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The Effect of Agility Ladder Drill Training in Improving Agility in Volleyball Athletes

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ABSTRACT

One of the factors that influence volleyball is physical condition. This game requires good physical condition, one of which is good agility. In volleyball, players need very high agility to adapt to changing conditions on the field. The researcher aims to examine how significant the agility ladder drill is in increasing the agility of volleyball players. This study uses a quantitative approach with an experimental method and a two-group pretest-posttest research design. The population in this study was PBV Sunrise athletes, the sample used was 30 people aged 17-19 years, the sampling technique used purposive sampling, and the data collection technique used by the researcher was the side step test to find out how fast the sample moved from the right side to the left. The data was processed and analyzed using the normality test with Shapiro-Wilk and then analyzed using a paired t-test with SPSS 25. The T-test value is with a Sig. (2-tailed) value of 0.00, based on the test results, the Sig. Value. (2-tailed) < .05 so that H0 is rejected. It can be concluded that the agility ladder drill significantly affects volleyball players' agility. Thus, routine training using agility ladder drills can be a solution to improve the agility of volleyball players.

Keywords: Agility ladder drill; Volleyball; Athletes

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INTRODUCTION

From the perspective of Sports Physiology, Sport is a series of regular and planned physical movements that people do consciously to improve their functional abilities; according to the purpose of doing sports, sports are divided based on their nature or purpose, namely competitive sports, recreational sports, health sports, and educational sports (Prativi, 2013). Several sports, such as football, basketball, table tennis, hockey, badminton, volleyball, and ice skating, have become very popular with the highest level of society (Sulis et al., 2023). One of them is volleyball; the purpose of people playing volleyball was initially just for entertainment, but then it developed into other goals such as achieving high achievements, improving the achievements of the country or themselves, maintaining and improving health and physical fitness, utilizing free time, socializing, and even some players currently play for financial and business gain. (Maretno & Arisman, 2020). One of the factors that influences the game of volleyball

is physical condition. Physical condition in sports is the ability of a sportsperson to carry out sports activities; this game requires good physical condition, as in volleyball, the components of physical condition consist of 1) strength, 2) endurance, 3) explosive power, 4) speed 5) flexibility 6) agility 7) balance 8) accuracy 9) reaction, these components have their respective roles according to the characteristics they have (Alfian et al., 2023).

One aspect of physical condition that is very important for every athlete in sports is agility, which must be continuously improved during training (Rista et al., 2019). In volleyball, players need very high agility to adapt to changing conditions on the field, and this agility influences the results of the match. To improve the performance of volleyball players, much attention is paid to the development of techniques and training techniques that can improve agility (Rahardian et al., 2019). Agility is the ability of players to change direction and speed, but in a team, agility and speed are rarely given by coaches in training if a team does not have long-term preparation; when practicing, the agility training menu looks very rare and is only given a little by the coach (Purnomo & Irawan, 2021). One of the tools for training agility is the ladder drill, which is one of the many types of agility training that athletes can use to improve their agility. However, its implementation must be done in different ways to avoid boredom when doing it (Fansuri & Situmeang, 2021).

From the explanation above, it can be concluded that this study aims to fill the knowledge gap about agility training and ladder drill training for volleyball players on the SMK Pasundan 2 Banjaran field who have never undergone such training specifically; these steps are expected to provide deeper insight into how this training can make a positive contribution to improving agility with ladder drill training for volleyball players in blocking so that it can be implemented more widely in the development of agility training programs in volleyball in various places.

LITERATURE REVIEW

Ladder drill

A ladder drill is a tool that trains foot agility in the form of a ladder placed on the ground or field, which functions to train leg muscles. This training ladder is one of the most common tools in the world, and it helps athletes in various movements that train agility with good foot coordination. This ladder training is an exercise that has many variations. It is a form of physical training accompanied by motor skills, the function of which is to train foot agility in a balanced way (Prasetya, 2019). A ladder drill is not only a tool used to develop foot speed; when used in various ways, a ladder drill becomes a multipurpose tool, namely as a tool to increase agility and reaction speed (Alviana et al., 2020). There are several forms of training, including ladder drill icky shuffle, which is a type of agility ladder drill that can improve agility using an agility ladder with the movement of both feet placed next to and inside the agility ladder boxes quickly so that it will affect increasing the athlete's agility (Pratama, 2021). Then, x-over zigzag is a simple drill that can improve agility (Maretno & Arisman, 2020). Lateral in and out can be a simple drill that can improve agility. Do the starting position from outside the ladder (Maretno & Arisman, 2020). Side hop training is a form of plyometric training that can improve agility elements (Mutaqin et al., 2017).

Agility

A player must be able to move quickly to change direction or escape (Oktanansa, 2022). Agility is a complex movement where other elements, such as flexibility, coordination, and speed, react simultaneously (Yuliawan & Sugiyanto, 2014). To help players play volleyball well, they need to have a high level of agility; when playing volleyball, this agility part is increasingly honed so that agility increases; agility is closely related to the feet, which are the basis of all basic skills in playing volleyball (Tias, 2013). Agility is the body's ability to change various positions at high speed (Sumerta et al., 2021).

RESEARCH METHODOLOGY

The research method used in this study is an experimental method with a quantitative approach. The author of this study used an experimental design, namely a two-group pretest-posttest design; the population in this study were PBV Sunrise athletes, the sample used was 30 people aged 17-19 years, the sampling technique used purposive sampling, the data collection technique used by the researcher was the side step test, to find out how fast the sample moves from the right side to the left. Data was obtained at the beginning of the experiment as initial data and at the end of the experiment as final data. The data that had been collected from the pre-test and post-test participants were then analyzed using a paired t-test with SPSS. This test is to find out if there is a difference or influence. Data analysis is used to see if there is a significant increase in agility ladder drill training to increase the agility of volleyball players.

RESULTS

Table 1 shows that the pre-test obtained an average value of the experimental pre-test, 35.47, while the experimental post-test obtained a value of 48.53; the lowest value of the Experiment pre-test was 29. While the Experiment post-test was 46, the highest value of the Experiment pre-test was 43, while the Experiment post-test was 50. Moreover, the N value is 15. Furthermore, the author conducted a normality test in Table 2.

Tabel 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test Experiment	15	29	43	35.47	4.257
Post-Test Experiment	15	46	50	48.53	1.356
Pre-test Control	15	29	42	36.40	3.501
Control Post-Test	15	33	43	38.80	2.783
Valid N (listwise)	15				

Tabel 2. Tests of Normality

Group		Shapiro-Wilk[a]
		Sig.
Results	Pre-Test Experiment	.832
	Post-Test Experiment	.052
	Control Pre-Test	.631
	Control Post-Test	.340

Shapiro-Wilk Test to show the results of the data normality test. Table 2 shows that the pre-test experimental statistical value Sig. is .832. At the same time, the post-test experiment obtained a statistical value of Sig. of .052. Based on the test results, both data obtained a Sig. Value> 0.05, then both data are declared "Normally Distributed." Therefore, the author uses a parametric approach to make a hypothesis. The results of the hypothesis test are presented in Table 3. Table 4 shows a sig value > 0.05, so it can be stated that the data is distributed homogeneously.

Tabel 3. Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Results	Based on Mean	3.948	1	28	.057
	Based on Median	3.346	1	28	.078
	Based on Median and with adjusted df	3.346	1	19.793	.082
	Based on trimmed mean	3.720	1	28	.064

Tabel 4. Independent T-test

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower
Results	Equal variances assumed	.000	9.733	.799	8.096
	Equal variances not assumed	.000	9.733	.799	8.068

DISCUSSION

Based on the results of the study, it can be concluded that there is a significant influence between agility ladder drill training and the agility of volleyball athletes; these findings are in line with the findings of those conducted by (Sulis et al., 2023) entitled "The Effect of Agility Ladder Drill Training with the Lateral Run Method in Increasing Agility in Futsal Players" The research was motivated by the ladder drill with the lateral run method as one of the factors to increase agility in futsal players. Agility ladder drills are exercises that aim to improve agility, especially in the context of futsal sports. The purpose of this study was to determine the effect of the lateral run method on the agility of futsal players on the Blulukan Karanganyar futsal field. The study was conducted using a quasi-experimental method with the pre-and Post Design Control approach. Data were analyzed using SPSS 22 software to obtain the characteristics of futsal players based on age, significant values , and test differences in influence. The results showed that the average age of futsal players was 16 years (36.7); there was a significant difference before and after training in both groups. The significant value (2-tailed) in group 1 and group 2 is less than 0.05, which means that there is a significant effect. However, the difference test between the two groups did not show a significant difference (AsympSig> 0.05), which means that the effect of Lateral Run training on increasing agility did not differ significantly between the two groups. Thus, it can be concluded that the research on Lateral Run Training can increase agility in

futsal players. However, there is no significant difference in the effect between the groups that do agility ladder drills.

These training ladders are some of the most common tools in the world, and this tool helps athletes in various movements that train agility with good foot coordination. This ladder training is an exercise that has many variations. It is a form of physical training accompanied by motor skills whose function is to train foot agility in a balanced way (Prasetya et al., n.d.). In this study, the leader drill will focus on the maximum strength component and the repetition method. The repetition method is a training method that emphasizes the element of repetition (repetition) with a fixed or varying rest interval and distance. Rest training between repetitions and sets depends on the heart rate recovery period (returning to the initial heart rate of the core exercise) (Sumpena, 2019).

CONCLUSION

This study concludes that agility ladder drill has a significant effect on the agility of volleyball players. Thus, regular training using agility ladder drills can be a solution to improve the agility of volleyball players.

REFERENCES

Alfian, J., Bina, U., & Getsempena, B. (2023). *Jurnal Ilmiah Mahasiswa PENGARUH LATIHAN SHUTTLE RUN TERHADAP KELINCAHAN DALAM*. *4*(1), 1–11.

Alviana, S. I., Mintarto, E., & Hariyanto, A. (2020). *The Effect of Exercise with Ladder Drill Slaloms and Carioca on Speed and Agility*. *2*(1), 103–108.

Fansuri, H., & Situmeang, R. (2021). Kontribusi Variasi Latihan Ladder Drill Terhadap Kelincahan Atlet Bulu Tangkis. *Jurnal Olahraga Dan Kesehatan Indonesia*, *1*(2), 116–121. https://doi.org/10.55081/joki.v1i2.308

Maretno, M., & Arisman, A. (2020). Ladder Drill Dalam Meningkatkan Kelincahan Atlet Bola Voli. *Jurnal Muara Olahraga*, *3*(1), 46–55. https://doi.org/10.52060/jmo.v3i1.455

Mutaqin, R. T., Hariyanto, E., & Sudjana, I. N. (2017). Pengaruh Latihan Skipping Dan Side Hop Terhadap Keterampilan Dribbling Pada Anak Didik U16-17 Ssb Psdm Kabupaten Blitar. *Gelanggang Pendidikan Jasmani Indonesia*, *1*(1), 14. https://doi.org/10.17977/um040v1i1p14-29

Oktanansa, R. (2022). *Jurnal cerdas sifa pendidikan*. *11*, 86–96.

Prasetya, R., Tutur, P., & Pd, J. S. (n.d.). *PENGARUH LATIHAN LADDER DRILL IN OUT SHUFFLE TERHADAP KELINCAHAN PEMAIN FUTSAL SMAN 16 SURABAYA Abstrak*. 15–19.

Pratama, S. A. (2021). Pengaruh Latihan Ladder Drill Icky Shuffle Terhadap Peningkatan Kelincahan Pemain Futsal SBI Dompu Tahun 2021. *Sportify Journal*, *1*(2), 82–90. https://doi.org/10.36312/sfj.v1i2.10

Prativi, G. O. (2013). Pengaruh Aktivitas Olahraga Terhadap Kebugaran Jasmani. *Journal of Sport Sciences and Fitness*, *2*(3), 32–36.

Purnomo, A., & Irawan, F. A. (2021). Analisis kecepatan dan kelincahan dalam

menggiring bola pada tim futsal. *Sepakbola*, *1*(1), 1. https://doi.org/10.33292/sepakbola.v1i1.90

Rahardian, M., Hariyanto, E., & Hariyoko. (2019). Pengaruh Model Latihan Ladder Drill Lateral Dan Zig-Zag Hops Terhadap Peningkatan Kelincahan. *Indonesia Journal of Sports and Physical Education*, *1*(1), 27–33.

Rista, M., Universitas, R., Malang, N., Hariyanto, E., Negeri, U., Universitas, H., Malang, N., & Kunci, K. (2019). Pengaruh Model Latihan Ladder Drill Lateral Dan Zig-Zag Hops Terhadap. *… Journal of Sport and …*, *1*(1), 27–33.

Sulis, R U N, Kelincahan, M., & Pemain, P. (2023). *Journal of Sport Sciences and Fitness PENGARUH LATIHAN AGILITY LADDER DRILL METODE LATERAL*. *9*(2), 88–94.

Sumerta, I. K., Santika, I. G. P. N. A., Dei, A., Prananta, I. G. N. A. C., Artawan, I. K. S., & Sudiarta, I. G. N. (2021). Pengaruh Pelatihan Circuit Training Terhadap Kelincahan Atlet Sepakbola. *Jurnal Pendidikan Kesehatan Rekreasi*, *7*(1), 230–238.

Sumpena,2019. (2019).

Tias, P. (2013). *Journal of Sport Sciences and Fitness SMP BOJA TAHUN 2011 / 2012*. *2*(2), 19–24.

Yuliawan, D., & Sugiyanto, F. (2014). Pengaruh Metode Latihan Pukulan Dan Kelincahan Terhadap Keterampilan Bermain Bulutangkis Atlet Tingkat Pemula. *Jurnal Keolahragaan*, *2*(2), 145–154. https://doi.org/10.21831/jk.v2i2.2610