Analysis of the Physical Fitness of Trained Individuals in Power, Speed, and Agility: A Descriptive Study

Mei Nurisetya Yulanda and Gatot Jariono[(✉)]

Faculty of Teacher Training and Education, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia
gj969@ums.ac.id

Abstract. The problem in this study originates from the observations regarding the level of physical fitness, especially in the components of power, speed, and agility for pencak silat athletes at Universitas Muhammadiyah Surakarta. In recent years, Indonesia has experienced the Covid-19 pandemic, which hampers the athlete's physical activity, and the training program cannot run smoothly. The fact is every trained individual needs that good physical fitness conditions to support the future achievements of athletes and their activities in everyday life. Therefore, trainers and athletes are responsible for the physical condition and daily activities adjusted to the portion level so that the body's condition remains optimal. The results are presented with systematic calculations, so this research is included in the quantitative category, even though using a descriptive method. Twelve pencak silat athletes from Universitas Muhammadiyah Surakarta, consisting of six males and six females, were used as the research sample. The data collection method used several stages of a series of tests: the vertical jump test, the 40-m run test, and the Illinois agility run test. The purposive sampling technique was employed, using the specified criteria in selecting and determining the sample. The data were analyzed descriptively before describing the findings of the data collected and needed for research. The SPSS 20.0 software was used to analyze the data. Based on the results of this study, Universitas Muhammadiyah Surakarta students have a level of physical fitness that falls into the "Fair" category for power, the "Poor" category for speed, and the "Good" category for agility.

Keywords: physical fitness · trained individual · power · speed · agility

1 Introduction

Most people, both adults and children, are involved in sports and outdoor activities. Because sport has become part of society's culture, it is no longer underestimated [1]. The nation's achievements that developed and changed along with the times are the contribution of sports to Indonesian society. Therefore, sport is crucial in one's overall development [2]. Sports activities are intended to help people achieve their best performance levels and increase their physical health needs [3].

Humans now increasingly prefer sports in an increasingly complex and automatic life to maintain their existence and avoid disturbances or functions due to lack of movement in everyday life. Modern world civilization that is proliferating demands and adds to the needs of personal life to be more prosperous. Our bodies will benefit from proper exercise [4].

Physical fitness is the body's ability to carry out routine tasks at work without feeling tired [5]. Endurance is a reflection of the ability of the body's systems to function to improve the standard of living in every physical activity [6]. Physical fitness significantly impacts athletes' performance and physical activity [7–10].

For the athlete's performance to always be excellent, a well-organized training program adapted to the athlete's condition is needed. The program is not only focused on physical activity but each athlete's diet and nutritional intake are appropriately met [11]. However, the Covid-19 pandemic that has hit Indonesia in recent years has limited all activities [12]. It hampers the athlete's physical activity, and the training program cannot run smoothly. This pandemic has reduced the physical condition and performance of athletes. Lack of physical activity due to limited movement harms physical fitness [13]. Most athletes experience decreased performance after not implementing a training program due to the Covid-19 pandemic.

Based on the phenomena, the researchers are interested in researching and analyzing the extent to which the level of physical fitness of trained individuals from Universitas Muhammadiyah Surakarta students is in terms of power, speed, and agility. Of the many components of physical fitness, researchers focus on the power, speed, and agility of trained individuals. This study took a sample of 12 pencak silat athletes from Universitas Muhammadiyah Surakarta. Thus, it can be followed up to determine how much each trained student's physical fitness level is measured by power, speed, and agility at Universitas Muhammadiyah Surakarta.

2   Method

2.1   Research Methods

This research is included in the category of quantitative research because the results are presented systematically [14]. The quantitative research method is a unique type of research because it is systematic from the beginning to the end of the research design phase. The structure of this essay is descriptive [15]. Descriptive research is a type of writing used to study the values of each variable, both many and only one, which differs without making connections or comparisons with other variables. [14]. This study used statistical analysis with observation or survey methods. The purposive sampling technique in this study used established criteria to select and evaluate samples. The research sample consisted of 12 UMS students divided into six males and six females.

2.2   Data Collection Techniques

The data collection technique used in this study was a series of tests and measurements: the vertical jump test, the 40-m run, and the Illinois agility run. The test was conducted

Table 1. 40-m Run Test Norms

Female (s)	Male (s)	Status
<5,4	<5,2	Very Good
5,4–6,6	5,2–6,0	Good
6,6–7,2	6,0–6,4	Fair
7,2–9,0	6,4–7,6	Poor
>9,0	>7,6	Very Poor

Table 2. Illinois Agility Run Test Norms

Rating	Category	Male	Female
Very Good	1	<15,2	<17,0
Good	2	16,1–15,2	17,9–17,0
Fair	3	18,1–16,2	21,7–18,0
Poor	4	19,3–18,2	23,0–21,8
Very Poor	5	>19,3	>23,0

Table 3. Vertical Jump Test Norms

Rating	Male (cm)	Female (cm)
Exceptional	>70	>60
Excellent	61–70	51–60
Very Good	51–60	41–50
Good	41–50	31–40
Fair	31–40	21–30
Poor	21–30	11–20
Very Poor	<21	<11

to determine the performance abilities of UMS pencak silat athletes in terms of power, speed, and agility. The data collection instrument was adjusted to the following test scores and norms (Tables 1, 2, and 3).

2.3 Data Analysis Techniques

Data analysis techniques in this study use quantitative data that process numerical data. The data were analyzed descriptively by analyzing the data and then describing the results of the collected and needed data. The physical fitness test data of the pencak

silat athletes at Universitas Muhammadiyah Surakarta needs to be analyzed so that the data can be accounted for and know the final results. The data was analyzed using SPSS 20.0. The data analysis results were calculated using the descriptive frequency formula to determine the percentage of relative frequency [16].

$$P = \frac{F}{N} \times 100$$

Description:
P: Percentage
F: Frequency
N: Number of Respondents

3   Results and Discussion

Data collected included maximum scores, minimum scores, and averages based on the results of physical fitness tests from 12 UMS pencak silat athletes. In addition, a frequency distribution table is made with research data using a frequency descriptive formula. After that, the results were divided into five categories: very good, good, fair, poor, and very poor. The frequency distribution of the level of physical fitness of the UMS pencak silat athletes is shown in Table 4.

Table 4 provides descriptive statistical information about the level of physical fitness of trained individuals among students at the Universitas Muhammadiyah Surakarta. For male athletes, in the 40-m running test, the lowest score (min) was 8.21; the highest score (max) was 7.10; the mean (mean) was 7.42; the standard deviation (SD) was 0.41. On the Illinois agility test, the minimum (min) score was 18.12; the maximum value (max), the mean was 17.28, and the standard deviation of 0.80. The vertical jump test produces a minimum score of 50, a maximum score of 35, an average (mean) score of 44.83, and a standard deviation of 5.46. The 40-m running test for female athletes resulted in the lowest score (min) of 9.35, maximum score (max), means of 8.71, the standard deviation of 0.57. On the Illinois agility running test, his average grade was 19.78; the minimum value was 20.63; the maximum value was 19.35; the standard deviation was 0.49. The

Table 4. Frequency Descriptive Analysis Results

Statistic	40-m Run (sec)		*Illinois Agility* (sec)		*Vertical Jump* (cm)	
	Male	Female	Male	Female	Male	Female
N	6	6	6	6	6	6
Mean	7,42	8,71	17,28	19,78	44,83	32,50
Std. Deviation	0,41	0,57	0,80	0,49	5,46	5,17
Minimum	8,21	9,35	18,12	20,63	50	40
Maximum	7,10	8,05	16,25	19,35	35	27
Sum	44,53	52,27	103,7	118,66	269	195

Table 5. Criteria of 40-m Run for Male and Female Athletes

Category	40-m Run (sec)			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Very good	3	50,00%	2	33,33%
Good	2	33,33%	3	50,00%
Fair	1	16,67%	1	16,67%
Poor	0	0%	0	0%
Very poor	0	0%	0	0%
Total	**6**	**100%**	**6**	**100%**

vertical jump test produces a minimum score of 40, a maximum score of 27, an average (mean) of 32.50, and a standard deviation of 5.17.

Based on Table 5, the physical fitness level of UMS male pencak silat athletes is in the category "Very good," which represents 50.00% (3 athletes), "Good," which represents 33.33% (2 athletes), "Fair," which represents 16 .67% (1 athlete), "Poor" which is equivalent to 0% (0 athletes), and "Very poor" which represents 0%. (0 athletes). Based on the mean (average) value, 7.42 female athletes fall into the "Very good" category (2 athletes), "Good," and "Fair," with one athlete entering the "Fair" category and 0 athletes entering the "Fair" category. "Poor" and "Very Poor," respectively (0 athletes). Based on an average value (mean) of 8.71. According to the standard 40-m running test for male and female athletes, the physical fitness level of Universitas Muhammadiyah Surakarta students is included in the "Poor" group in the speed component.

Based on Table 6, the physical fitness level of UMS male pencak silat athletes falls into the categories "Very good" (3 athletes), "Good" (2 athletes), "Fair" (1 athlete),

Table 6. Results of Descriptive Analysis of the Illinois Agility Run Test for Male and Female Athletes

Category	Illinois Agility Run Test (sec)			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Very good	3	50,00%	2	33,33%
Good	2	33,33%	3	50,00%
Fair	1	16,67%	1	16,67%
Poor	0	0%	0	0%
Very poor	0	0%	0	0%
Total	**6**	**100%**	**6**	**100%**

Table 7. Results of Descriptive Analysis of the Vertical Jump Test for Male and Female Athletes

Category	Vertical Jump Test (cm)			
	Male		Female	
	Frequency	Percentage	Frequency	Percentage
Very good	1	16,67%	1	16,67%
Good	5	83,33%	4	66,67%
Fair	0	0%	1	16,67%
Poor	0	0%	0	0%
Very poor	0	0%	0	0%
Total	**6**	**100%**	**6**	**100%**

"Poor" (0 athletes), and "Very poor" (0 athletes). Based on the mean (average) equivalent to 17.28, female athletes fall into the categories "Very good" (2 athletes), "Good" (3 athletes), "Fair" (1 athlete), "Poor" (0 athlete), and "Very poor" (0 athletes). The average value is 19.78. According to the Illinois agility running test norms for male and female athletes, trained individuals at Universitas Muhammadiyah Surakarta are in the "Good" category for the agility component of physical fitness.

From Table 7, the physical fitness level of UMS male pencak silat athletes is in the category "Very good," represented by one athlete, "Good" represented by five athletes, "Fair" represented by zero athletes, "Poor" represented by zero athletes, and "Very poor" which is represented by zero athletes. Based on the average value (mean) of 44.83, female athletes fall into the categories "Very good" (1 person), "Good" (4 people), "Fair" (1 person), "Poor" (0 athletes), and "Very poor" (0 athletes). Based on the mean or average, the value is 32.50. According to the standard Illinois agility running test for male and female athletes, the physical fitness level of Universitas Muhammadiyah Surakarta students is in the "Fair" category for the power component.

The research results are obtained from physical fitness tests on pencak silat athletes at Universitas Muhammadiyah Surakarta with several test items: power (vertical jump test), speed (40-m running test), and agility (Illinois agility run test).

Power
The Illinois Agility Run Test can be used to evaluate an athlete's skill. The results of male athletes were 16.67% "Very good," 83.33% "Good," and 16.67% "Fair," while the results of female athletes were 16.67% "Very good," 66.67% "Good" and 16.67% "Fair." In other words, the UMS pencak silat athletes are in the moderate category. Without a deliberate training process, the value only comes from the correct data. Given the declining physical condition of athletes, especially in their power abilities, it is necessary to hold improvement and training programs to improve performance. Strength training can be used in several ways to restore athletes to their original physical condition. Strength and speed work together to create a force that delivers as much force as possible in the shortest possible time [17]. Thus, in pencak silat, the performance of speed and

strength possessed by trained people dominates according to the needs according to the elite martial arts competition class [18].

Speed
The 40-m run test is used in a speed test to measure an athlete's potential. The results for male athletes were 50.00% "Very good," 33.33% "Good," and 16.67% "Fair," while female athletes achieved achievements with a percentage of 33.33% "Very good," 50.00% "Good," and 16.67% "Fair." As a result, UMS pencak silat athletes fall into the overall poor category. Without a deliberate training process, the value comes only from the correct data. One of the most crucial physical characteristics of pencak silat participants is speed. Strength, power, anaerobic endurance, balance, and agility are just a few of the bio motor factors affected by speed training [19–21]. Therefore, many speed exercises use the same form. Therefore, without these elements, fighters will find it challenging to carry out attacks and defenses quickly and precisely [22].

Agility
The Illinois agility run test is used in an agility test to measure an athlete's ability. The results for male athletes were 50.00% "Very good," 33.33% "Good," and 16.67% "Fair," while female athletes achieved a percentage of 33.33% "Very good," 50.00% "Good," and 16.67% "Fair." As a result, UMS pencak silat athletes fall into the overall poor category. Without a deliberate training process, the value comes only from the correct data. In the sport of pencak silat, agility is a vital physical component, especially when performing movements in pencak silat techniques. Accurately and effectively, training athletes' agility will help them move faster and more precisely. A fighter's ability to attack or defend with the proper posture will increase if they have good dexterity and are trained. In pencak silat, agility refers to a person's ability to move quickly while occupying the proper posture and providing a solid base when carrying out attacks and defenses against his opponent [21].

Physical fitness can be considered as a possession or achievement related to one's ability to carry out regular physical activity [10, 23, 24]. This is determined by two characteristics: (1) physical capacity to carry out daily activities enthusiastically; (2) low risk of early hypokinetic disorders, such as physical exercise. Information from physical fitness evaluations is used to address individual-specific health goals and rehabilitative needs [25]. Physical fitness is the ability of the limbs to exercise without getting tired quickly. Because everyone's physical fitness is affected by activities in daily life, no people have the same level of physical fitness regardless of the physical activity they do [1]. Students must understand the value of body fitness not only to participate in classes and other public activities but also to increase the capacity of the body's social and emotional organs and increase self-motivation to have good sportsmanship and enthusiasm in competing and daily activities [26]. Physical performance is one of the characteristics of healthy, fit, and fresh people and is the most fundamental component of physical fitness [27]. Each person's level of physical fitness also influences their ability to succeed in a trained individual's sport [6].

Pencak silat practice must cover all directions, including forward, backward, sideways (right and left), and oblique (front right, front left, back right, and back left), even if the distance is only a few meters, eight to ten meters at most [28]. Power, speed, and

agility are three essential elements that support the physical fitness of an athlete [29]. These three physical components are interconnected so that the performance of one of them will be affected by the failure of the other two. Optimal physical condition significantly influences athletes when competing, from good physical preparation to displaying anticipated and technical performance to achieve maximum performance [30]. Pencak silat trainers need to become more professional to develop training plans that match their students' personalities and enable them to perform as well as possible [31]. Pencak silat athletes who are regulated and trained regularly by coaches carry out exercises planned and prepared to improve athlete performance, especially in exercises to increase power, speed, and agility in the right and correct stages, hoping to produce maximum output. In addition, it is hoped that the coach's training plan can be carried out correctly to develop the skills and potential of athletes ready to compete. Trainers can potentially use the findings of this study to create training plans for future athletes.

Various forms of physical training and properly structured training programs to support the power, speed, and agility abilities of pencak silat athletes are expected to develop and improve their performance to achieve optimal physical condition and maximum performance.

4   Conclusion

This study concludes that the level of physical fitness of trained individuals in pencak silat athletes at Universitas Muhammadiyah Surakarta is categorized into "Fair" on the strength component, "Poor" on the speed component, and "Good" on the agility component. Trainers can use the findings of this research as a guide when creating more demanding and varied training programs, considering the physical condition of each athlete. It is believed that future athletes will be able to achieve the best level of physical fitness and improve their physical appearance. Due to the physical demands of pencak silat competition, future studies should examine more complex physical performance. Thus, the study of sports science focusing on the discipline of pencak silat can advance and create results that benefit the development of martial arts and sports science.

References

1. M. V. Aprilianto and E. B. Fahrizqi, "Tingkat Kebugaran Jasmani Anggota UKM Futsal Universitas Teknokrat Indonesia", vol. 1, no. 1, pp. 1–9, 2020.
2. R. Alfarisi, "Abstrak Penelitian ini Bertujuan untuk Mengetahui Pengaruh Kebugaran Jasmani, Aktifitas Fisik, dan Indeks Massa Tubuh (IMT) terhadap Indeks Prestasi Kumulatif (IPK). Penelitian ini merupakan Penelitian Analitik dengan Menggunakan Rancangan Cross Sec", vol. 1, 2014.
3. S. Prativi, G. O , Soegiyanto, "Pengaruh Aktivitas Olahraga terhadap Kebugaran Jasmani", *J. Sport Sci. Fit.*, vol. 2, no. 3, pp. 32–36, 2013.
4. R. Pahliwandari, "Meningkatkan Kesegaran Jasmani melalui Pendekatan Bermain dalam Pembelajaran Pendidikan Jasmani pada Siswa Kelas VIII SMP 04 Kecamatan Sungai Kakap", *J. Keolahragaan*, vol. 6, no. 2, p. 87, 2020, https://doi.org/10.25157/jkor.v6i2.4933.
5. R. Satriawan, "Tingkat Kesegaran Jasmani Siswa Kelas V Sekolah Dasar Negeri Inpres Rabakodo Kecamatan Woha Kabupaten Bima", 2019.
6. W. Bakti Bachtiar and M. Bakti, "Upaya Meningkatkan Kesegaran Jasmani melalui Pendekatan Bermain dalam Pembelajaran Pendidikan Jasmani Kelas X SMA Negeri 1 Cianjur", *Maenpo*, vol. 8, no. 1, p. 37, 2018, https://doi.org/10.35194/jm.v8i1.917.
7. N. Garatachea and A. Lucia, "Genes, Physical Fitness, and Ageing", *Ageing Res. Rev.*, vol. 12, no. 1, pp. 90–102, 2013, https://doi.org/10.1016/j.arr.2012.09.003.
8. W. Chen, A. Hammond-Bennett, A. Hypnar, and S. Mason, "Health-Related Physical Fitness and Physical Activity in Elementary School Students", *BMC Public Health*, vol. 18, no. 1, pp. 1–12, 2018, https://doi.org/10.1186/s12889-018-5107-4.
9. R. W. Bass, D. D. Brown, K. R. Laurson, and M. M. Coleman, "Physical Fitness and Academic Performance in Middle School Students", *Acta Paediatr. Int. J. Paediatr.*, vol. 102, no. 8, pp. 832–837, 2013, https://doi.org/10.1111/apa.12278.
10. F. Fachrezzy, U. Maslikah, E. Safadilla, R. Reginald, and S. Hendarto, "Physical Fitness of The Poomsae Taekwondo Athletes in Terms of Agility, Balance and Endurance", *Kinestetik J. Ilm. Pendidik. Jasm.*, vol. 5, no. 1, pp. 111–119, 2021, https://doi.org/10.33369/jk.v5i1.14364.
11. R. Satriawan, "Profil Kesegaran Jasmani Atlet Bolavoli Kabupaten Bima", vol. 8, no. 1, pp. 40–43, 2018.
12. G. Jariono *et al.*, "Analisis Kondisi Fisik Menggunakan Software Kinovea pada Atlet Taekwondo Dojang Mahameru Surakarta", *Transform. J. Pengabdi. Masy.*, vol. 16, no. 2, pp. 133–144, 2020, https://doi.org/10.20414/transformasi.v16i2.2635.
13. G. Jariono and N. Subekti, "Sports Motivation Survey and Physical Activity Students of Sport Education Teacher Training and Education Faculty FKIP Muhammadiyah University Surakarta", *Kinestetik J. Ilm. Pendidik. Jasm.*, 2020, https://doi.org/10.33369/jk.v4i2.12449.
14. Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* ke-2, Bandung: ALFABETA, 2018.
15. Sugiyono, "Metode Penelitian Kuantitatif, Kualitatif, dan R&D", Bandung: PT Alfabet. *R&D. Bandung: PT Alfabet.* 2017.
16. Sugiyono, *Metode Penelitian Pendidikan Pendekatan Kauntitatif, Kualitatif, R&D*, 2017.
17. B. P. Adhi and T. Soenyoto, "Journal of Physical Education and Sports Pengaruh Metode Latihan dan Kekuatan Otot Tungkai terhadap Power Otot Tungkai Abstrak", vol. 6, no. 1, pp. 7–13, 2017.
18. N. Subekti, A. N. Warthadi, H. Mujahid, and A. Abdullah, "Analisis Performa Speed dan Power", vol. 18, pp. 39–45, 2021.

19. F. Fachrezzy, U. Maslikah, I. Hermawan, H. Nugroho, G. Jariono, and R. Nurulfa, "Kicking Ability for the Eolgol Yoep Chagi Taekwondo Poomsae in Terms of Quality of Physical Condition, Self-Confidence, and Comparison of Leg Muscle Explosive Power and Core Stability", *J. Phys. Educ. Sport*, vol. 21, no. 4, pp. 2337–2342, 2021, https://doi.org/10.7752/jpes.2021.s4313.

20. G. Jariono *et al.*, "Strategies to Improve Jump Service Skills at Volleyball Student Activity Unit of Muhammadiyah University of Surakarta", *Linguist. Cult. Rev.*, vol. 6, no. July 2021, pp. 37–48, 2021, https://doi.org/10.21744/lingcure.v6ns3.1906.

21. H. Nugroho, S. Y. Gontara, P. D. Angga, G. Jariono, and I. L. Maghribi, "Quality of Physical Condition of Youth Pencak Silat Athletes Reviewed from Speed, Power, and Strength", *Kinestetik J. Ilm. Pendidik. Jasm.*, vol. 5, no. 1, pp. 154–162, 2021, https://doi.org/10.33369/jk.v5i1.14376.

22. M. Fatoni, Nurhidayat, and E. Sudarmanto, "Aplikasi Latihan Kombinasi Zig–Zag Teknik dan Pengaruhnya terhadap Kecepatan Tendangan Sabit Pesilat Male JPOK FKIP Universitas Sebelas Maret Surakarta", *J. Muara Oahraga*, vol. 1, no. 1, pp. 64–75, 2018.

23. Endang Ernandini and Trevino A. Pakasi, "Physical Fitness Profile of Wheelchair-Bound Soldier: a Preliminary Study", *Indones. J. Phys. Med. Rehabil.*, vol. 9, no. 2, pp. 79–86, 2021, https://doi.org/10.36803/ijpmr.v9i2.297.

24. F. Fachrezzy, I. Hermawan, U. Maslikah, H. Nugroho, and E. Sudarmanto, "Profile Physical Fitness Athlete of Slalom Number Water Ski", *Int. J. Educ. Res. Soc. Sci.*, vol. 2, no. 1, pp. 34–40, 2021, https://doi.org/10.51601/ijersc.v2i1.29.

25. J. Rafael, F. Monteiro, F. Boscolo, V. S. Coswig, and B. Berny, "Specific Wushu Sanda High-Intensity Interval Training Protocol Improved Physical Fitness of Amateur Athletes': a Pilot Study", vol. 14, no. December 2019, pp. 47–55, 2020, https://doi.org/10.18002/rama.v14i2.6029.

26. G. F. N. Rachman and J. D. H. Nasution, "Multistage Fitness Test", *J. Pendidik. Olahraga dan Kesehat.*, vol. 05, no. 1, pp. 44–48, 2017.

27. N. Subekti *et al.*, "Kinestetik : Jurnal Ilmiah Pendidikan Jasmani Exercise Speed, Agility, and Quickness (SAQ) To", vol. 5, no. 1, pp. 95–101, 2021.

28. N. Subekti, A. A. Syaukani, A. N. Warthadi, A. A. D. A. Raihan, and R. Budianto, "Design of Speed, Agility, Quickness Exercises to Improve The Physical Fitness of Students at The Muhammadiyah University of Surakarta in Terms of Speed and Endurance", *Kinestetik J. Ilm. Pendidik. Jasm.*, vol. 5, no. 4, pp. 809–818, 2021, https://doi.org/10.33369/jk.v5i4.19772.

29. G. Jariono, H. Nugroho, D. Nugroho, S. D. Nyatara, T. Marganingrum, and D. Setiawati, "Determining Factors of Jump Service Volleyball in The Student Activity Unit of Volleyball", *Kinestetik J. Ilm. Pendidik. Jasm.*, vol. 5, no. 4, pp. 799–808, 2021, https://doi.org/10.33369/jk.v5i4.19771.

30. F. Fachrezzy, G. Jariono, U. Maslikah, and H. Nugroho, "Functional Exercise Model for Weight Loss in Sports Science Faculty Students", pp. 159–165, 2020.

31. I. Hermawan, U. Maslikah, M. Masyhur, and G. Jariono, "Pelatihan Kondisi Fisik Pelatih Cabang Olahraga Kota Depok Jawa Barat dalam Menghadapi Persiapan PORPROV 2022", *Pros. Semin. Nas. Pengabdi. Kpd. Masy. 2020*, vol. 1, no. 1, pp. 371–380, 2020.