The Differences Effect of Exercise Method To Improve Volleyball Underhand Passing Skill

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Abstract

The objectives of this study were: (1) to determine the difference effect of interval and continuous methods on the ability of volleyball underhand passing (2) to determine which exercises had a better effect on the ability of volleyball underhand passing. The research method used was an experimental method with one group pretest-posttest design. The population in this study were 32 athletes in men's volleyball JIVI-C Karanganyar Regency in 2021, with the sampling technique used was total sampling. Data collection techniques were carried out by tests and measurements. The data analysis technique was carried out by statistical analysis using the t test at a significance level of 5%. To fulfill the assumptions of the research results, the prerequisite analysis was carried out, namely the normality test, the homogeneity test, the difference test and the percentage of improvement. Conclusion (1) There is a significant difference between the interval and continuous methods, t-count = 3,280 is greater than t-table = 2.131 with a significance level of 5%. (2) the continue method has a better effect than the interval, group 1 is 35.46% < group 2 is 46.18%.

Keywords: *volleyball underhand passing skill, interval methods, continuous methods*

Introduction

Volleyball is a sport that is quite popular in Indonesia. Volleyball is played by two teams, each team consists of 6 players. According to Toho Cholik Mutohir (2013: 20) "In volleyball there are several basic techniques, namely: 1) serving, 2) passing, 3) smashing, 4) blocking. Passing is one of the most important basic techniques in volleyball. According to Toho Cholik Mutohir (2013: 30) "Passing is a technique of bouncing the ball using the hands, so that the ball can be reflected and can be given to the next player".

The JIVI-C volleyball club is one of the volleyball clubs that organizes volleyball training activities that aim to produce a strong and accomplished volleyball team. Based on the results of observations carried out on January 8, 2021, several things were found, namely when passing, there were still many athletes who had not been able to do good passing techniques, especially in the underhand passing technique.

According to Fox (in Suharjana, Sports Journal Vol.10, 2004: p.33) Interval training is "repeated exercise interspersed with rest, then exercise again, so that in one set of exercises there are several rest periods". According to Emral (2017: 56), "The understanding between recovery time and interval is the same, namely giving rest time between activities". According to Rushall (in Suharjana, Sports Journal

Vol.10, 2004: p.33) there are three general categories of interval training, namely: long, medium and short intervals. At long intervals, the length of work is 2-5 minutes with an intensity of 80-90% of maximum performance, with a ratio between work and rest 1:1 or 1:2. In moderate interval training, the work duration is 30 seconds to 2 minutes, the intensity is 90-95% of maximum performance with a work and rest ratio of 1:2 or 1:3. While in training with short intervals, the length of work is 5-30 seconds, with an intensity above 95% of the maximum performance, with a work and rest ratio of 1:3 or 1:5.

The advantages of underhand passing exercises with intervals are:

a. Mastery of the movement pattern of the underhand passing technique will be more perfect. Because in this exercise the player always gets enough rest time so that the player will be able to perform the movement technique perfectly.
b. Improvements to the pattern of movement carried out will be easy to do, namely at intervals. With the improvements to the movements made, the mastery of the down passing technique will be better.
c. The physical condition of athletes will avoid excessive fatigue, thus avoiding the possibility of overtraining.

Weaknesses of underhand passing practice with intervals, namely:

a. Mastery of movement techniques is a bit slow because it is often interspersed with breaks, this is due to reduced movement patterns that have been formed during rest.
b. Priority in this exercise is limited to movement technique, regardless of physical condition.

According to Rushall (in Rosmaini Hasibuan and Rendy Zaenury Damanik, Scientific Journal of Sports Science Vol.2, No.2, 2018: p.90) "the continuous method is an exercise that takes place continuously and is progressive in nature from time to time". According to Sukadiyanto (in Badruzzaman Busyairi and Hamidie Ronald Daniel Ray, Journal of Applied Sports Science Vol.3, No. 1, 2018: p. 78), “In general, continuous training of giving the load lasts a long time, the length of the loading time depends on the length of the branch activity. sport that is done. Continuous exercise lasts for a long time and will result in good aerobic adaptation. Continuous exercise (eg running continuously without rest) usually lasts for a long time, continuous running of more than 30 minutes with a tempo below the threshold of anaerobic stimulation will result in good aerobic adaptation. Maximum achievement must be supported by various abilities and movement skills.

The advantages of continuous underhand passing practice include:

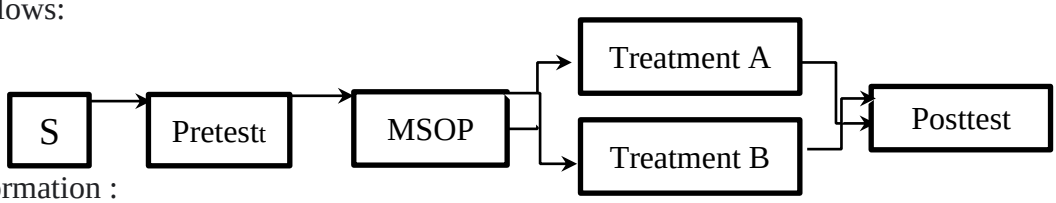
a. Mastery of the movement pattern of the downward passing technique will be achieved more quickly. Because in this exercise continuously and continuously this will allow for the formation of fast movement patterns.
b. With continuous practice, it can improve skills while improving physical condition, especially endurance.

Weaknesses of continuous underhand passing practice include:

a. Mastery of perfect movement techniques will be difficult to achieve, because continuous practice will cause fatigue to players.
b. Continuous training tends to make players not focus at the end of training due to physical fatigue.

Method

The design of this study used "Pretest-Posttest Design" with two kinds of treatment (Suharsimi Arikunto, 2009: 210). The research design drawings are as follows:



Information :

S : Subject
Pretest : Initial test of the ability to underhand passing skill
MSOP : Matched Subject Ordinal Pairing
KE I : Group 1
KE II : Group 2
Treatment A : Interval underhand passing practice
Treatment B : Underhand passing practice continues
Posttest : The final test of the ability to underhand passing skill

The population in this study were the male athletes of the JIVI-C club, Karanganyar Regency, amounting to 32 athletes. The sampling technique used in this research is total sampling. The 32 athletes who were used as research samples were then divided into two groups by means of ordinal pairing. Group 1 as many as 16 athletes received treatment for underpassing exercises using intervals. Group 2 as many as 16 athletes received treatment with continuous lower passing exercises. The data collection technique uses volleyball skills test instructions from Widiastuti (2015: 240).

Results And Discussion

1. Description of Data

The summary of the results of the overall data analysis is presented in the form of a table as follows:

Table 1. Description of Data Underhand Passing Skill Test Results in Group 1 and Group 2

Group	Test	N	Lowest score	Highest score	*Mean*	SD
1	Pre-test	16	30	41	35,25	2.792
	Post- test	16	42	53	47,75	3.568
2	Pre-test	16	30	39	35,18	2.587
	Post- test	16	45	55	51,43	2.780

From table 1, it can be seen that before being given treatment, group 1 had an average ability to do underpassing of 35.25, while after receiving treatment they had an average ability to do underpassing of 47.75. The average value of the ability to do underpassing in group 2 before being given treatment was 35.18, while after getting treatment, the average value of the ability to do under-passing was 51.43.

2. Testing Requirements Analysis

Before data analysis, it is necessary to test the analysis requirements. Testing the requirements of the analysis carried out consists of reliability test, normality test and homogeneity test.

a. Reliability Test

To determine the level of reliability of the lower passing skill test results from the results of the initial and final tests, a reliability test was carried out. The results of the initial test and the final test of the lower passing skill reliability test are as follows:

Table 2. Summary of Pre-Test and Post-Test Data Reliability Test Results

Test Result	Reliability	Category
Pre-test underhand passing skill	0,8446	Very high
Post-test underhand passing skill	0,9037	Very high

b. Normality Test

Before analyzing the data, the normality distribution was tested from the initial test data for lower passing skills. The normality test of the data in this study used the Liliefors method. The results of the data normality test carried out on the results of the initial test in group 1 and group 2 are as follows:

Table 3. Summary of Data Normality Test Results

Group	N	*Mean*	SD	L_{count}	$L_{table\ 5\%}$	Results
1	16	35.25	2.792	0,140	0,213	Normaly
2	16	35.18	2.587	0,116	0,213	Normaly

From the results of the normality test of the initial test data carried out in group 1 (K1), the value of Lcount = 0.140 is obtained where the test value is smaller than the rejection limit at the 5% significance level, which is 0.213. Thus, it can be concluded that the data in group 1 (K1) are normally distributed. Meanwhile, from the results of the normality test carried out in group 2 (K2), the value of Lcount = 0.116 was also smaller than the limit number of rejection of the null hypothesis at the 5% significance level, namely 0.213. Thus, it can be concluded that the data in group 2 (K2) includes normal distribution.

c. Homogeneity Test

Homogeneity test is intended to determine the similarity of variance of the two groups. If the two groups have the same variance, then the difference is due to the difference in average ability. The results of the data homogeneity test between group 1 and group 2 are as follows:

Table 4. Summary of Data Homogeneity Test Results

Group	N	SD	F_{count}	$F_{table\ 5\%}$	Results
1	16	2,792	1,165	2,403	Homogeneous
2	16	2,587			

From the results of the homogeneity test carried out, the value of Fcount = 1.165. Meanwhile, with db = 15 versus 15, the Ftable 5% = 2.403, which turns out the Fcount = 1.165 is smaller than Ftable 5% = 2.403, because Fcount < Ftable 5%, the null hypothesis is accepted. Thus it can be concluded that group 1 (K1) and group 2 (K2) have homogeneous variance.

3. Data Analysis Results

a. The test results of the difference between the pre-test and the post-test in group 1

Table 5. The test results of the difference between the pre-test and the post-test in group 1

Test	N	*Mean*	T_{count}	$t_{table\ 5\%}$
Pre-test	16	35,25	3,631	2,131
Post-test	16	47,75		

From the difference testing with statistical analysis t-test, the t-count value in group 1 between the results of the pre-test and the post-test was 3.631 which turned out to be greater than the t-table value with N = 16, db = 16 - 1 = 15 with a significance level of 5% is of 2.131, so it can be concluded that H_0 is rejected, then between the pre-test and the post-test in group 1 there is a significant difference after being given treatment.

b. The test results of the difference between the pre-test and the post-test in group 2

Table 6. The test results of the difference between the pre-test and the post-test in group 2

Test	N	*Mean*	T_{count}	$t_{table\ 5\%}$
Pre-test	16	35,18	3,757	2,131
Post-test	16	51,43		

From the difference testing with statistical analysis t-test, the t-count value in group 1 between the results of the pre-test and the post-test was 3.757 which turned out to be greater than the t-table value with N = 16, db = 16 - 1 = 15 with a significance level of 5% is of 2.131, so it can be concluded that H_0 is rejected, then between the pre-test and the post-test in group 2 there is a significant difference after being given treatment.

c. The results of the difference post-test between group 1 and group 2

Table 7. The results of the difference post-test between group1 and group 2

Group	N	*Mean*	T_{count}	$t_{table\ 5\%}$
1	16	47,75	3.280	2.131
2	16	51,43		

From the difference testing with statistical analysis t-test, the final test result tcount between group 1 and group 2 is 3,280 which is greater than the value and table with N = 16, db = 16 - 1 = 15 with a significance level of 5% is of 2.131, so it can be concluded that H0 is rejected, then the results of the final test in group 1 and group 2 there are significant differences after being given treatment.

d. Difference in increase percentage persentase

Table 8. Summary of underhand Passing Percentage Results in Group 1 and Group 2

Group	N	*Mean Pretest*	*Mean Posttest*	*Mean Different*	Percentage Increase (%)
1	16	35,25	47,75	12,5	35,46%
2	16	35,18	51,43	16,25	46,18%

From the results above, it can be seen that group 1 has an increased percentage of volleyball underhand passing by 35.46%, while group 2 has an increased percentage of volleyball underhand passing of 46.18%. Thus, it can

be concluded that group 2 has a higher percentage of volleyball underhand passing improvement than group 1.

Implication And Conclusion

Implication

The theoretical implication of the results of this study is that each method has a different effectiveness in improving volleyball underpassing skills in male volleyball athletes JIVI-C Karanganyar Regency in 2021. Therefore, in applying training methods that aim to develop or improve volleyball underpassing abilities, must use the right method and in accordance with the condition of the male volleyball athlete JIVI-C Karanganyar Regency in 2021. The results of this study can also be used as consideration in choosing and determining the right training method, especially to improve the ability to pass down volleyball.

Conclusion

Based on the results of the research and the results of data analysis that has been carried out, the following conclusions can be drawn:

a. There is a significant difference in the effect between the interval and continue methods on the ability to pass down volleyball in male volleyball athletes JIVI-C Karanganyar Regency in 2021. This is evidenced by the results of the final test calculation for each group, namely tcount = 3.280 greater than ttable = 2.131 with a significance level of 5%.
b. The continuous method has a better effect than the interval method on the ability to pass down volleyball in male volleyball athletes JIVI-C Karanganyar Regency in 2021. Based on the percentage of results of the ability to pass down shows that group 2, the group that received treatment with the continue method was 46.18 % > group 1, the group that received the interval method was 35.46%.

References

Abdul Kholik. (2012). *Pengembangan Rancangan Pembelajaran Teknik Dasar Passing Bawah Bolavoli Dengan Menggunakan Gaya Mengajar Inklusi Untuk Siswa Kelas VIII SMP Negeri V Lumajang.* Multilateral Jurnal Penjas Or. Vol 11, No 2 (2012). https://garuda.ristekbrin.go.id/documents/detail/95989

Aep Rohendi & Etor Suwandar. (2018). *Metode Latihan dan Pembelajaran Bolavoli Untuk Umum*. Bandung : Alfabeta.

Agus Kristiyanto. (2010). *Memperluas Desain Permainan Bolavoli*. Surakarta: UNS Press.

Andi Amry Yahya, Sarifuddin Arham. (2021). *Pembelajaran Kooperatif Tipe TGT (Team Games Tournament) Dalam Menigkatkan Hasil Belajar Pasing Bawah Permainan Bola Voli Siswa SMA Negeri 2 Bone*. Jurnal Jendela Olahraga Vol 6, No 1 (2021): Januari 2021. http://journal.upgris.ac.id/index.php/jendelaolahraga/article/view/6948.

Andi Amry Yahya, Sufitriono Sufitriono. (2020). *Pembelajaran Metode Drill Untuk Meningkatkan Hasil Belajar Passing Bawah Pada Permainan Bolavoli Siswa SMPN 2 Mare Kabupaten Bone*. Jurnal Jendela Olahraga Vol 5, No 1 (2020): Januari 2020. http://journal.upgris.ac.id/index.php/jendelaolahraga/article/view/4179

Badruzzaman Busyairi, Hamidie Ronald Daniel Ray. (2018). *Perbandingan Metode Interval Training dan Continous Run Terhadap Peningkatan Vo2Max*.

Jurnal Terapan Ilmu Keolahragaan Vol.3, No.1, 2018. https://ejournal.upi.edu/index.php/JTIKOR/article/download/10128/6936

Emral. (2017). *Pengantar Teori & Metodologi Pelatihan Fisik*. Depok : Kencana.

Harsono. (2015). *Kepelatihan Olahraga (Teori dan Metodologi)*. Bandung : PT. Remaja Rosdakarya.

___. (2015). *Latihan Kondisi Fisik. Untuk Atlet Sehat Aktif*. Bandung : PT. Remaja Rosdakarya.

Mia Kusumawati. (2014). *Penelitian Pendidikan Penjasorkes*. Bandung : Alfabeta.

Muhammad akbar syafruddin. (2019). *Pengaruh Struktur Tubuh dan Koordinasi Mata Tangan Terhadap Kemampuan Passing Bawah Dalam Permainan Bola Voli Atlet Voli Kota Makassar*. Jurnal Jendela Olahraga Vol 4, No 2 (2019): Juli 2019. http://journal.upgris.ac.id/index.php/jendelaolahraga/article/view/3778.

Muhamad Guntur Gaos Sungkawa, Muhamad Syamsul Taufik, Andi Kurniawan Pratama. (2020). *Pengaruh Latihan Lari Interval Dan Latihan Fartlex Terhadap Peningkatan Vo2 Max*. Jurnal Jendela Olahraga Vol 5, No 2 (2020): Juli 2020. http://journal.upgris.ac.id/index.php/jendelaolahraga/article/view/6028

Muhammad Reza Atsani. (2020). *Meningkatkan Kemampuan Passing Bawah Bolavoli Menggunakan Metode Bermain*. Edu Sportivo: Indonesian Journal of Physical Education. Vol. 1 No. 2 (2020). https://garuda.ristekbrin.go.id/documents/detail/1858059

Rosmaini Hasibuan, Rendy Zaenury Damanik. (2018). *Pengaruh Latihan Interval Running dan Continous Running Terhadap Kadar Hemoglobin dan Jurnal Vo2Max pada Atlet Baseball Binaan USBC Universitas Negeri Medan 2018*. Jurnal Ilmiah Ilmu Keolahragaan Vol.2, No.2, 2018. https://jurnal.unimed.ac.id/2012/index.php/so/article/download/11178/11268

Satriya, J.S. Dikdik & Imanudin Iman. (2007). *Metodologi Kepelatihan Olahraga.* Bandung : Universitas Pendidikan Indonesia.

Sefri Hardiansyah. (2017). Pengaruh Metode Interval Training Terhadap Peningkatan Kesegaran Jasmani Mahasiswa Jurusan Pendidikan Olahraga. Jurnal Penjakora. Vol 4, No 2 (2017). https://ejournal.undiksha.ac.id/index.php/PENJAKORA/article/view/13369

Sugiyono. (2017). *Metode Penelitian (Kuantitatif, Kualitatif, dan R&D)*. Bandung : Alfabeta.

Suharjana. (2004). *Pengaruh Latihan Kontinyu dan Interval Terhadap Kapasitas Aerobik*. Jurnal Olahraga Vol.10, 2004. http://eprints.uny.ac.id/5062/1/

Suharsimi Arikunto. (2009). *Manajemen Penelitian.* Jakarta : Rineka Cipta.

Sujito. (2020). Pengembangan Model Pembelajaran Passing Bawah Bolavoli. Jurnal Penjakora. Vol 7, No 1 (2020). https://ejournal.undiksha.ac.id/index.php/PENJAKORA/article/view/24587

Sunardi dan Deddy Whinata Kardiyanto. (2015). *Bolavoli*. Surakarta: UNS Press.

Sutrisno Hadi. (2000). *Metodologi Research Jilid 4.* Yogyakarta: Andi Offset.

Sri Haryono. (2005). *Biomekanika Olahraga.* Semarang: Universitas Negeri Semarang.

Syarif Hidayat. (2014). *Pelatihan Olahraga (Teori dan Metodologi)*. Yogyakarta : Graha Ilmu.

Toho Cholik Mutohir. (2013). *Permainan Bolavoli* (*Konsep, Teknik, Strategi & Modifikasi*). Surabaya : Graha Pustaka.

Widiastuti. (2015). *Tes dan Pengukuran Olahraga.* Depok : Rajawali Pers.