



Ladder Drill Training on the Agility of Beginner Badminton Athletes

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Abstract

This study aims to determine the effect of ladder drill training on novice male badminton athletes at U 12-13 Club PB Pusri Palembang. The method used in this research is experimental, which means a sample is given a treatment. The research design used is One Group Pretest-Posttest Design. This sampling technique used total population sampling with a sample size of 30 athletes. The instrument of this research is agility. From the results of data processing and analysis using the data normality test, homogeneity test and hypothesis test using the T test formula, the results were that ladder drill training alone increased agility abilities in novice male badminton athletes. This can be seen from the results of data analysis through calculating the t test formula with the calculated t criterion being greater than ttable ($14.730 > 1.70$) with a confidence level of 0.95 ($\alpha = 0.05$) and the number of samples ($N = 30$). The implications of ladder drill training can have an influence on increasing agility in novice male badminton athletes U 12-13 Club PB Pusri Palembang.



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INTRODUCTION

Badminton is an individual game that can be played by one person against one person and two people against two people, using a racket as a hitting tool and a shuttlecock as a hitting object, with a rectangular field with a net bordered as a separator for your own and your opponent's playing data. (S.Sudadik, 2020). Setiawan et al., (2020) Badminton is played by hitting the shuttlecock using a racket with the target over the net in the middle of the court. This game can be played on open and closed courts. Badminton is a high-intensity sport with sudden movements and changes in direction. Players must have good physical condition to support agility in leg movements, jumping and balance. (Rahman et al., 2021). Badminton is a simple sport that can be played on a simple court, so it is not uncommon for many people to like it and it has become a popular sport and has become a sport that has won many awards for Indonesia on the international stage. The basic techniques in badminton consist of: 1) racket grip consisting of American grip, forehand grip, backhand grip and combination grip, 2) service consisting of short forehand service, forehand long service and backhand short serve, 3) stroke in above (overhead stroke) which consists of overhead lob forehand and over drop forehand, 4) stroke from below (underhand stroke) which consists of underhand lob forehand, netting backhand (Putra & Sugiyanto, 2016)

In order to achieve badminton technical abilities, physical components are needed that can support achievement. Badminton players are required to develop physical components., In badminton there are the most dominant components: endurance, leg muscle explosive power, speed and agility. A badminton athlete needs good agility. Agility is an important

thing for a badminton athlete, for example, to reach the shuttlecock across the badminton court, a player must have good agility so that he can control the court. (Hinda Zhannisa et al., 2018) One of the physical components that best supports the needs of badminton athletes is agility. Agility is an important physical component that a badminton athlete must have. Agility is a person's ability to change direction and position and body position quickly according to the situation and conditions faced in a particular field without losing body balance, agility is influenced by several factors (Firdaus Soffan Hadi, 2016). Agility is a person's ability to run, change body movement and direction.

The more agile a badminton athlete is, the better they will be, so they can easily move quickly and change direction deftly so that it can support the badminton athlete's achievements (Andara & Wiriawan, 2017). There are many benefits if someone has agility, including being able to easily perform varied movements quickly, adapting to master certain techniques compared to players who do not have agility (Aji & Wahyudi, 2021). There are many benefits if someone has agility, including being able to easily perform varied movements quickly, adapting to master certain techniques compared to players who do not have agility. Ladder drill is a form of training tool that resembles steps made of rope and placed on the floor, with the user using one or two feet. This exercise cannot be separated from the strength of the lower extremity muscles (Bani & Widodo, 2016) Ladder drill is a form of training aid that resembles a ladder, which is made of rope and placed on the floor by stepping on one or two feet (Chandrakumar & Ramesh, 2015). Ladder drill training can be used in various sports, especially badminton, because ladder drill training can increase body agility. Ladder drill

exercises are usually used by athletes to increase agility (Nuryadi & Firmansyah, 2018).

The Badminton Association (PB) is a forum for developing badminton athletes. The number of badminton clubs in the Palembang area is growing rapidly, one of which is PB Pusri Palembang which is located at PT Pusri Palembang GOR. PB Pusri Palembang has two badminton coaches who are former badminton players from their respective eras. The following are the conclusions of the questions and answers carried out to resolve the interests: (1) Agility training in taking the opponent's ball, monotonous; diversity used (2) coaches need a foundation for an agility training program. and (3) athletes do not understand the importance of learning agility training.

Footsteps or footwork are very important in badminton because having good footwork is something that is very influential on an athlete's performance, from various forms of training in badminton, especially for rare foot agility, coaches must be really careful to apply the right training for results, which influences agility. At the PB Pusri club, currently the form of ladder drill training is still lacking in variety which has an impact on athletes' agility, for this reason it is necessary to develop a form of ladder drill training so that it can increase the agility of PB Pusri Palembang athletes. Not having a programmed form of training and not focusing on training causes a decline in the athlete's physical condition, which results in reduced leg agility, which has a big impact on reducing athlete performance, so this research needs to be carried out in order to get the right program for athletes. Physical training is an important exercise to increase agility. The lack of physical training results in athletes being less agile in carrying out movements. Based on observations on the PB Pusri field when the U12-13 male

athletes were training, the athletes were still less agile in their movements when taking the ball from their opponents. This is still an important task for coaches. So this research needs to be carried out in order to improve the agility of male U12-13 badminton beginner athletes at PB Pusri Palembang. In fact, in the footwork movement of taking the ball, there were 5 (10%) athletes who had good agility when taking the footwork to take the ball, 6 (13%) athletes were in the good category, 8 (16.7%) athletes were in the fair category, 10 (26.7%) athletes in the poor category, and 15 (33.3%) percent of athletes in the very poor category. Meanwhile, in the game of badminton, footwork or agility in your footsteps is really needed so that you can easily master the techniques of the game and dominate the badminton court. To overcome this, the researcher tried to provide a solution to the problem above using the ladder drill training method. Suci Fitriyani 2019 with the title "The influence of ladder drill training on the footwork ability of PB Telkom Padang badminton athletes" based on the results of this research, it was found that there was an effect of ladder drill training on the footwork ability of PB Telkom Padang badminton athletes. Agus Tri Nofianto 2018 with the title "The influence of Shuttle Run and Redder Drill training on increasing the agility of 6-point shadow movements of badminton athletes aged 11-13 years PB Sukowati Sragen 2018" Based on the results of the research above, there is an influence of Shuttle Run and Ladder Drill training on increasing agility. 6-point shadow movement for badminton athletes aged 11-13 years. Hartati et al., (2021) Training is a systematic process that is carried out repeatedly to improve skills, energy capacity and physical use while paying attention to educational aspects. Exercise aims to: 1.) improve a person's basic physical condition in general; 2.) grow

and maximize one's physical potential; 3.) improve and perfect techniques; 4.) create and remember playing skills, tactics and techniques; 5.) increase athletes' physical and mental readiness for competency (Syahroni et al., 2019). The training loads given to athletes are known as "training principles", which include concepts such as readiness, individual adaptation, overload, progression, specific variation, warm-up and cool-down, long-term training, and the opposite principles, namely moderation and systematic (Intan Primayanti, 2019).

Based on problems in the field, agility is really needed in badminton, and agility can be improved by practicing ladder drills. Therefore, researchers are interested in conducting research entitled "The Effect of Ladder Drill Training on the Agility of U12-13 Boys Badminton Beginner Athletes at the PB Pusri Palembang Club." It is intended that this research will then help badminton administrators decide on the best coaching regimen to help athletes succeed. Therefore, this research must be carried out.

METHODS

The method used in this research is the experimental method. An experiment is a way to look for a cause and effect relationship (causal relationship) between two factors that are deliberately caused by researchers by eliminating, reducing or eliminating factors that could interfere. Experiments are always carried out with the aim of seeing the consequences. perlakuan (Arikunto, 2019). Pembelajaran et al., (2022) The group in this study was given a pretest, treatment and posttest. In this study, the researcher tried to prove whether the ladder drill method could have an effect on the agility of the U12-13 male badminton beginners from the PB Pusri Palembang club. The research design used

pretest, treatment and posttest. In this study, researchers tried to prove that the ladder drill method can have an effect on novice male badminton athletes. Sugiyono (2017) Using the entire population as the research sample. The sample used was the entire population, namely 30 athletes. The test instrument used is an agility test or running back and forth. Data analysis techniques in this research used normality tests, homogeneity tests, and hypothesis tests assisted by the SPSS 21 program.

RESULT

The results of the research that has been carried out, agility data results were obtained from the initial and final tests. Then tested using normality, homogeneity and hypothesis tests. The results obtained for the Kolmogorov-Smirnov normality test are as follows.

Table 1. Normality Test Results

Variabel	t	Sig	Information
Pre-test	0,167	0,200	Normal
Post-test	0,175	0,230	Normal

Based on the results of the normality test using the One Sample Kolmogorov Smirnov Test above, it is more likely that the price is between (-1) and (+1), so the results obtained are that the pretest and posttest data are normally distributed. The next result is the homogeneity test result.

Table 2. Homogeneity Test Results

Variabel	Significant Value	Conclusion
Agility	0,180	Homogen

The results obtained significant data >0.05 , stating that the examples of differences were homogeneous, so at that time speculation stated that changes in current factors were something that was

very similar or recognized. The results of the hypothesis test are to find out whether the ladder drill training data has an effect on agility.

Table 3. Uji Paired T-Test

Variabel	t-hitung	Sig.	Level of Significant
Pre-test & Post-Test	14,730	0,000	0,05
N: 30			

Information from the measured calculation "t test" obtained a result of 14.730 while the T table was 1.70 which was obtained from the T dispersion table with dk=39 and a certainty level of 95% (=0.05) recorded in the table. The speculation testing standard admits H_a if $t_{count} > T_{table}$ (-1), and rejects H_0 if $t_{count} < t_{table}$ (1-), because t_{count} (14.730) $>$ t_{table} (1.70), then there is a big difference between the posttest results and the pretest results. In this way H_0 's theory is rejected and H_a 's speculation is accepted. This means that there is an influence of ladder drill training on agility in male badminton beginner athletes U 12-13 at the PB Pusri Palembang Club.

DISCUSSION

The agility pretest, the average result was 14.36 and for the agility posttest the average result was 32. From the results of the measured calculation "t test" the result was 14.730, while the T table was 1.70 which was obtained from the T dispersion table with dk=39 and a certainty level of 95% (=0.05) are noted in the table. The speculation testing standard admits H_a if $t_{count} > t_{table}$ (-1), and rejects H_0 if $t_{count} < t_{table}$ (1-), because t_{count} (14.730) $>$ T_{table} (1.70), then there is a big difference between the posttest results and the pretest results. The results of this research show that ladder drill training can be used to increase agility in male beginner badminton athletes U 12-13 at the PB Pusri

Palembang Club. Based on previous research conducted by Zainuddin & Yusuf (2021) The results obtained were that ladder drill training alone could influence the agility and speed of UNDIKMA futsal players. Also agree with research conducted by Efendi (2019) Ladder drill training can improve agility in young children. This is because, it can be seen that from being given a real ladder exercise there is an increase from the initial test data to the final test. Remember that this exercise is carried out for one and a half months with repetition 3 times a week. In this case, I agree with what was said by Pranata & Kumaa (2022) that preparation is the right interaction to prepare competitors at the best level of execution and is completed over more than one repetition and with increasing loads. Training principles play a very important role in several aspects, namely the physiological and psychological aspects of the athlete, as well as being able to avoid injuries during training (Cahayani et al., 2023).

The aim of this research was to improve agility training for novice male badminton athletes U 12-13 at the PB Pusri Palembang Club. Ladder drill training is a form of physical exercise that functions to train leg agility and balanced movement synchrony. Ladder drill is an exercise that uses a ladder which functions to increase agility, nimbleness and speed in movement. Pramukti & Junaidi (2014) The benefits of practicing ladder drills can help improve various aspects of basic sports movements, for example body balance, muscle endurance, reaction speed and coordination between body parts. Rajendran (2016) ladder drill training is the best way to improve speed, agility, coordination, balance, and this exercise is not intended to cause significant fatigue or shortness of breath. Based on the description above, it can be concluded that the ladder ladder exercise is a physical

exercise that prioritizes training, one of which is agility, which is very effective. Agility is an important component or part in supporting a person's abilities, especially for badminton athletes. Almuslimiati (2018) Agility describes the ability to move in all directions, athletes who have high agility are people who can move in all directions. Another opinion said by Nugraha et al., (2017) that agility is the ability to change direction quickly and precisely when time moves without experiencing imbalance.

The results obtained show that ladder drill training can be given to novice male badminton athletes U 12-13 Club PB Pusri Palembang, because it has a positive impact on increasing agility in novice male badminton athletes. Agility is very necessary in sports activities or other physical activities, body agility is very helpful for mastering basic movements and increases a person's self-confidence. Agility is a very important physical component for athletes, especially badminton athletes (Yuliawan & Sugiyanto, 2014). So from the explanation above, the conclusion is that ladder drill training alone can improve agility results in novice male badminton athletes U 12-13 at the PB Pusri Palembang Club. It's just that the author still feels lacking in this research, due to limited energy, time and materials. So, in the future it would be better to be able to perfect research with broad insight and scope.

CONCLUSION

Based on the results of the research and data analysis that has been obtained, it can be concluded that ladder drill training alone can have an effect on increasing agility results in male badminton beginner athletes U 12-13 at the PB Pusri Palembang Club. The results of this research show that ladder drill training can be used as a training method to

increase agility results. From this research, researchers feel that there are still many shortcomings, especially lack of time and money. Suggestions from researchers for future researchers to try other forms or methods to get maximum results.

REFERENCES

- Aji, A. T., & Wahyudi, H. (2021). Pengaruh Latihan T-Sprint Terhadap Peningkatan Kelincahan Pemain Sepak Bola Di Ssb Mitra Fc U-19 Kabupaten Sumenep. *Jurnal Kesehatan Olahraga*, 05.
- Almuslimiati, A. (2018). Kontribusi Kelincahan Terhadap Kemampuan Dribbling Bola Basket Siswa Putra Ekstrakurikuler SMA Negeri 11 Pekanbaru. *Universitas Islam Riau*.
- Andara, E. H., & Wirriawan, O. (2017). Perbandingan Komponen Kondisi Fisik Bulutangkis pada Atlet Pb Fifa Sidoarjo dan Atlet Pb Satria Muda Sidoarjo U17. *Jurnal Prestasi Olahraga*, 3(1), 1–4.
- Arikunto, S. (2019). *Prosedur Penelitian Suatu Pendekatan Praktik*. <http://202.70.136.141:8080/handle/123456789/62880>
- Bani, K. A., & Widodo, A. (2016). Pengaruh Latihan Ladder Drill icky Shuffle Terhadap Kelincahan. *Jurnal Kesehatan Olahraga*, 05(02), 40–46.
- Cahayani, I. G., Destriana, D., & Aryanti, S. (2023). Latihan lari zig-zag terhadap hasil kelincahan pemain futsal academy women bigreds palembang. *Journal of Sport Science and Fitness*, 9(1), 27–33.
- Chandrakumar, N., & Ramesh, C. (2015). Effect of ladder drill and SAQ training on speed and agility among sports club badminton players. *InternatIonal Journal*, 1(12), 527–529.
- Efendi, D. I. (2019). Pengaruh Latihan Ladder Drill Terhadap Kelincahan

- Pada Anak Usia Dini Kelompok B di Taman Kanak-kanak Khoiriyatussibyan. Prosiding SNasPPM, 4(1), 16–21.
- Firdaus Soffan Hadi, D. (2016). Pengaruh Latihan Ladder Drills Terhadap Peningkatan Kelincahan Siswa U-17 Di Persatuan Sepakbola Jajag Kabupaten Banyuwangi. *Jurnal Pendidikan Jasmani*, 26(1), 213–228.
- Hartati, Aryanti, S., Destriana, & Pangestu, E. (2021). Uphill running exercise of speed on futsal extracurricular high schools. *Journal of Physics: Conference Series*, 1832(1).
<https://doi.org/10.1088/1742-6596/1832/1/012057>
- Hinda Zhannisa, U., Fatkhu Royana, I., Kusuma Prastiwi, B., & Slamet Pratama, D. (2018). Analisis kondisi fisik tim bulutangkis Universitas PGRI Semarang. *Journal Power Of Sports*, 1(1)Hinda Zhannisa, Utvi Fatkhu Royana, Ibnu Kusuma Prastiwi, Bertika Slamet Pratama, Dani), 30–41.
- Intan Primayanti, I. (2019). Pengaruh Latihan Drill Dan Latihan Pola Pukulan Terhadap Kemampuan Smash Bulutangkis Pada Pb Liansa Junior Masbagik. *Program Studi Pendidikan Olahraga Dan Kesehatan, Fakultas Pendidikan Olahraga Dan Kesehatan, Institut Keguruan Dan Ilmu Pendidikan IKIP Mataram*, 6, 25–31.
- Nugraha, E., Susilawati, D., & Mulyanto, R. (2017). Pengaruh Latihan Kelincahan Terhadap Kemampuan Footwork Permainan Bulutangkis. *SpoRTIVE*, 3(1), 511–520.
- Nuryadi, A., & Firmansyah, G. (2018). Pengaruh Latihan Ladder Drill Terhadap Kecepatan Lari 60 Meter Pada Siswa Sekolah Bola Basket Loc Sidoarjo. *JP.JOK (Jurnal Pendidikan Jasmani, Olahraga Dan Kesehatan)*, 2(1), 63–69.
<https://doi.org/10.33503/jpjok.v2i1.191>
- Pembelajaran, M., Based, P., Terhadap, L., Berpikir, K., & Dalam, K. (2022). Desain kuasi eksperimen dalam pendidikan : literatur. 8(3), 2476–2482.
<https://doi.org/10.36312/jime.v8i3.3800/http>
- Pramukti, T., & Junaidi, S. (2014). Pengaruh latihan ladder drill dan latihan abc run terhadap peningkatan kecepatan pemanjatan jalur speed atlet panjat tebing FPTI Kota Magelang. *Journal of Sport Science and Fitness*, 3(4).
- Pranata, D., & Kumaat, N. (2022). Pengaruh Olahraga Dan Model Latihan Fisik Terhadap Kebugaran Jasmani Remaja: Literature Review. *Jurnal Kesehatan Olahraga*, 10(02), 107–116.
- Putra, G. I., & Sugiyanto, F. (2016). Pengembangan pembelajaran teknik dasar bulu tangkis berbasis multimedia pada atlet usia 11 dan 12 tahun. *Jurnal Keolahragaan*, 4(2), 175.
<https://doi.org/10.21831/jk.v4i2.10893>
- Rahman, F., Budi, I. S., & Kuncoro, A. D. (2021). Efek Kombinasi Latihan Eccentric dan Neuromuscular Electrical Stimulation (NMES) pada Daya Tahan Otot Tungkai Pemain Badminton Amatir: Case Report. *Jurnal Kesehatan Vokasional*, 6(2), 70.
<https://doi.org/10.22146/jkesvo.62383>
- Rajendran, K. (2016). Effect of Ladder Training on Agility among College level Football Players. *International Journal of Recent Research and Applied Studies*, 3(4), 23.
- S.Sudadik. (2020). Indonesian Journal for. *Journal.Unnes*, penelusuran(jurnal

- physical education and sport), 188–196.
- Setiawan, A., Effendi, F., & Toha, M. (2020). Akurasi Smash Forehand Bulutangkis Dikaitkan dengan Kekuatan Otot Lengan dan Koordinasi Mata-Tangan. *Jurnal MAENPO: Jurnal Pendidikan Jasmani Kesehatan Dan Rekreasi*, 10(1), 50. <https://doi.org/10.35194/jm.v10i1.949>
- Sugiyono. (2017). *Metode Penelitian Bisnis: Pendekatan Kuantitatif, Kualitatif, Kombinasi, dan R&D*. Penerbit CV. Alfabeta: Bandung. https://scholar.google.com/scholar?q=related:lnOPOjRwl0cJ:scholar.google.com/&scioq=Metode+Penelitian+Bisnis:+Pendekatan+Kuantitatif,+Kualitatif,+Kombinasi,+dan+R%26D&hl=id&as_sdt=0,5
- Syahroni, M., Pradipta, G. D., & Kusumawardhana, B. (2019). Analisis Pembinaan Prestasi terhadap Manajemen Olahraga Sekolah Sepak Bola (SSB) Se-Kabupaten Pati Tahun 2019. *Jossae (Journal of Sport Science and Education)*, 4(2), 85–90.
- Yuliawan, D., & Sugiyanto, F. X. (2014). Pengaruh metode latihan pukulan dan kelincahan terhadap keterampilan bermain bulutangkis atlet tingkat pemula. *Jurnal Keolahragaan*, 2(2), 145–154.
- Zainuddin, F., & Yusuf, P. M. (2021). Pengaruh latihan ladder drill terhadap kelincahan dan kecepatan pemain futsal Undikma. *Jurnal Ilmiah Mandala Education*, 7(2).