



## Contribution to Agility, Endurance, and Leg Length Towards The Ability Dribbling and Passing in Futsal Extracurricular Religion at SMK Negeri 3 Semarang

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### Abstract

The technique that must be mastered by each player is to pass (passing), herding (dribbling), kicking (shooting), controlling, heading, a futsal player must also pay attention to physical supporting factors that can support good mastery of technique is speed, muscle strength, endurance, flexibility, accuracy, explosive power, coordination reaction, balance and agility. How big is the contribution between agility, endurance, leg length to dribbling ability and passing? This type of research is a type of research with a quantitative approach emphasizing its analysis on numerical data (numbers) processed by statistical methods. Inferential research analyzes the relationship between variables by testing hypotheses. The sample in this study was taken from 50 people who practiced at SMKN 3 Semarang. The number of samples is 50 people because there are only 50 people who practice gymnastics at SMKN 3 Semarang. The sampling technique in this study was the purposive sampling method. The results of the study were obtained from tests of passing ability and dribble ability conducted to 50 students who participated in futsal extracurricular activities at SMKN 3 Semarang. Agility will be able to improve the passing ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 7.7%. Durability will be able to increase the passing ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 34.9%. The leg length will be able to increase the passing ability of students who take futsal extracurricular activities at Vocational High School 3 Semarang at 32.4%. Agility will be able to increase the dribble ability of students who take futsal extracurricular activities at SMKN 3 Semarang by 29.5%. The length of the limbs will be able to increase the dribble ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 12.8%.

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## INTRODUCTION

Futsal comes from Spanish, namely Futbol (soccer) and Sala (room), which when combined means to be, Indoor Soccer. According to FIFA, the Futsal originated in 1930 in Montevideo, Uruguay. The first Futsal was introduced by Juan Carlos Ceriani, a soccer coach from Argentina (Maryati, 2012). Futsal is a solution for big cities with limited open areas. Even futsal has been competed internationally recently (Danu, Sahputra, and Wakidi, 2013). Accuracy of passing or passing a ball that is good, careful, and right on target will make it easier to score goals against opponents (Fahrizqi, 2018). There are six factors that can help players develop technical skills and tactics to play football well. Sports coaching in Indonesia in addition to forming Indonesian people who are physically and mentally healthy, also cultivate and foster honesty, sportsmanship (Hasbunallah, 2018).

Efforts to improve and reach the highest peak of achievement for an ideal athlete or player include four main aspects, namely: coaching technical training, coaching physical training, coaching tactics training, and development of psychological training (Bompa in Nurcahyo, 2012).

The ten components of physical conditions include corporation endurance, muscle endurance, muscle strength, flexibility (body composition), speed, agility, balance, reaction speed, and coordination (Adhi, Sugiharto, and Soenyoto, 2017).

Passing technique using the outer leg is often used to crossfeed a teammate who is in an area opposite to our position or it can also be for breakthrough bait that can deceive the movement of the opposing player (Halim, 2012).

Agility is important in its function to increase achievement in sports. Direct agility is used to coordinate multiple or simultaneous movements, facilitate mastery of high techniques, facilitate orientation towards opponents and the environment (Rudiyanto, 2012). Components of defense and block techniques need good agility from an athlete because when doing block and defense, we have to change the direction of our

movement with maximum speed towards spherical stimulation (Febriyanti, Dewanti, and Sujiono, 2017).

Agility is the ability of a person to be able to change direction quickly and precisely at the time of moving without losing the balance that is more agile and high in explosive muscle power of the limbs produced (Siswanto, Rahayu, and Fakhruddin, 2017).

Futsal sports require speed, strength, and endurance during the match (Setiawan, Soetardji, and Nugroho, 2014). Exercise is not only the quality or the amount of practice that is prioritized, but the quality or quality of training must be really considered by both the coach and a player. Exercises that are not in accordance with the needs of players will result in ineffectiveness in achieving the expected physical condition. To achieve the physical condition as expected, it is necessary to continue training (Purwanto, Yuwono, and Purwanto, 2013).

Dribbling has the purpose of building an attack, protecting the ball from the opponent, to free himself from the opponent's escort, to pass the opponent, to pass through free territory and open space to be able to pass or shoot during the match (Mariyono, 2017).

Physical condition is an absolute requirement that is needed in the achievement of sports achievements because every athlete must have a prime physical to be able to excel. The elements of the physical condition needed in each sport vary, therefore the physical condition of an athlete needs to be improved through training carried out in a systematic, steady and sustainable manner (Nur, Sugiharto, and Hidayah, 2017).

Determining factors can be mentioned there are three important factors including physical condition or physical fitness level, the accuracy of techniques or skills possessed, and environmental problems (Sajoto in Febriatmoko, Junaidi, and Nugroho, 2013).

There are ten components of the physical condition that must be met in sports, and their fulfillment is adjusted to the sports involved by athletes. The ten components of physical conditions include corporation endurance, muscle endurance, muscle strength, flexibility,

body composition, speed, agility, balance, reaction speed, and coordination.

Legs are parts of the human body, which are included in the lower (lower) plane of motion, which includes the hips, thighs, calves, and legs. The length of the legs can be known through the measurement results from the floor to the end of the spinal column (Ridwan, 2018). Leg muscle strength is the ability of a muscle or a group of muscles to overcome load resistance in carrying out activities (Suharno in Setiawan, 2015). Exercises to increase leg strength and body balance are one of them by loading exercises. For players not to feel bored with the loading exercises programmed by the trainers, the training exercises are realized by variations in the game of carrying (Akbar, and Indardi, 2014).

## METHODS

This type of research is a type of research with a quantitative approach emphasizing its analysis on numerical data (numbers) processed by statistical methods. Judging from the analysis, this research is included in inferential research. Inferential research analyzes the relationship between variables by testing hypotheses (Sugiyono, 2013). The method used in this study is quantitative correlational. "Correlational research aims to investigate the extent to which variations on one variable are related to variations in one or more variables, based on the correlation coefficient." (Sugiyono, 2013).

## RESULTS AND DISCUSSION

The results of the study were obtained from tests of passing ability and dribble ability conducted to 50 students who participated in futsal extracurricular activities at SMKN 3 Semarang. Data collection was carried out during experiments with data on agility, endurance, leg length, passing ability, and dribble ability. The purpose and purpose of this data description are used to determine the actual condition of agility, endurance, leg length, passing ability and dribble ability of students who take futsal extracurricular

activities at SMKN 3 Semarang. The results of each sample group can be seen in table 1.

**Table 1.** Summary of Data on Agility, Endurance, Leg Length, Passing Ability and Dribble Ability of Students Who Take Futsal Extracurricular Activities at SMKN 3 Semarang

	N	Min	Max	Mean	Std. deviation
Agility	50	11.2	13.8	12.27	0.82
Durability	50	20.09	47.33	35.07	7.01
Leg length	50	90	108	96.54	5.42
Passing ability	50	7	10	8.64	1.19
Dribble ability	50	21.6	36.33	29.09	5.02

Based on table 1 it is known that for the agility test using the agility t-test, the average student scores 12.27 seconds in the low category with a score of > 11.5 seconds. The best value is 11.02 seconds, which is included in the average category with a score of 10.5 – 11.5 seconds and the worst value is 13.8 seconds in the low category.

Based on the multistage fitness test running standard norm test, it is known that the durability of students of 35.07 is included in the assessment is lacking, because for ages 13 – 19 years it was found that the categories 35 – 38 included in the less category. The highest value is in 47.33 which falls into the very good category with a range of 46.5 – 52.4, while the worst value is 20.09 which falls into the very less category with a value of < 35.0.

For the length of limbs of students participating in futsal extracurricular activities at SMK 3 Semarang, the average student has a length of legs of 96.5cm, while students who have the longest leg length are 108 cm and the shortest is 90cm.

On the passing ability test, the data shows that on average students are able to give 8 – 9 times the correct passing of 10 trials, which are in the good category, while for the best students are able to give 10 times the right passing of 10 times trial. For the worst passing, students make 7 correct passes from 10 attempts.

The dribble ability test shows that the average student is able to complete the test with a time of 29.09 seconds. Students who were the quickest to complete the test were 21.60 seconds

while the oldest students completed the test with 36.33 seconds.

#### **The Effect of Agility on the Passing Ability of Students Participating in Futsal Extracurricular at SMKN 3 Semarang**

Agility will be able to improve the passing ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 7.7%. This increase shows that when students are given agility training, students will find it easier to find space to release accurate passing. Agility is part of the physical condition factor, which is the most important in supporting dribbling skills in futsal sports. Players who have agility are also easier to find space for him to release accurate passing.

#### **The Effect of Endurance on the Passing Ability of Students Who Follow Futsal Extracurricular at SMKN 3 Semarang**

Durability will be able to increase the passing ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 34.9%. The increase shows that when students are given endurance training, students will have good passing skills too. Endurance is the body's ability to carry out the physical activity for a long time. The longer the match time, the endurance of a player must also be high. High endurance also allows a futsal player to pass continuously during a match because the player has sufficient stamina.

#### **Effect of Leg Length on Passing Ability of Students Following Futsal Extracurricular at SMKN 3 Semarang**

The leg length will be able to increase the passing ability of students who take futsal extracurricular activities at Vocational High School 3 Semarang at 32.4%. This increase shows that when students have longer limbs, students will have good passing skills too. A sportsman who has a high proportion of body with long legs, although this is not always the case. The dribbling movement in futsal games requires good leg strength; the strength of players who have longer limbs is usually stronger compared to players who have shorter legs. A good leg length also makes a

player have leg strength, making it easier for the player to release accurate bait in the futsal game.

#### **The Effect of Agility on Dribble Ability of Students Following Extracurricular Futsal at SMKN 3 Semarang**

Agility will be able to increase the dribble ability of students who take futsal extracurricular activities at SMKN 3 Semarang by 29.5%. The increase shows that when students are given agility training, students will find it easier to make changes in the direction of dribbling. Agility is especially useful when players dribble and try to outwit your opponent by changing the direction of herding. Agility is also useful when players try to pass opponents and avoid physical collisions/collisions between players.

#### **Effect of Resilience on Dribble Ability of Students Who Follow Futsal Extracurricular at SMKN 3 Semarang**

Endurance will be able to improve the dribble ability of students who take futsal extracurricular activities at SMK 3 Semarang at 32.1%. The increase shows that when students are given endurance training, students will have better dribble abilities too. This high durability will make the ability to dribble from the player uninterrupted because of the low level of fatigue so that a player will be able to dribble in a constant motion for a longer time. This will be useful when all players are tired; players with good endurance will be able to dribble faster and more accurately than other players who experience fatigue.

#### **Effect of Leg Length on the Dribble Ability of Students Following Extracurricular Futsal at SMKN 3 Semarang**

The length of the limbs will be able to increase the dribble ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 12.8%. This increase shows that when students have longer limbs, students will have a sense of mastery in dribble. The length of the leg is related to ball possession during the dribble; this helps players to have good dribbling skills.

## CONCLUSION

From the results of the research and discussion it can be concluded the following: (1) Agility will be able to contribute to improving the passing ability of students who take futsal extracurricular activities at Vocational High School 3 Semarang at 7.7%, (2) Durability will be able to contribute to improving the passing ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 34.9%, (3) The length of the legs will be able to contribute to increasing the passing ability of students who take futsal extracurricular activities at SMKN 3 Semarang by 32.4%, (4) Agility will be able to improve the dribble ability of students who take futsal extracurricular activities at SMKN 3 Semarang by 29.5%, (5) Durability will be able to improve the dribble ability of students who take futsal extracurricular activities at SMKN 3 Semarang by 32.1%, (6) The length of the legs will be able to increase the dribble ability of students who take futsal extracurricular activities at SMKN 3 Semarang at 12.8%, (7) Based on the results of the study, the most effective training to improve passing and dribbling skills is endurance training because the endurance contributes the highest both to increasing passing and dribbling abilities of students who take futsal extracurricular activities at SMKN 3 Semarang.

## REFERENCES

- Adhi, B. P., Sugiharto, & Soenyoto, T. (2017). Pengaruh metode latihan dan kekuatan otot tungkai terhadap power otot tungkai. *Journal of Physical Education and Sports*, 6(1), 7-13. Retrieved from <https://journal.unnes.ac.id/sju/index.php/jpes/article/view/17315>
- Akbar, A., & Indardi, N. (2014). Meningkatkan kekuatan kaki dan keseimbangan tubuh pemain sepakbola dengan permainan sepakbola gendong. *Journal of Sport Sciences and Fitness*, 3(3). Retrieved from <https://journal.unnes.ac.id/sju/index.php/jssf/article/view/6251>
- Danu, I., Sahputra, R., & Wakidi. (2014). Upaya meningkatkan teknik dasar passing pada futsal dengan metode permainan tradisional kucing bola untuk siswa kelas xi ips sma muhammadiyah nanga pinoh. *Jurnal Pendidikan Jasmani Kesehatan dan Rekreasi (Penjaskesrek)*, 1(1). Retrieved from <http://jurnalstkipmelawi.ac.id/index.php/JPKR/article/view/54>
- Fahrizqi, E. B. (2018). Hubungan panjang tungkai, power tungkai dan koordinasi mata-kaki dengan kemampuan passing pada pemain unit kegiatan mahasiswa olahraga futsal perguruan tinggi teknokrat. *Journal of S.P.O.R.T Sport, Physical Education, Organization, Recreation, Training*, 2(1). Retrieved from <http://jurnal.unsil.ac.id/index.php/sport/article/view/508>
- Febriatmoko, H., Junaidi, S., & Nugroho, P. (2013). Kondisi fisik pemain sepak bola putra mandiri kota semarang tahun 2012. *Journal of Sport Sciences and Fitness*, 2(3). Retrieved from <https://journal.unnes.ac.id/sju/index.php/jssf/article/view/3867>
- Febriyanti, D., Dewanti, R. A., & Sujiono, B. (2017). Perbandingan metode latihan cone dan reaction ball terhadap kelincahan atlet puteri klub bola voli fortius universitas negeri jakarta. *Jurnal Ilmiah Sport Coaching and Education*, 1(2). Retrieved from <http://journal.unj.ac.id/unj/index.php/jsce/article/view/4470>
- Halim, S. 2012. *1 Hari pintar main futsal*. Bandung: Buku Kita.
- Hasbunallah. (2018). Hubungan antara panjang tungkai dan daya ledak tungkai dengan kemampuan lompat jauh siswa smp negeri 1 balusu. *Sportive: Journal of Physical Education, Sport and Recreation*, 1(2). Retrieved from <https://ojs.unm.ac.id/sportive/article/view/6391>
- Mariyono, Rahayu, S., & Rustiana, E. R. (2017). Metode latihan kelincahan dan fleksibilitas pergelangan kaki terhadap keterampilan menggiring bola. *Journal of Physical Education and Sports*, 6(1), 66-71. Retrieved from <https://journal.unnes.ac.id/sju/index.php/jpes/article/view/17324>
- Maryati. (2012). *Mengenal olahraga futsal*. Jakarta: PT. Balai Pustaka.
- Nur, M., Sugiharto, & Hidayah, T. (2018). Pengaruh metode latihan dan power otot tungkai terhadap kelincahan. *Journal of Physical Education and Sports*, 6(3), 279-285. Retrieved from <https://journal.unnes.ac.id/sju/index.php/jpes/article/view/20591>

- Nurcahyo, F. (2012). Pengaruh latihan kicking motion terhadap jauhnya tendangan bola dalam permainan sepakbola siswa ku 15 tahun di ssb selabora fik uny pada tahun 2010. *Media Ilmu Keolahragaan Indonesia*, 2(2). Retrieved from <https://journal.unnes.ac.id/nju/index.php/miki/article/view/2645>
- Purwanto, D., Yuwono, C., & Purwanto, E. P. (2013). Survey kondisi fisik dan keterampilan teknik dasar bola voli pada klub bola voli putri bravo banjarnegara tahun 2012. *Journal of Physical Education, Sport, Health and Recreation*, 2(4). Retrieved from <https://journal.unnes.ac.id/sju/index.php/peshr/article/view/1171>
- Ridwan, A. (2018). Hubungan panjang tungkai, dan daya ledak tungkai dengan kemampuan lompat jauh murid sd negeri 5 sinjai utara. *SPORTIVE: Journal of Physical Education, Sport and Recreation*, 1(2). Retrieved from <https://ojs.unm.ac.id/sportive/article/view/6376>
- Rudiyanto, Musyafari Waluyo, & Sugiharto. (2012). Hubungan berat badan tinggi badan dan panjang tungkai dengan kelincahan. *Journal of Sport Sciences and Fitness*, 1(2). Retrieved from <https://journal.unnes.ac.id/sju/index.php/jssf/article/view/1530>
- Setiawan, H, Soetardji, & Nugroho, P. (2014). Kondisi fisik dan kemampuan teknik dasar pemain futsal tim porprov kota semarang tahun 2013. *Journal of Sport Sciences and Fitness*, 3(4). Retrieved from <https://journal.unnes.ac.id/sju/index.php/jssf/article/view/6276>
- Setiawan, R. (2015). Sumbangan kekuatan otot tungkai, kelentukan pergelangan kaki, dan kecepatan ayun tungkai terhadap tendangan jarak jauh. *Unnes Journal of Sport Science*, 4(2). Retrieved from <https://journal.unnes.ac.id/sju/index.php/ujs/article/view/8650>
- Siswanto, Rahayu, T., & Fakhruddin. (2017). Hubungan Kelincahan, Kelentukan Togok dan Daya Ledak Otot Tungkai terhadap Kemampuan Smash Kedeng Sepaktakraw pada Siswa Ekstrakurikuler SD Negeri Margomulyo Pegandon Kendal. *Journal of Physical Education and Sports*, 6(1), 88-94. Retrieved from <https://journal.unnes.ac.id/sju/index.php/jpes/article/view/17328>
- Sugiyono. (2013). *Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan r&d*. Bandung: Alfabeta.