Palembang *City Karate Forki Athlete's Punching Technique Profile Analysis*

Puput Sekar Sari [1*,] Heny Setyawati[2], Harry Pramono[3] , Sulaiman[4]

[1, 2, 3, 4] Fakultas Ilmu keolahragaan Universitas Negeri Semarang
Corresponding author: puput_sekar@students.unnes.ac.id

Abstract: Ability to strike technique is very important to gain points in karate, especially kumite competitions. This research aims to determine the profile of the punching technique abilities of Palembang City Forki karate athletes. This research is a survey research with a descriptive design. The subjects of this research were all karate athletes assisted by Forki in Palembang City, totaling 20 male athletes. The data collection technique uses a survey with the "Puput Punch Speed" measuring instrument, which consists of 2 test items, namely Gyaku Tsuki's punch speed and Kizami Tsuki's punch. The data analysis technique uses descriptive analysis with percentages based on categorization norms. The results of the research obtained a profile of the Gyaku Tsuki punching speed technique with minimum speed = 3.0, maximum speed 4.1, mean value = 3.37 and Std. Dev = 0.32 with sufficient category and kizami tsuki with average minimum speed = 3.1, maximum speed 4.2, mean value = 3.46 and Std. Dev = 0.31. with a sufficient category so that it can be concluded that the punching technique ability profile in the category of gyaku tsuki and kizami tsuki punching speed of karate athletes assisted by Forki City of Palembang is sufficient.

Keywords: Punching Speed, Karate, Profile Analysis

INTRODUCTION

Martial arts is a sport used to survive and defend oneself against threats that come from outside or other people. Karate is a branch of martial arts that has long developed in Indonesia. Karate originates from Japan and is inspired by the Chinese martial art, Kempo. Literally, the word karate consists of two kanji, namely "kara" (empty) and "te" (hand). So, karate can be defined as a martial sport that focuses on precise attacks with kicks and punches without tools. Karate is also sought after by students with the aim of improving physical condition, fitness, self defense and achievement. In fact, many children take part in karate for achievements in order to support their careers in continuing their studies (L. D. Pranata et al., According to Amertha, Aji, etc. (2020) Karate is a type of martial art that has a hard style that uses various physical techniques such as parrying. , punches, dodges and kicks using stances. According to Sari, Sekar.P & Salmah, Ayu (2020) "Karate can be done at any

time and by anyone without conditions that limit someone from doing karate so it is very possible for someone to excel. in the sport of karate "symbolon (2013) revealed that karate is different from other martial arts sports, because this sport prioritizes the art of movement, meaning that this sport does not injure other opponents or is often said not to be taken out of context when competing. The scores that are calculated are the athlete's movements seen in kata and kumite competitions. Karate sports development is evenly distributed in every province, one of which is the Student Sports Education and Training Center (PPLP), this training is a Ministry of Youth and Sports program run by Provincial Dispora throughout Indonesia. To recruit PPLP athletes, tests and measurements are carried out on biomechanics and karate techniques. Ideally, in sports tests and measurements, especially karate, coaches use tools to facilitate the process of assessing physical component abilities and karate techniques so that they can be used as a basis for coaches in selecting athletes and determining match numbers according to the athlete, physical condition and technique. The reality that occurs in PPLP athlete selection activities and evaluation of PPLP athletes and athletes assisted by Forki is that there are several aspects of athletes' abilities that do not yet have testing aids and are still measured manually. Karate punching techniques are one of the athlete selection test materials that still use conventional test instruments. The benefit of this technology is that the results or assessments are more objective. This is proven by the use of technology in the sports sector which has positive parameters and is proven to be able to increase accuracy. The main tool that is often used and is still manual, such as measuring the speed of kicks, punches, and a combination of the two, is still using a stopwatch. Therefore, it is necessary to innovate the measuring instruments used so that they can save energy and time.

The karate punch test is used to determine the speed and accuracy of an athlete's punches. One of the important elements in karate is punch speed. Speed is very necessary and can influence a person's performance both when attacking and defending E. van der Kruk (in Ihsan, Nurul. et al: 2018). In karate competitions, punching techniques have a fairly large percentage, this statement is based on the research results of Fendrian. %. Meanwhile, for female athletes, the success rate for punch attack techniques in gaining points was 13% and the success rate for kick attack techniques was 2%. In every match, all karateka use punching techniques to seek victory with various variations. Karateka must try to throw punches that are difficult for the opponent to anticipate. This is in line with Jay's opinion. V, & M.N. (2019) "In competition, scoring points accurately and quickly is more important than delivering strong blows. Therefore, punches find a very important place in Kumite karate, especially the gyaku tsuki punch. The Gyaku tsuki punch also known as the reverse punch is the most frequently used punch in competition. The aim of this punch is to hit the target at medium distance in a very short time to produce maximum power."

Speed is very necessary and can affect a person's performance both when attacking and defending. Muhammad et al (2019). This fast, accurate and powerful blow targeting the solar plexus is an important technique for gaining points during kumite (Zhu et al., 2020b). To produce fast and precise punches, you must pay attention to factors that can train punch speed. Flexibility is defined as the ability of joints to carry out movements over a wide range (Escalona et al., 2021), while arm muscle strength plays a role in contracting under resistance to achieve maximum movement (Błaszczyszyn et al., 2019), both of which influence athlete performance. when competing, especially as a basis for carrying out attacks (Oscar et al., 2020).

Recruitment of PPLP athletes is carried out once a year, while evaluation of PPLP athletes and athletes trained by Forki is carried out every 3 months. Based on the above background, the researcher wishes to help karate trainers in measuring the punching speed of athletes trained by Forki City of Palembang. This measurement aims to evaluate athletes, the technique measured is the punch speed of Gyaku Tsuki and Kizami Tsuki using a karate punch speed measuring tool that the researchers have, namely "PUPUT PUNCH SPEED". This tool is expected to provide valid hitting speed data.

METHOD

This research is quantitative descriptive. The method used in this research is a survey method using data collection techniques in the form of tests and measurements. The data collection technique in this research uses tests and measurements whose results will be described. The data collected in this research is data from measurement tests obtained using the hitting ability test of athletes trained by Forki City of Palembang in 2024. This measurement test is carried out as a simulation and evaluation of athletes who are running long-term regional training, carried out every 3 months. The tests carried out were the Gyaku Tsuki and Kizami Tsuki punch speed tests using a microcontroller-based measuring instrument, namely "Puput Punch Speed".

The population in this study were all karate athletes assisted by Forki in Palembang City. Determination of the sample in this study used total sampling, as many as 20 male athletes. The data collection technique in this research uses tests and measurements whose results will be described. The data collected in this research is data from measurement tests obtained using the punching ability test of athletes trained by Forki City of Palembang. The data analysis technique uses descriptive analysis expressed in percentage form. The Gyaku Tsuki and Kizami Tsuki punch speed measurement tests were carried out sequentially using a microcontroller based measuring instrument, namely "Puput Punch Speed". Each athlete is given 3 chances to do each stroke and then the best result is taken.

RESULTS

This research was carried out with a test and measurement survey, with research entitled: Analysis of the Profile of Punching Techniques in Karate Athletes Assisted by Forki, Palembang City. This research aims to determine the technical conditions of karate athletes, especially the punching speed of Gyaku Tsuki and Kizami Tsuki, karate athletes assisted by Forki, Palembang City. This descriptive data is intended to provide an overview of the data from the research variables. The following is a description of the variable condition of punching technique ability in karate athletes assisted by Forki in Palembang City. The following are the results of descriptive statistical calculations:

Table 1 Descriptive calculation of Gyaku Tsuki's punch speed conditions

Profile Gyaku Tsuki Punching Speed	N	Minimum	Maxsimum	Mean	Std. Deviation
	20	3,0	4,1	3,37	0,32

Table 2 Data on the results of the gyaku tsuki punching speed of Forki Kota karate athletes Palembang

No	Interval Class	Median	Category	Absolute Frequency	Relative Frequency
1	> 3, 65 m/s	3,9	Excellent	3	15 %
2	3,40 – 3,64 m/s	3,4	Good	9	45%
3	3,15 – 3,39 m/s	3,2	Average	3	15%
4	3,14– 2,90 m/s	2,9	Deficient	4	20%
5	> 2,90 m/s	2,8	Very Deficient	1	5%
		Amount		20	100%

The author tries to present a description of the frequency data of Gyaku Tsuki's punching speed based on categories, which can be seen in the image below
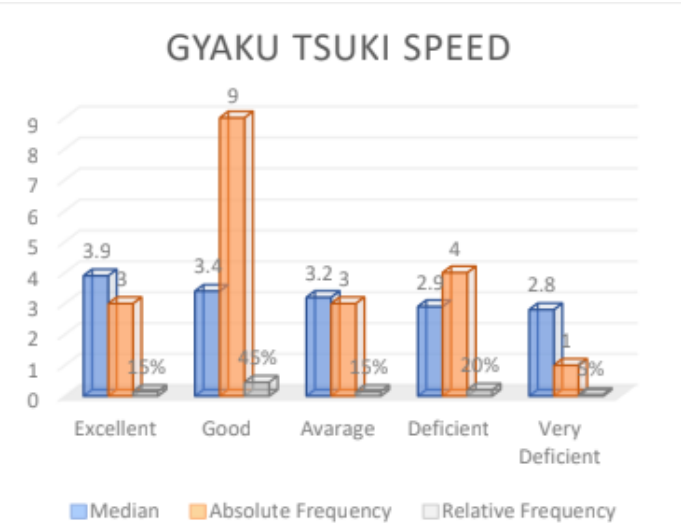
Figure 1. Histogram graph of Gyaku Tsuki's punching speed for athletes trained by Forki Kota Palembang.

Table 3 Gyaku tsuki speed categories

CATEGORY AMOUNT	CATEGORY AMOUNT
ATLET	ATLET
Excellent 3	Excellent 3
Good 9	Good 9
Average 3	Average 3
Deficient 4	Deficient 4

Based on the results of descriptive statistical calculations, the average value or mean value calculated for Gyaku Tsuki's hitting speed condition is 3.37. If you look at table 1, the score is in the sufficient category, we can see that the minimum value or lowest value is 3.0. This value is in the lowest category. The highest score is 4.1, which is included in the very good category. The following are the results of measuring the speed of Kizami Tsuki.

Table 4 Descriptive calculation of Kizami Tsuki's punch speed conditions

Profile	N	Minimum	Maxsimum	Mean	Std.Deviation
Kizami Tsuki's Punching Speed	20	3,1	4,2	3,46	0,31

Based on table 4, it can be explained that N is the number of samples in this study, namely 20 people, for the kizami tsuki punch speed variable, karate athletes

assisted by Forki City of Palembang, minimum speed = 3.1, maximum speed 4.2, mean or average value = 3.46 and Std. Dev = 0.31. The results of measuring the speed of Kizami Tsuki's punches are presented in a frequency distribution and histogram graph.

Tabel 5 Data Hasil kecepatan pukulan kizami tsuki atlet karate binaan Forki Kota Palembang.

No	Interval Class	Median	Category	Absolute Frequency	Relative Frequency
1	> 4,0 m/s	3,8	Excellent	2	10%
2	3,50 – 3,90 m/s	3,5	Good	6	30%
3	3,30 - 3,49 m/s	3,2	Average	6	30%
4	3,10– 3,29 m/s	3,1	Deficient	5	25%
5	> 3,0 m/s	3,0	Very Deficient	1	5%
	Amount			20	100%

The author tries to present a description of the frequency data of Kizami Tsuki's punching speed based on categories, which can be seen in the image below.
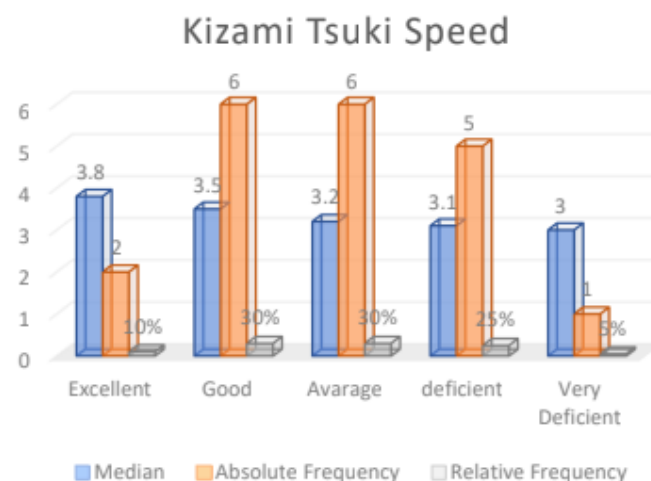

Figure 2. Histogram graph of Kizami Tsuki's hitting speed for athletes trained by Forki Kota Palembang

Table 6 Kizami tsuki speed categories

CATEGORY	AMOUNY ATLET
Excelent	2
Good	6
Average	6
Deficient	5
Very Deficient	1

Based on the results of descriptive statistical calculations, the average value or mean value from calculations of Kizami Tsuki's hitting speed conditions was 3.46.

If you look at the score table, it is in the sufficient category, with the minimum or lowest value being 3.1, this value is included lowest category. The highest score is 4.2, including the very good category. Thus, it can be concluded that Kizami Tsuki's punching ability among karate athletes assisted by Forki City of Palembang on average is sufficient.

Based on the research results, it was found that the striking ability of karate athletes assisted by Forki in Palembang City was in the sufficient category. This situation is a view of how much training results have been given by the coaching team, the gyaku tsuki and kizami tsuki punch speed training carried out so far has apparently been included in the sufficient category. This has an influence on the athlete's hitting performance and provides sufficient insight into the physical condition of the athletes. Karate trained by Forki in Palembang City, with good physical condition can significantly influence the development of athletes. In developing maximum basic achievements and abilities while still in the moderate category, this is a reflection that karate athletes assisted by Forki City of Palembang need to improve their punching speed abilities and physical condition evenly through training within the team and additional training outside the team. In this way, Gyaku's punching speed Tsuki and Kizami Tsuki as a karate athlete can have maximum punch speed. Apart from that, the speed of accurate blows made by karate athletes is one of the techniques that produces winning points in competing during matches because in its implementation there is always quite tight competition.

DISCUSSION

The results of the research showed that the athletes trained by Forki City of Palembang were in the adequate category for the speed punch profiles of Gyaku Tsuki and Kizami Tsuki and athlete simulations using a microcontroller-based speed measurement test, namely Puput Punch Speed, with a research sample of 20 athletes which was carried out at the Forki Dojo, Palembang City. Athletes are given 3 opportunities to take a shot and the best shot result is taken as data. This research can be used as a guide for trainers regarding the abilities and progress of athletes and karate trainers can measure the speed of an athlete's punches which can be used as a reference for the success of the training that has been carried out by the athlete.

This research requires physical activity and the athlete's good physical condition to get the desired results, but the athlete's discipline and consistency in participating in training is also the main factor in the success of the athlete's development of the athlete's stroke speed. By using a speed measuring device you will get objective results that can be measured. Based on numbers and averages on speed measuring devices during research, with this speed measuring device it can also be a basis for coaches in determining athlete competition numbers according to the athlete's physical condition, ability and technique, and to get hitting results with good speed they must pay attention to factors What can influence it is the flexibility

and strength of the arm muscles, this affects the athlete's performance when competing and as a basis for carrying out punches. The need to improve the physical condition of athletes to improve athlete performance, in this research, getting results in the adequate category, is of course a challenge for coaches so that athletes trained by Forki City of Palembang can develop better.

CONCLUSION

Based on the test results, which consisted of 2 punch tests, namely the Gyaku Tsuki and Kizami Tsuki punches. The data analysis technique uses descriptive analysis with percentages based on categorization norms. The results of the research showed that the overall hitting profile of Gyaku Tsuki and Kizami Tsuki for athletes trained by Forki City of Palembang was sufficient, namely 3.37 for Gyaku Tsuki and 3.46 for Kizami Tsuki, so it can be concluded that the speed profile of athletes trained by Forki City of Palembang in 2024 is enough.

Conflict of Interest

The authors declare that they have no conflict of interest in this research. The author hopes that the research can be used as a reference for trainers in improving the punching technique abilities of karate athletes assisted by Forki in Palembang City.

Acknowledgment

REFERENCES

Alinaghipour, M., Zareian, E., & Ardakani, ZP (2020). Teknik penilaian pada kompetisi final Karate World Championships 2016. Annals of Applied Sport Science, 8(2), 1–7 https://doi.org/10.29252/aassjo urnal.760

Amertha, PASUWA, Winaya, IMN, Wahyuni, N., & inata, IMK (2020). Hubungan Kekuatan Ledakan Lengan Dengan Kemampuan Pukulan Gyaku Tsuki Pada Dojo Karate Di Denpasar. Majalah Fisioterapi, Ilmiah Indonesia 8(3), 58.https://doi.org/10.24843/mif i.2020.v08.i03.p08

Ardi, Winoto. 2010. Mikrokontroler AVR ATmega 8/ 32/ 16/ 8535 dan Pemrograman dengan Bahasa C pada WinAVR, Informatika, Bandung.

Arsil. 2015. Evaluasi Pendidikan Jasmani dan Olahraga. Padang: Wineka Media 1 Desember 2020 Fendrian, F., & Nurzaman, M. (2016). Efektivitas Teknik Serangan Pukulan dan Teknik Serangan Tendangan Terhadap Perolehan Poin Pada Pertandingan Kumite Cabang Olahraga Karate. Jurnal Pembinaan Olahraga, 8(2), 1–13.

Harlan. (2020, 8 September). Pengertian Fungsi, Arduino, Keunggulan, Bahasa, dll Diakses melalui https://www.progresstech.co.id/blog/ard uino/ 1 Desember 2020.

Ihsan, N., Yulkifli, Y., & Yohandri, Y. (2018). Instrumen Kecepatan 344

Puput Sekar Sari dkk / Kinestetik : Jurnal Ilmiah Pendidikan Jasmani 5 (2) (2021) Tendangan Pencak Silat Berbasis Teknologi. Jurnal Sosioteknologi, 17(1), 124 131.

Kos, A., Wei, Y., Tomazic, S., & Umek, A. 2018. Peran Sains dan Teknologi dalam Olahraga. Ilmu Komputer Procedia, 129, 489-495.

Kho, Dickson (2020, 1 Oktober)Pengertian LCD (Liquid Crystal Display) dan Prinsip Kerja LCD. Diakses melalui https://teknik elektronik. com/pengertian prinsip-prinsip layar kristal cair-lcd-kerja/

Mohammed Sayyd, S., Asnaldi, A., & Laura Putri, R. (2019). Koordinasi Mata Tangan Keterampilan Gyaku Tsuki Karateka Gokasi. Jurnal Internasional Kinesiologi dan Pendidikan Jasmani, 1(2), 27–35. https://doi.org/10.34004/ijkpe.v 1i1.12

Pranata, LD, Yarmani, Y., & Sugihartono, T. (2017). Pengaruh Latihan Pegas Ban Karet-Beban Gaya Terhadap Kecepatan Pukulan Kumite Gyaku Tzuki Bagi Atlet Karate Inkanas Kota Bengkulu. Kinestetik, 1(2).Https://Doi.Org/10.33369/ Jk.V1i2.3473

Rahmat, E. 2017. Pengembangan Teknologi Chin Up Test Berbasis Arduino Uno dan Sensor Laser Inframerah Dengan Layar LCD. Jurnal Ilmu Keolahragaan Terapan Jilid 2 Nomor 14 17. Sari, Sekar.P & Salmah, Ayu.N. (2020). Citra Merek, Kualitas Produk, Harga dan Pengaruhnya