plank;  
Covid-19; Handball

### Abstract

The Covid-19 pandemic that hit Indonesia, made people have to limit activities outside the home, including athletes who have to maintain their physical quality. With the implementation of large-scale social restrictions, all athletes are required to continue training even though it is done at their respective homes. Training from home is a way for athletes to maintain their condition at home. This study aims to determine the effect of plank training through the concept of training from home which is carried out on athletes who come to the provincial sports week (Porprov) in Tuban during the Covid-19 pandemic. The method used was an experimental design with a randomized control group pretest-posttest design, the sample of this study involved 24 male athletes who were born in Tuban porprov which were divided into two groups, namely the treatment group and the control group. The results of the data analysis showed an increase by an average of 3.84 meters in the treatment group and 0.02 meters in the control group. Based on the results and discussion, it can be concluded that plank training using the training from home concept has a significant improvement.

### How to Cite

Sifaq, A., Kusuma, I. D. M. A. W., Wahyudi, C. R., Khamidi, A., Yuhantini, E. F., (2020). The Effect of Plank Training With The Concept of Training from Home During The Covid-19 Pandemic. *Journal of Physical Education, Health and Sport*, 7 (2), 38-42.

© 2020 Universitas Negeri Semarang  
p-ISSN 2354-7901  
e-ISSN 2354-8231

✉ Correspondence Author:  
E-mail: dewawijaya@unesa.ac.id

## INTRODUCTION

The first Covid-19 case was recorded in Wuhan, China at the end of 2019 (Tian et al., 2020). To reduce the spread of covid-19, WHO has issued an appeal for social distancing, this action aims to secure physical distance between people (at least one meter), and reduce contact with contaminated surfaces, while encouraging and maintaining deep social relations. family and community (World Health Organization, 2020). Not least in Indonesia, social distancing is also applied but uses the term Pembatasan Sosial Berskala Besar (PSBB). This restriction applies to all activities including sports. Many sports activities have been disrupted and even stopped due to the Covid-19 pandemic. Preparations from the lowest to the highest event were also disrupted, as we all know, the biggest event in the world, namely the 2020 Japan Olympics must be postponed in 2021 and PON Papua 2020 must also be delayed in 2021.

With the implementation of PSBB, there have been several obstacles in preparation for the championship, one of which is the exercise that cannot be carried out as usual because the government has banned all activities that gather many people in one place. This is a big problem that must be faced by a coach. The coach must be able to maintain and improve the physical quality of his athletes even though the training cannot be carried out as usual. Thus a trainer is required to be able to provide a solution to this Covid-19 pandemic situation.

One concept that might be applied is training from home (TFH). Athletes can exercise at home with the training program provided by the coach. TFH monitoring can be done via the Zoom app or Goggle meet. Although the exercises can still be carried out, there are several limitations that become obstacles, namely; With a limited area, training is only focused on physical components, the use of data packages that are classified as not cheap. Similar research has also been conducted by (Boman, Lindstedt, Hemmingsson, & Bartfai, 2004) Titled "Cognitive training in a home environment", the study concluded that home-based cognitive training improved several attention and memory functions and facilitated learning strategies. However, different things will be applied to this TFH concept, namely emphasizing the psychomotor aspect. In line with the TFH concept, research conducted by (Campos & Miguel, 2020) with the title «Elastic resistance training: alternative resistance exercise in the home environment

during the Covid-19 pandemic», concludes that the use of Elastic resistance training is one of the effective training solutions to be carried out at home. In addition, a similar opinion was also expressed by (Hammami, Harrabi, Mohr, & Krusturup, 2020), namely during the Covid-19 pandemic, sports activities must be carried out even at home. Based on the explanation above, there is an urgency that a solution must be given, namely the physical condition of the atlet during a pandemic must be maintained even though the exercise cannot be carried out as usual.

The physical component to be examined in this study is core-stability. Core-stability is very important for handball players. Core stability serves to maintain the balance of the extremities and lower extremities. In addition, according to (Huxel Bliven & Anderson, 2013) dan (Wirth et al., 2017), core stability can prevent injury.

To answer this urgency, research on «The Effect of Training from Home during the Covid-19 Pandemic» is very relevant to be implemented. It is hoped that the results of this study will find answers to whether the TFH concept can be applied during a pandemic or not.

## METHOD

This study used an experimental method with a randomized control group pretest-posttest design. Where there is one treatment group or treatment group and one control group (Mahardika, 2015). The research was conducted for six weeks, with a frequency of training three times a week. Treatment is carried out in each athlete's home, with a live zoom meeting facility to monitor when the treatment is carried out.

This study involved 24 male athletes who attended the Pekan Olahraga Provinsi (PORP-ROV) Tuban who were preparing for the PORP-ROV event in 2021 The athletes used in this study were 17-21 years old .

To determine the sample in this study, using a total sampling technique where the total number of samples is equal to the total population (Sugiyono, 2016). The division of the treatment group and the control group used the ordinal pairing technique so that there were two groups with relatively the same quality. The number of treatment groups and control groups each amounted to 12 people in one group.

The instruments used in this study were the shooting test for the maturity, the plank training program for six weeks, and the zoom meeting application as a monitor when the athlete was doing treatment.

This study consisted of three stages, namely pre-test, treatment, and post-test. During the pre-test implementation procedure, athletes are given a wide area shooting test to determine the resulting throw distance. Each athlete is given three chances, the best result will be used. The implementation procedure during treatment, athletes do plank treatment according to the training program given, the frequency of training is carried out three times a week for six weeks, for monitoring is done through the zoom meeting application. The post-test implementation procedure is the same as during the pre-test implementation, namely giving a shooting test to determine the throw distance. The control group still followed the zoom but were not given special treatment.

Data analysis in research using descriptive analysis, normality test (Kolmogorov-Smirnov), paired sample test, and independent t-test.

**RESULTS AND DISCUSSION**

From the results of the research that has been done, the following data were obtained **Table 1**.

**Table 1.** Description of treatment group data

Name	Pretest	Posttest
A A R	14.10 m	15 m
A A S	8.23 m	9.60 m
S A P	10.70 m	12.70 m
Y S	14.00 m	17.70 m
K A A	15.30 m	19.10 m
MT M.	12.40 m	15.80 m
J L T	16.10 m	18.20 m
R M S	16.55 m	20.30 m
PB S.	17.55 m	20.90 m
MR	17.20 m	17.90 m
DA	10.00 m	12.70 m
FT	17.30 m	19.10 m
Mean	14.11 m	16.95 m

**Table 1** above shows the pretest and posttest results obtained by the treatment group. The average of throws produced for the pretest was 14.11 meters while the posttest was 16.95 meters. There was an increase of 2.84 meters

**Table 2.** Description of control group data

Name	Pretest	Posttest
BPT	16.40 m	16.41 m
MA	17.30 m	17.35 m
ADF	19.00 m	19.00 m

MA	18.65 m	19.60 m
AIR	15.70 m	15.72 m
EM	9.00 m	9.04 m
IN	12.80 m	12.83 m
MSN	10.70 m	10.71 m
DRW	11.80 m	11.84 m
DNV	16.89 m	16.89 m
AI	9.90 m	9.92 m
DM	18.25 m	18.26 m
Mean	14.69 m	14.79 m

**Table 2** above shows the pre-test and post-test results obtained by the control group. The average of throws produced for the pre-test was 14.69 meters while the post-test was 14.79 meters. There was an increase of 0.1 meters.

**Table 3.** Normality test

	Kolmogorov-smirnov		
	Statistic	df	Sig.
Pre_Test	.152	12	.200*
Post_Test	.097	12	.200*
Pre_CTR	.192	12	.200*
Post_CTR	.193	12	.200*

Based on the results from **Table 3** above, it shows that the Sig value obtained is > 0.05. Then the data obtained at the pre-test and post-test came from populations with normal distribution. The conclusion from the normality test of the pre-test and post-test data comes from a population with a normal distribution.

**Table 4.** Hypothesis test

	Paired sample test		
	T	Df	Sig. (2tailed)
Pre_Test	-7.506	11	.000
Post_Test	-1.268	11	.231

In **Table 4** above, the significance value of the paired t-test in the treatment group is 0.000, which is smaller than the 0.05 significance level, which means that there is an effect of plank training with the training from home method on the distance of handball athletes in Tuban district during the pandemic. covid 19. While the value obtained in the control group was 0.231 where the number was greater than the significance level of 0.05, which means the control group did not have a significant increase.

**Table 5.** Hypothesis test

	Independent test		
	T	Df	Sig. (2tailed)
Equal variances assumed	7.013	22	.000
Equal variances not assumed	7.013	12.224	.000

In **Table 5** above, the significance value of the independent t-test in the treatment and control groups is 0,000, where this number is smaller than the 0.05 significance level, which means that there is a significant difference between the treatment group and the control group.

The general objective of this study is to improve physical abilities, especially in shooting the maturity during the Covid-19 pandemic, where the treatment uses the concept of training from home. The results showed that there was a significant increase from the plank treatment that was carried out for six weeks. In addition, other findings indicate that the concept of training from home can be a solution for training during a pandemic, which requires everyone to limit movement.

The branch of the sport of maturity is classified as a sport that focuses on functional movement where the game is very dynamic and involves many joints and muscle coordination, both upper body and lower body. To get a balance between the upper and lower body, dynamic neuromuscular stabilization (DNS) is needed. Plank training is one way to improve skills (DNS), this is in line with research (Mahdieh, Zolaktaf, & Karimi, 2020) who concluded that exercise (DNS) can improve functional movement abilities.

Plank exercise is possible to do at home during a pandemic, because this exercise is static and does not require a large area during its implementation. Exercises that are carried out for six weeks have a frequency of three times a week, with 3 to 4 sets per day, each set an athlete must do a plank for 60 seconds.

The increase in shooting resulting from plank training is very relevant, because to make quality shooting a player must have good core stability and shoulder quality. In this research specifically trains the abdominal muscles/core-stability. The core musculature is divided into 2 systems, local (stabilization) and global (movement), with distinction between core-strength, core-stability, and functional exercises (Willardson, 2007). Core-stability can be trained in many

ways, one of which is using the research plank exercises that have been done by (Calatayud et al., 2017) which concluded that plank training can improve core-stability. Other studies also discuss that core training through board training can prevent injury to athletes (Blasimann, Eberle, & Scuderi, 2018). In planking, an athlete must hold the body flat and not fall for 60 seconds. In that phase, the muscles are forced to contract during plank execution, in line with the research (Kim et al., 2016) who concluded that all abdominal muscle activity increased significantly during plank exercise combined with bilateral and unilateral isometric pelvic adduction.

Other findings in this study indicate that condep training from home is very good to do, especially in exercises that do not require a large area. However, this concept has several constraints, especially related to the budget for buying a data package in implementation through the zoom application. In addition, there are obstacles to the motivation of athletes when doing isolated exercises at home. Most athletes feel bored because they cannot interact directly with other athletes. The form of exercise performed at home has been researched by (Kline, Krauss, Maher, & Qu, 2013), although the exercises carried out are different from this study, the results obtained are in accordance with this study, namely exercises carried out at home are effective to do, especially on the focus of core strength training.

## CONCLUSION

Based on the above discussion, it can be concluded that plank training with the concept of training from home can be used as a solution to maintain and improve physical condition, especially shooting strength during the Covid-19 pandemic. However, this concept cannot be implemented over a long period of time, because it can reduce the athlete's motivation in training.

## REFERENCES

- Blasimann, A., Eberle, S., & Scuderi, M. M. (2018). Effect of core muscle strengthening exercises (including plank and side plank) on injury rate in male adult soccer players: A systematic review. *Sportverletzung-Sportschaden*. <https://doi.org/10.1055/a-0575-2324>
- Boman, I. L., Lindstedt, M., Hemmingsson, H., & Bartfai, A. (2004). Cognitive training in home environment. *Brain Injury*. <https://doi.org/10.1080/02699050410001672396>
- Calatayud, J., Casaña, J., Martín, F., Jakobsen, M. D., Colado, J. C., & Andersen, L. L.

- (2017). Progression of Core Stability Exercises Based on the Extent of Muscle Activity. *American Journal of Physical Medicine and Rehabilitation*. <https://doi.org/10.1097/PHM.0000000000000713>
- Campos, M. V. A., & Miguel, H. (2020). ELASTIC RESISTANCE TRAINING: Resistance Exercise Alternative in the Home Environment During Covid-19 Pandemic. *InterAmerican Journal of Medicine and Health*. <https://doi.org/10.31005/iajmh.v3i0.77>
- Hammami, A., Harrabi, B., Mohr, M., & Krstrup, P. (2020). Physical activity and coronavirus disease 2019 (COVID-19): specific recommendations for home-based physical training. *Managing Sport and Leisure*. <https://doi.org/10.1080/23750472.2020.1757494>
- Huxel Bliven, K. C., & Anderson, B. E. (2013). Core Stability Training for Injury Prevention. *Sports Health*. <https://doi.org/10.1177/1941738113481200>
- Kim, S. Y., Kang, M. H., Kim, E. R., Jung, I. G., Seo, E. Y., & Oh, J. seop. (2016). Comparison of EMG activity on abdominal muscles during plank exercise with unilateral and bilateral additional isometric hip adduction. *Journal of Electromyography and Kinesiology*. <https://doi.org/10.1016/j.jelekin.2016.05.003>
- Kline, J. B., Krauss, J. R., Maher, S. F., & Qu, X. (2013). Core strength training using a combination of home exercises and a dynamic sling system for the management of low back pain in pre-professional ballet dancers: a case series. *Journal of Dance Medicine & Science : Official Publication of the International Association for Dance Medicine & Science*. <https://doi.org/10.12678/1089-313X.17.1.24>
- Mahardika, I. M. S. (2015). *Metodologi Penelitian*. Surabaya: Unesa University Press.
- Mahdieh, L., Zolaktaf, V., & Karimi, M. T. (2020). Effects of dynamic neuromuscular stabilization (DNS) training on functional movements. *Human Movement Science*. <https://doi.org/10.1016/j.humov.2019.102568>
- Sugiyono, P. D. *metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta, cv. (2016).
- Tian, S., Hu, N., Lou, J., Chen, K., Kang, X., Xiang, Z., ... Zhang, J. (2020). Characteristics of COVID-19 infection in Beijing. *Journal of Infection*. <https://doi.org/10.1016/j.jinf.2020.02.018>
- Willardson, J. M. (2007). Core stability training: Applications to sports conditioning programs. *Journal of Strength and Conditioning Research*. <https://doi.org/10.1519/R-20255.1>
- Wirth, K., Hartmann, H., Mickel, C., Szilvas, E., Keiner, M., & Sander, A. (2017). Core Stability in Athletes: A Critical Analysis of Current Guidelines. *Sports Medicine*. <https://doi.org/10.1007/s40279-016-0597-7>
- World Health Organization. (2020). Situation Report-18 SITUATION IN NUMBERS total and new cases in last 24 hours. In *Coronavirus disease 2019 (COVID-19)*.