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The Effect of Resistance Band Training on Swimming Speed 50 Meters Butterfly Style Athlete Fitt Swimming Club Padang

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Abstract
This study was initiated based on the current condition indicating that the 50-meter butterfly swimming performance of athletes at the Fitt Swimming Club remains relatively low. This condition was identified through instructional training sessions conducted prior to the actual swimming competitions participated in by beginner athletes. The purpose of this study was to determine the effect of swimming training using resistance bands on 50-meter butterfly swimming performance. This study employed a pre-experimental research design. Data were collected using a 50-meter freestyle swimming ability test. The research subjects consisted of all 8 athletes of Fitt Swimming Club, selected using the total sampling technique. The study was conducted at the Fitt Swimming Club swimming pool. Data analysis was performed using inferential statistics with a t-test at a significance level of 5%. The results showed that resistance band training had a significant effect on the 50-meter butterfly swimming speed of Fitt Swimming Club athletes. The training was proven to improve the athletes' 50-meter butterfly swimming speed, with the result of tcount = 14.714 > ttable = 1.894. Therefore, H0 was rejected and Ha was accepted..
Keywords *Exercise; Speed; Butterfly Style Swimming; Resistance bands*

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INTRODUCTION *[Times New Roman, 12 point]*

Sport is an inseparable part of human life. Regular physical activity significantly contributes to the achievement of physical and psychological well-being, as well as to the development of a dignified, just, and prosperous society (Destiawan et al., 2020). Furthermore, sport plays an important role in shaping individual character and fostering qualities such as discipline, perseverance, resilience after failure, participation, sportsmanship, and the ability to think beyond materialistic principles (Imam et al., 2023).

Shanty et al. (2021) stated that several benefits of sports participation in training programs that may strengthen the cognitive abilities of athletes include: (1) reducing stress and increasing feelings of enjoyment, (2) enhancing mental capacity, and (3) improving self-confidence. Therefore, sports training can be

developed through various forms of learning advancement and athletic development.

Swimming is a competitive sport that has been practiced worldwide for a long period of time (Epriyani et al., 2022). Swimming is also considered a measurable sport in which an athlete's performance is evaluated based on swimming speed or time achievement (Saputra & Maidarman, 2018). In swimming competitions over certain distances, each stroke category consists of specific event numbers according to the distance contested. In accordance with swimming regulations, athletes are eligible to participate in the National Sports Week (PON) only if they achieve the qualifying time standard during the Pre-PON event (Rochmatullah, 2017). Competitive swimming consists of four main strokes: breaststroke, freestyle, backstroke, and butterfly stroke. Butterfly stroke is recognized as one of the most technically demanding swimming styles (Ibrahim & Barlian, 2018).

Butterfly stroke is one of the four swimming strokes contested in the Olympic Games (Arulampalam & Kunaraj P. Chelvanathan, 2023). Due to the dolphin-like movement generated by the leg action, this stroke is also commonly referred to as the dolphin stroke (Setiawan & Denay, 2022). In butterfly swimming, the body position faces downward, while both arms simultaneously pull downward, sweep backward, and move outward before recovering forward above the water surface (Oemar & Marsudi, 2019). During the backward arm pull, both legs execute a simultaneous downward kick. The coordinated movement of the arms and legs generates forward propulsion and assists the swimmer in lifting the body above the water surface for breathing (Verrelli et al., 2023). When the head re-enters the water, the arms continue the recovery phase, followed by another simultaneous leg kick. The overall leg movement resembles the motion of a dolphin's tail (Morais et al., 2021). Air is forcefully exhaled through the mouth and nose before the head emerges from the water, while inhalation occurs through the mouth when the head rises above the surface (Alawamleh & Alkasasbeh, 2024). Compared to other swimming strokes that are generally easier to master, beginner swimmers require more practice sessions to develop coordination between arm and leg movements in

butterfly stroke. Consequently, butterfly stroke is widely perceived as the most difficult swimming style to learn (Nilhakim, 2022).

Each swimming stroke is contested in several event categories, including butterfly events at 50 meters, 100 meters, and 200 meters. Backstroke events are contested at 50 meters, 100 meters, and 200 meters; breaststroke at 50 meters, 100 meters, and 200 meters; and freestyle at 50 meters, 100 meters, 200 meters, 400 meters, 800 meters, and 1500 meters (Yamakawa et al., 2024). In all of these competitive events, swimmers are required to possess excellent physical condition (Sadewa et al., 2024). In addition to cardiovascular endurance necessary for prolonged swimming performance, swimmers must also possess supporting physical components such as adaptability and muscular strength, enabling them not only to sustain prolonged exercise but also to improve swimming speed (Tinning, 2022)

Achieving optimal performance in the 50-meter butterfly event requires physical fitness, technical mastery, tactical understanding, and psychological readiness. Several important components that must be considered in swimmers include strength, speed, endurance, and adaptability (Alkatan et al., 2016). Strength is an essential component of physical fitness because it reflects the ability of muscles to generate force against resistance during activity. Speed is also a crucial component that must be developed to achieve athletic performance, as muscular strength serves as a driving factor and contributes to injury prevention (Maulana & Barikah, 2023).

According to Maglischo, as cited in Ibrahim and Barlian (2018), the technical components of butterfly swimming include: (1) body position technique, (2) arm stroke technique, (3) leg kick technique, (4) breathing technique, and (5) coordination technique. These components represent a sequence of technical skills that must be mastered to achieve optimal performance (Andrieieva et al., 2019). Proper body positioning determines the swimmer's ability to minimize resistance and drag encountered during swimming, including body alignment, movement mechanics, and water pressure (Nursalam & Aziz, 2020). Effective arm stroke technique contributes significantly to propulsion and swimming speed, while

efficient leg kicking enhances forward thrust. Breathing and coordination techniques are essential for maintaining movement efficiency and improving swimming performance. Therefore, swimmers are required to master appropriate techniques to optimize movement quality and achieve faster swimming times (Wang et al., 2023).

The 50-meter butterfly event is one of the butterfly stroke events contested in swimming competitions. In this event, swimmers are required to perform powerful arm movements that demand considerable muscular strength. Strength is one of the primary physical components needed in 50-meter butterfly swimming because it serves as the main source of forward propulsion. Arm pulling movements and simultaneous leg kicks require substantial muscular force, particularly from the arm and leg muscles (Hasanuddin, 2020).

To develop upper-body muscular strength and improve 50-meter butterfly swimming performance, various training methods may be applied, one of which is resistance band training. Rohmah (2018) stated that resistance bands are effective and practical exercise equipment made of elastic rubber materials. Resistance bands are equipped with handles to facilitate their use during training exercises. Resistance bands are available in several forms, namely: (a) tubular resistance bands made of flexible or relatively thick elastic cords with varying lengths and handles attached at both ends for hand and foot exercises; (b) flat resistance bands made of elastic materials that are longer and allow easier adjustment of resistance intensity due to their wider and more stable structure, although they are more susceptible to wear and tear; and (c) silicone-based resistance bands commonly used for rehabilitation and post-injury recovery purposes (Dolgova et al., 2017).

The researchers also observed that the arm and leg movements of 50-meter butterfly swimmers were still relatively slow, resulting in suboptimal glide phases and reduced swimming speed performance. Based on these observations, the researchers were interested in conducting a study entitled The Effect of Resistance Band Training on the 50-Meter Butterfly Swimming Speed of Athletes at FITT Swimming Club. It is expected that the findings of this study will provide valuable

insights and serve as a reference for improving the future performance of athletes at FITT Swimming Club.

METOD

This study employed a quantitative research approach using an experimental method. The research design applied in this study was the one-group pretest–posttest design. This design is categorized as a pre-experimental design and is considered a weak experimental design because it does not involve a control group or strict control of external variables. According to Sugiyono (2010), in pre-experimental research, the observed effects may not be entirely influenced by the independent variable due to the potential influence of external factors. The research design used in this study can be illustrated as follows: the participants underwent a pretest, received the treatment, and subsequently completed a posttest to determine improvements in swimming speed performance.

The study was conducted at the swimming pool of FITT Swimming Club from July 27 to August 9, 2024. The research subjects consisted of all athletes of FITT Swimming Club, totaling eight participants.

RESULT AND DISCUSSION

50-Meter Butterfly Swimming Speed Data During the Pretest

Before the implementation of leg kick and paddling exercises during the pretest, the 50-meter butterfly swimming speed data of athletes from FITT Swimming Club showed a fastest time of 39.71 seconds, a slowest time of 64.82 seconds, a standard deviation of 8.84, and a mean time of 52.27 seconds. These results are presented in the table below.

The table title is written with the title case, the subtitle is in each column, simple, not complicated, shows the existence of the table in the text (for example, see table 1), is made without vertical lines, and is written above the table

Tabel 1. Frequency Distribution of 50-Meter Butterfly Swimming Speed Data During the Pretest.

Clasification	*PreTest*	
	Frequency	Persentage

< 39.01	0	0.00%
39.01 - 47.84	3	37.50%
47.85 - 56.68	2	25.00%
56.69 - 65.53	3	37.50%
> 65.53	0	0.00%
Jumlah	8	100%

When presented in graphical form, the data can be observed in the figure below:

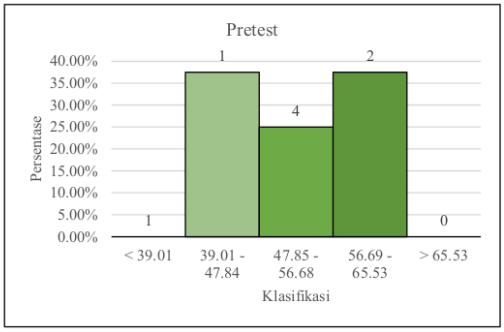

Figure 1. Diagram of the 50-Meter Butterfly Swimming Speed Data During the Pretest

50-Meter Butterfly Swimming Speed Data During the Posttest

After performing leg kick and paddling exercises throughout 16 training sessions, a final test (posttest) was conducted. The 50-meter butterfly swimming speed data of athletes from FITT Swimming Club showed a fastest time of 36.02 seconds, a slowest time of 61.25 seconds, a standard deviation of 8.82, and a mean time of 49.19 seconds. These results are presented in the table below.

Table 2. Frequency Distribution of 50-Meter Butterfly Swimming Speed Data During the Posttest.

Clasification	*Pre Test*	
	Frequencies	Persentage
< 39.01	0	0.00%
39.01 - 47.84	3	37.50%
47.85 - 56.68	2	25.00%
56.69 - 65.53	3	37.50%
> 65.53	0	0.00%
Jumlah	8	100%

When presented in graphical form, the data can be observed in the figure below;

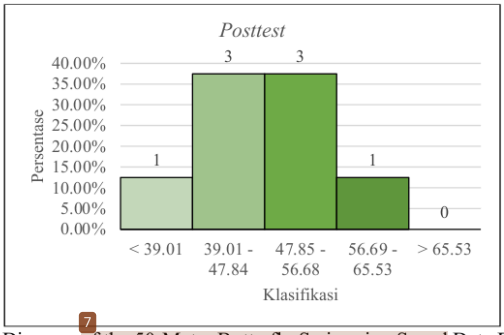

Figure 2. Diagram of the 50-Meter Butterfly Swimming Speed Data During the Posttest

Discussion

There was a significant effect of swimming training using resistance bands on the 50-meter butterfly swimming speed of athletes at FITT Swimming Club. The discussion in this study was conducted based on hypothesis testing and statistical analysis referring to the research findings obtained. Data analysis was performed using the t-test formula to determine the effect of swimming training using resistance bands on 50-meter butterfly swimming performance.

Based on the calculation results, the pretest of the 50-meter butterfly swimming event produced a mean score of 52.27 seconds with a standard deviation of 8.84. The slowest recorded time was 64.82 seconds, while the fastest time was 39.71 seconds. Meanwhile, the posttest results showed a mean score of 49.19

seconds with a standard deviation of 8.82. The slowest recorded time was 61.25 seconds, whereas the fastest time was 36.02 seconds. Comparison between the pretest and posttest mean scores demonstrated an improvement of 5.89% after the athletes received swimming training using resistance bands.

Based on the research findings, resistance band swimming training significantly improved 50-meter butterfly swimming performance, as indicated by the statistical result of tcount > ttable (14.714 > 1.894). These findings indicate that resistance band training had a positive effect on improving 50-meter butterfly swimming performance.

Previous studies have also demonstrated that swimming training programs utilizing resistance bands constitute an effective method for improving swimming performance and muscular strength because the exercises provide greater resistance and training load compared to training performed without equipment (Mardesia et al., 2021). Therefore, it can be inferred that the proposed hypothesis stating that resistance band training significantly affects the butterfly swimming performance of athletes at FITT Swimming Club is accepted.

Based on the explanation above, consistent training intensity serves as an effective medium for improving athletic performance. One of the factors influencing sports achievement is the physical condition possessed by athletes (Yendrizal et al., 2023). Therefore, swimming training involving resistance band exercises can support the improvement of 50-meter butterfly swimming performance among athletes at FITT Swimming Club because such training develops several important components, including technique, strategy, and the athletes' physical condition.

Resistance bands are highly effective exercise tools and may also serve as an alternative training method. Resistance bands are efficient and portable fitness equipment made of elastic rubber materials, requiring minimal space and offering ease of transportation. Resistance bands are considered effective exercise tools because they provide practical and efficient resistance training applications.

The function of resistance bands includes strengthening body muscles, improving joint stability, strengthening tendons and muscle endurance, particularly

the back muscles, and increasing lung capacity. Resistance band training represents a simple resistance exercise method aimed at improving muscular power, which subsequently contributes to overall muscular strength development. In addition, resistance band exercises may also support weight management.

Fundamentally, training is a process aimed at improving physical quality and developing athletes' abilities and skills in a systematic manner to achieve specific goals and performance targets. Training programs are designed to improve athletes' physical condition and optimize their performance during competitions. Training is a structured and continuous activity conducted over a prolonged period with progressive and specific loads to improve both physiological and psychological capacities in achieving athletic goals (Mardesia & Hanif, 2014). Through systematic training, athletes are able to achieve targeted performance improvements. Based on these concepts, training can generally be defined as a planned and repetitive process carried out over a certain period to achieve specific objectives, particularly improvements in physical capacity (Saputra & Maidarman, 2018).

Based on the analysis above, it can be concluded that arm training using resistance bands had a positive effect on improving 50-meter butterfly swimming speed. Swimming performance can be optimized through high-intensity swimming capacity. The purpose of this study was to improve 50-meter butterfly swimming ability through swimming exercises utilizing resistance bands. Athletic performance can be developed through various training methods. Based on the t-test analysis, the 50-meter butterfly swimming performance of athletes at FITT Swimming Club was significantly influenced by swimming training using resistance bands.

This study demonstrated that the 50-meter butterfly swimming performance of athletes at FITT Swimming Club improved after participating in resistance band training. One of the training methods applied in swimming practice was the single-arm exercise. In this exercise, one arm performs the pulling movement while the legs continuously execute kicking movements. Single-arm training is considered a basic and practical exercise. The main phases include pulling one arm backward

and recovering it forward, while the legs alternately perform upward and downward kicking movements. During breathing execution, the swimmer's head may face forward or sideways to facilitate inhalation. Since single-arm practice simplifies movement patterns and produces less fatigue compared to full-stroke swimming, athletes can perform longer training durations. In practice, swimmers perform freestyle movements using only one arm while the other arm remains positioned alongside the body or extended forward. The exercise is completed over a 50-meter distance using the left arm and another 50-meter distance using the right arm.

At FITT Swimming Club, the improvement in swimming performance obtained through resistance band training was greater compared to swimming training performed without equipment. The improvement achieved through resistance band training reached 5.89%. These findings indicate that swimming training using resistance bands produced better results in improving 50-meter butterfly swimming performance.

CONCLUSION

There was a significant effect of resistance band training on the 50-meter butterfly swimming performance of athletes at FITT Swimming Club. The t-test analysis yielded a tcount value of 14.714, while the ttable value was 1.894 at a significance level of $\alpha = 0.05$ with $n = 8$. Therefore, tcount > ttable (14.714 > 1.894), indicating a statistically significant effect.

The effectiveness of the training program was also reflected in the difference between the mean scores, where the pretest mean was 52.27 seconds and the posttest mean was 49.19 seconds. Since performance was measured in units of time, lower values indicate better swimming performance. These findings demonstrate that resistance band training improved the 50-meter butterfly swimming speed of athletes at FITT Swimming Club.

REFERENCES

Alawamleh, T., & Alkasasbeh, W. (2024). Exploring the correlation between physical fitness and kinematic parameters in butterfly stroke among physical

education students. *International Journal of Human Movement and Sports Sciences*, 12(2), 302–308. https://doi.org/10.13189/saj.2024.120204

Alkatan, M., Baker, J. R., Machin, D. R., Park, W., Akkari, A. S., Pasha, E. P., & Tanaka, H. (2016). Improved function and reduced pain after swimming and cycling training in patients with osteoarthritis. *Journal of Rheumatology*, 43(3), 666–672. https://doi.org/10.3899/jrheum.151110

Andrieieva, O., Hakman, A., Kashuba, V., Vasylenko, M., Patsaliuk, K., Koshura, A., & Istyniuk, I. (2019). Effects of physical activity on aging processes in elderly persons. *Journal of Physical Education and Sport*, 19(4), 1308–1314. https://doi.org/10.7752/jpes.2019.s4190

Arulampalam, I. Y., & Kunaraj P. Chelvanathan, A. A. A. B. (2023). Pengaruh latihan push up dan resistance band terhadap kecepatan renang gaya bebas 50 meter pada UKM Renang Universitas PGRI Semarang. *Journal of Engineering* Research, 1–15.

Destiawan, M. C., Adi, S., & Roesdiyanto. (2020). Gelanggang pendidikan jasmani Indonesia. Gelanggang Pendidikan Jasmani Indonesia, 3(2), 82–90.

Dolgova, V. I., Belousova, N. A., Mamylina, N. V., Vorozheykina, A., & Bogachev, A. N. (2017). Impact of physical activity of correctional orientation in the form of combined fitness and swimming on the psychophysiological state of 40–45-year-old women. *Journal of Physical Education and Sport*, 17(2), 905–909. https://doi.org/10.7752/jpes.2017.02138

Epriyani, Imansyah, F., & Akhbar, M. T. (2022). Pengaruh latihan beban menggunakan karet air di pinggang terhadap kecepatan renang 50 meter gaya bebas pada atlet PPLPD Kabupaten Musi Banyuasin. *Jurnal Penjaskesrek*, 9(2), 1–15. https://doi.org/10.46244/penjaskesrek.v9i2.1887

Hasanuddin, M. I. (2020). Korelasi kekuatan otot lengan, kekuatan otot tungkai dan daya ledak tungkai terhadap kemampuan renang gaya punggung 50 meter pada mahasiswa Penjaskesrek STKIP Paris Barantai Kotabaru. *Cendekia: Jurnal Ilmiah Pendidikan*, 8(2), 153–162. https://doi.org/10.33659/cip.v8i2.168

Ibrahim, I. M., & Barlian, E. (2018). Kualitas teknik renang gaya kupu-kupu atlet PR. Tirta Kaluang Padang. https://doi.org/10.1007/978-94-007-0753-5_2337

Imam, K., Untung, M., & Lajau, M. L. (2023). Hubungan kekuatan otot tungkai dan kecepatan terhadap kelincahan pada anggota persatuan bulutangkis di Ngemplak, Sleman. *Jurnal Ilmu Kesehatan Bhakti Husada: Health Sciences Journal*, 14(2), 293–298. https://doi.org/10.34305/jikbh.v14i02.834

Mardesia, P., Dlis, F., & Sukur, A. (2021). The influence of teaching inclusion style on destination swimming learning. *Advances in Health Sciences Research*, 35, 365–368. https://doi.org/10.2991/ahsr.k.210130.079

Mardesia, P., & Hanif, A. S. (2014). Teaching styles and motivation in learning breast stroke in swimming. *Asian Social Science*, 10(5), 2–6. https://doi.org/10.5539/ass.v10n5p2

Maulana, A., & Barikah, A. (2023). Pengaruh latihan resistance band terhadap kemampuan menembak pemain bola basket. *Jurnal Porkes*, 6(2), 370–385. https://doi.org/10.29408/porkes.v6i2.21312

Morais, J., Barbosa, T. M., Lopes, V. P., Marques, M. C., & Marinho, D. A. (2021). Propulsive force of upper limbs and its relationship to swim velocity in the butterfly stroke. *International Journal of Sports Medicine*, 42(12), 1105–1112. https://doi.org/10.1055/a-1386-4985

Nilhakim. (2022). Pengaruh latihan resistance band terhadap kecepatan renang 50 meter gaya kupu-kupu pada atlet Ocean Club Kota Jambi. *Cerdas Sifa Pendidikan*, 11(2), 97–108. https://doi.org/10.22437/csp.v11i2.19658

Nursalam, H., & Aziz, I. (2020). Kontribusi daya tahan kekuatan otot tungkai dan daya tahan kekuatan otot lengan terhadap kecepatan renang 100 meter gaya bebas. *Jurnal Patriot*, 3(1), 234–244.

Oemar, T. M., & Marsudi, I. (2019). Evaluasi program latihan atlet Puslatda cabang olahraga renang NTB. *Prestasi Olahraga*, 2(1), 1–11.

Rochmatullah, M. C. (2017). Hubungan antara kekuatan otot lengan, kekuatan otot perut, dan kekuatan otot tungkai terhadap kecepatan berenang 50 meter gaya bebas (Studi pada Putri Indonesia Muda Gresik). Universitas Negeri Surabaya.

Rohmah, M. Q. (2018). Pengaruh latihan chest press resistance band dan push up terhadap kekuatan otot lengan mahasiswa Universitas Negeri Surabaya. *Jurnal Prestasi Olahraga,* 1(4), 1–16. https://jurnalmahasiswa.unesa.ac.id/index.php/jurnal-prestasi-olahraga/article/view/26211

Sadewa, Y. R., Sumaryanto, S., Sumarjo, S., & Ika, K. Y. (2024). Relationship of muscle strength, power, and leg flexibility with the swim start of the butterfly style. *Retos*, 55, 163–169. https://doi.org/10.47197/retos.v55.103106

Saputra, D., & Maidarman. (2018). Analisis teknik gerak renang gaya bebas. *Jurnal Patriot*, 1(2), 799–809.

Setiawan, Y., & Denay, N. (2022). Kontribusi kekuatan otot lengan dan kekuatan otot tungkai terhadap kecepatan renang gaya bebas 50 meter. *Jurnal Performa Olahraga*, 7(1), 53–64. https://doi.org/10.24036/jpo300019

Shanty, E., Ridwan, M., Argantos, A., & Setiawan, Y. (2021). Kontribusi kekuatan otot lengan, kekuatan otot tungkai dan kekuatan otot punggung terhadap kecepatan renang gaya bebas 50 meter. *Jurnal Patriot,* 3(2), 179–191. https://doi.org/10.24036/patriot.v3i2.703

Sugiono. (2010). Metode penelitian kuantitatif, kualitatif dan R & D. CV Alfabeta.

Tinning, R. (2022). Ruminations on reflection and critical pedagogy in sport coaching. *Sports Coaching Review*, 11(1), 87–107. https://doi.org/10.1080/21640629.2021.1984045

Verrelli, C. M., Romagnoli, C., Colistra, N., Ferretti, I., Annino, G., Bonaiuto, V.,

& Manzi, V. (2023). Golden ratio and self-similarity in swimming: Breast-stroke and the back-stroke. Frontiers in Human Neuroscience, 17. https://doi.org/10.3389/fnhum.2023.1176866

Wang, L., Li, S., Wei, L., Ren, B., & Zhao, M. (2023). The effects of exercise interventions on mental health in Chinese older adults. *Journal of Environmental and Public Health*, 2022, 1–11. https://doi.org/10.1155/2023/9849045

Yamakawa, K. K., Nishiwaki, R., & Sengoku, Y. (2024). Fatigue-related changes of muscle coordination during a maximal 100-m butterfly stroke swimming: A case study. *42nd International Society of Biomechanics in Sports Conference Proceedings*, 1034–1037.

Yendrizal, Y., Yenes, R., Mukhtarsyaf, F., Pratama, A. O., & Okilanda, A. (2023). Sosialisasi pelatihan kondisi fisik atlet di KONI Kabupaten Agam Provinsi Sumatera Barat. *Wahana Dedikasi: Jurnal PKM Ilmu Kependidikan*, 6(1), 57–63

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