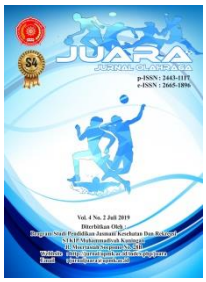
JUARA: Jurnal Olahraga
E-ISSN 2655-1896 ISSN 2443-1117
https://doi.org/10.33222/juara.v9i2.3821



THE EFFECT OF RESISTANCE BAND AND FINS TRAINING ON THE SPEED OF 50 METER FREESTYLE SWIMMING

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Article Info

Article History.

Received Mei 2024
Approved Juni 2024
Published Juli 2024

Keywords:

Swimming, Resistance Band, Fins

Abstrac

Swimming is a sport whose achievements can be measured, namely a person's swimming ability is seen based on the speed of swimming travel time (limit). Then in the swimming competition there are four types of styles, namely breaststroke, freestyle, backstroke, and butterfly. In addition, swimming is also often competed in world, provincial, regional, and association championships. The purpose of this study was to determine the demonstration of exercise by carrying out freestyle swimming exercises using resistance bands and fins in JAWS Swimming Club athletes aged 10-12 years. In this study the author used experimental research methods. The research design used was the Quasy Experiment design. The technique used here is The None Equivalent, Pretest-Posttest Design technique. The results of the regression test using resistance bands contributed 18.3%. Furthermore, from the regression test, the use of fins contributed 0.49%. This training method is expected to have an influence on the speed of freestyle swimming, besides the exercise material uses fin and resistance bands that are given programmatically, this exercise can provide motivation and barometer in sports. Swim so that exercise is no longer monotonous. One of the exercise methods carried out during research activities is exercise in a capable swimming pool and the limits of the swimming pool are adjusted to the circumstances and needs at the time of the study.

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INTRODUCTION

Swimming is a sport whose achievements can be measured, namely a person's swimming ability is seen as marketing the speed of swimming travel time (limit). Then in the swimming competition there are four types of styles, namely breaststroke, freestyle, backstroke, and butterfly (Dinisa Putra et al., 2020) . Currently, swimming has become one of the sports that many people are interested in. In addition, swimming is also often competed in world, provincial, regional, and association championships. Swimmers compete for the gold medal by being the fastest (Manullang, 2016) .

In line with (Wicaksono Danang, 2012) That achievement sport is a sport that is done to encourage maximum achievement. As the location of the foundation as a milestone in achieving achievements in the future, these achievements are carried out by clubs or sports associations in each region. In line with what was stated by (Pratiwi, 2015) in (Selles-Perezsergio, 2023) "Swimming is one sport that is fun and suitable for all circles, swimming is one type of sport that is very popular in the world of sports and among the community" means swimming is an activity that is fun and suitable for everyone. Swimming is one type of sport that is very popular in the world of sports and among the public. Swimming is one type of exercise that is refreshing, fun and also nourishes the body. Swimming has a variety of styles that you may be familiar with. Swimming style is a movement that arises when there is a will against fear (Armen Meriani, 2020). As explained by the Trinity (2005:11) in (Faradise Lekso, 2013) There are several swimming principles that swimming athletes and coaches must know, namely resistance and drive, regularity of impulse use, laws and momentum transfer. Benefits of swimming as stated by (Tresnawati, 2010) Among other things, a) build muscle work while swimming, b) improve heart function, c) relieve stress, d) increase height, e) train breathing, f) burn more calories.

The purpose of this study was to determine the comparison of training using freestyle swimming exercises using resistance bands and swimming fins to the speed of 50-meter freestyle swimming with individuals aged 10-12 years from JAWS Swimming Club athletes.

Therefore, from the observations of researchers there are shortcomings in children, one of which is the lack of hand and foot muscle strength regarding the ability of athletes to do the 50m freestyle. The results of observations and observations in several events held at the West Java Swimming Championship series I, II and III which will be held during 2023, many JAWS Swimming Club athletes are still experiencing deficiencies in the 20-meter area before the finish, especially in the 50-meter number. freestyle style. There are several factors that are considered and evaluated by researchers and coaches in order to improve the physical condition of athletes. Therefore, researchers took the initiative to conduct research using resistance bands and fins, especially in freestyle.

METHOD

This research method aims to determine the effect of resistance band and swim fin training on the speed of 50-meter freestyle swimming in Jaws Swimming Club athletes. In this study the author used experimental research methods. According to (Arikunto, 2005, hlm. 207) that: "Experimental research is research intended to know the presence or absence of a result of something imposed on the subject under investigation".

The research design used was a pseudo-experimental design. The technique used here is the technique *The None Equivalent, Pretest-Posttest Design*. Refers to (AV Zuhara, 2015), The type of research design compared with pre-experiment has better control, but there is still a drawback because it naturally does not achieve

equivalence between the control group and the experimenter.

04(Suggestion, 2016) are as follows:

Pre-test	Perlakuan	*Post-test*
0_1	**X**	**0_2**
0_3		**0_4**

O1 : Pretest value before resistance band treatment

O2 : Posttest value after resistance band treatment

X: Treatment given to the experimental group

O3 : Pretest value before fins swimming treatment

O4 : Pretest value before fins swimming treatment

FINDINGS AND DISCUSSION

Before carrying out the study, the researchers determined the number of samples, namely 30 male athletes with vulnerable ages 10-12 years, then researchers conducted a *pre-test* on April 17, 2024 at the Tirta Riang Ciparay Swimming Pool In the *pre-test* implementation followed with a total of 30 athletes, as for sampling using *purposive sampling* techniques from the number of members, namely 30 people. The *pre-test was* assisted by several Jaws Swimming Club trainers. Before carrying out the postest, athletes were given *teatment* with *fins swimming* and *resistance band* exercises as many as 12 meetings with different treatments at each meeting to perfect the research.

The implementation of *the treatment* is carried out from April 19-May 10, 2024, then the next step is given *a post-test* as the last test by swimming 50 meters freestyle to find out the improvement during *treatment.* By testing in front of the control group and experimental group to see which comparison of media is more effective after being given the *treatment*.

Findings

The results obtained from quantitative data are the result of the calculation of *the time scale* at the time of the 50-meter swim. The results obtained from the *pre-test* and *post-test* measurements are carried out using a *stopwatch* to determine the initial ability as data to be used, while the purpose of the results of this study is to answer research questions that have been set out in the problem statement and used to measure how far the achievement of research objectives. In addition, the results of this data management will be used to prove the truth in the research hypothesis.

That way after knowing the results of the average percentage that is not much different, it can be seen from the results *P-value (sig).* Two directions showing 0.000 which means H_0 accepted and H_1 rejected. This suggests that there is a significant influence exercise *Purposes* against swimming speed 50 force *freestyle* with practice methods *Purposes* and *resistance band* Therefore, Jaws Swimming Club athletes are given training treatment *fins swimming* and *resistance band* In order to accelerate the freestyle movement with effective time gain and then compare with the results of the increase from *Pretest* and *posttest.*

To find out how much influence the fins and resistance band training has on the speed of 50-meter freestyle swimming, a linear regression analysis was carried out to test the effect of one of the independent variables on the dependent variable, where the test results can be seen in the form of how much the percentage used in this study. The regression test calculation shows a result of 0.369 which means it is correlated and the r-square is 0.136. This shows a correlation which means there is an effect of fins swimming training on the speed of 50-meter freestyle

swimming and contributes to knowing what percentage of endurance training to freestyle swimming speed, The results are as follows: The results of the regression test from the resistance band carried out obtained a result of 36.6%. This result shows the overall result of the sample. Furthermore, individual results resulted in regression test results of 13.6%.

Furthermore, the results of the r-square test obtained a correlation of 0.222. This states that there is a sufficient correlation or it can be stated that there is an effect of fins training on the speed of 50-meter freestyle swimming. The individual results of this study resulted in a regression test result of 0.49%. Furthermore, the results of increased research on Jaws Swimming Club athletes contributed 0.49%. A result of 0.049 represents the overall value of the yield increase.

Model Summary

Model Summary

Pre-test	Treatment	Post-test	01	X
02	03	.136	04	491.878

a. Predictors: (Constant), Postest Resistance Band

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.369a	.136	.070	491.878

a. Predictors: (Constant), Postest Resistance Band

Discussion

Swimming is one of the activities to train the body physically and spiritually, which can be carried out by all groups. By carrying out exercise, the body's metabolism becomes smooth so that the distribution and absorption of nutrients in the body becomes more effective and efficient. The results of research conducted by researchers show an effective increase, namely using *resistance band* by 13.6% and using *fins swimming* by 0.49%. The research relevant to this research is, as follows:

1. Like the research done (Bimantara &; Purnomo, 2019) entitled "Effect of Resistance Band Leg Press and Resistance Band Lying Leg Press Exercises On Leg Muscle Strength" in this study, researchers concluded that there was a significant effect that the aids *hand paddle* May improve freestyle swimming results (at the age of 10-12 years).
2. Further research conducted (Iyakrus, dkk , 2023) entitled "The Effect Of Hand Paddle Training On 50 Meter Freestyle Swimming Speed In Beginner". Based on the results of the study, it can be concluded that there is an effect of increasing leg muscle strength after doing Resistance Band Leg Press and Resistance Band Lying Leg Press exercises
3. Further research conducted (Dinesha's son, 2020) with the title of the study "Contribution of Endurance of Arm Muscle Strength and Endurance of Leg Muscle Strength to Speed 200 Meter Breaststroke Swimming" from the results of the study showed that: (1)

The endurance of arm muscle strength contributed to the speed of 200-meter breaststroke swimming by 44.05%, (2) The endurance of leg muscle strength contributed to the speed of 200-meter breaststroke swimming by 64.32%, and (3) The endurance of arm muscle strength and the endurance of leg muscle strength together contributed to the speed of 200-meter breaststroke swimming by 80.80%. That is, the endurance of arm muscle strength and the endurance of leg muscle strength can increase the speed of swimming breaststroke 200 meters

4. As for the research conducted (Selles-Perezsergio, 2023) entitled "The Effect of Fin Training on the Leg Strength of Beginner Freestyle Swimmers at Garuda Laut Palopo" that the results show that there is an effect of swimming training using the strength of a 50-meter freestyle swimming fin on beginner swimmers, through training using Fins.

CONCLUSION

The following researchers will explain the conclusions, implications and recommendations that have been obtained from the findings in the field during the implementation of research on the effect of *resistance band* and *fins* training on the speed of swimming 50 meters freestyle which was carried out for 14 meetings. Based on the results of data analysis and discussion, the researchers carried out can be concluded as follows:

1) As for the calculation results from previous data processing and analysis, namely the fins swimming data normality test using the correlation coefficient formula in the SPSS *for windows 23.0 application,* the normality test results get significant values in the pretest results, which is 0.421 which means normal and posttest data results are 0.430. Furthermore, the normality test of *resistance band* data using the same formula gets a significant value with a pretest result of 0.453 and a postest result of 0.136 which shows normal results because it exceeds 0.05
2) The results of the homogeneity test calculation showed that the homogeneity significance value of the *fins swimming exercise variant of* the pretest *and* posttest *data was* 0.704, and the results of the *resistance band* got a value of 0.456 because the significance values were 0.704 and $0.456 > \alpha = 0.05$ which means H_0 It is accepted or can be interpreted that there is no significant difference in variance between *pretest* and *posttest.*
3) The application of *fins* and *resistance band* exercises has a positive influence on the speed of Jaws Swimming Club athletes, especially in the 50 meter *freestyle swimming competition*. This can be seen from the results of the pairwise data similarity test, where the results of *P-Value (Sig)* = $0.000 < \alpha$ 0.05 which means that the *fins* and *resistance band* training program positively affects the speed of swimming 50 meters freestyle.
4) The changes and improvements are none other than the provision of treatment given during 12 meetings to Jaws Swimming Club athletes which is a training method using *swimming fins* and *resistance bands* for diverse and structured swimming speeds and obtained an independent increase of 22.2% for the use of *fins*, and for an overall increase of 0.49%. Furthermore, for the use of *resistance bands* get a significant increase of 36.9% and for the whole get an increase of 13.6%, it can be concluded that in this study there is a significant increase.

Based on research that has been carried out for approximately 3 (three) months, the author hopes that this research will become a barometer and become an implication for readers who make interesting research, especially media resistance *band* training and

fins swimming to 50 meters swimming speed that can be applied in training and learning in elementary school or extracurricular and become a barometer for future research. The exercise methods carried out during research activities include exercises with adequate swimming pools and pool limits adjusted to the circumstances and needs during the study.

AKNOWLEDGMENTS

Thank you to all parties involved in the research that has been carried out for 14 meetings, I would like to thank the academic supervisors who have bimbo, thank you to the head coaches, coaches, athletes and parents of jaws swimming club athletes who have helped this research to completion.

REFERENCE

Arikunto, S., &; Yuliana, L. (2008). Education Management. *Yogyakarta: Aditya Media*.

Armen Meiriani. (2020). *Basic Swimming Learning Theory*.

Bimantara, Y., &; Purnomo, M. (2019). Influence of resistance band leg press and reistence band lyisng leg press exercises on leg muscle strength. *Unesa Student Journal*, 1–7.

Dinisa Putra, H., Aziz, I., Study of Sports Coaching Education, P., &; Sports Science, F. (2020). The contribution of endurance of arm muscle strength and endurance of leg muscle strength to the swimming speed of the 200-meter breaststroke. *Patriot Journal*, *2*(1), 244–255.

Evi Zuhara. (2015). The effectiveness of sociodrama techniques to improve students' interpersonal communication. *Journal of Guidance Counseling*, *151*, 10–17. Https://Doi.Org/10.1145/3132847.3132886

Faradise Lekso, M. (2013). The influence of training methods and leg power on the speed of 50-meter breaststroke swimming in age group IV athletes of the Semarang Spectrum swimming association. *Journal Of Physical Education And Sports*, *2*(1), 2. Http://Journal.Unnes.Ac.Id/Sju/Index.Php/Jpes

Iyakrus., Silvi Aryanti., Arizky Ramadhan., G. S. A. Et Al. (2023). The Effect Of Hand Paddle Training On 50 Meter Freestyle Swimming Speed In Beginner. *Journal Of Economics/ Zeitschrift Fur Nationalokonomie*, *6*(Ii), 497–506.

Manullang, J. G. (2016). *History of basic swimming techniques and swimming competition rules*. *January 2016*. Https://Www.Researchgate.Net/Publication/354783358

Selles-Perezsergio, R. (2023). The Effect Of Fins Training On Leg Strength Of Freestyle Swimming In Beginner Swimmer At Garuda Laut Palopo. *Juara : Jurnal Olahraga*, *8*(1), 658–665. Https://Doi.Org/10.33222/Juara.V8i1.2950

Sugiyono. (2016). *Quantitative, qualitative, and R&D research methods.* Alphabeta.

Tresnawati, T. (2010). Basic Swimming Techniques. In Tim Horizon (ed.), *Swimming* (p. 15). Http://103.108.187.152/Inlislite3/Opac/Detail-Opac?Id=33048

Wicaksono Danang. (2012). Contribution of Sports Supporting Science to Sports Coaching Achievement Donations. *Journal of Olaharga Achievement*, *8*(2), 91–101. Https://Doi.Org/10.21831/Jorpres.V8i2.10296