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Analysis of the passing distance of professional futsal players in the Indonesia Pro Futsal League

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ABSTRACT

The study purpose was to analyze the passing distance of professional futsal players in the Indonesia Pro Futsal League. This cross-sectional study was carried out in the final match of the 2021 Indonesia Pro Futsal League. All players except the goalkeeper were analyzed. We measured the distance of the passes made. Movie Maker software was used for cutting videos of every passing movement and Kinovea software was used for passing distance analysis. This study stated that in maintaining the ball possession, entering the opponent's defense, and trying to score goals, players can perform various types of passes such as short, medium, and long passes. The results showed that the average passing distance was 3.58 meters for the short pass, 7.46 meters for the medium pass, and 14.47 meters for the long pass. This futsal passing distance analysis can be used as a basis for passing mastery exercises. Therefore, the coach can plan passing training programs with specific distances and maximize the passing accuracy of the players.

KEYWORDS

Analysis; Distance; Passing; Futsal

1. INTRODUCTION

The version of football called futsal known as "futebol de salao" and is standardized by FIFA as the official version of "5-a-side" (Moore, Bullough, Goldsmith, & Edmondson, 2014). The concept of futsal athlete achievement to be able to achieve high and maximum performance is to be

carried out continuously, tiered and sustainable until peak performance. Futsal athletes' achievements cannot be done alone but must be systemic, integrated, directed and clearly programmed. Potential futsal athletes or those who have the potential to become champions are futsal athletes who have talent, high motivation in achieving and futsal athletes who are willing to train hard to realize these achievements, or futsal athletes who are already champions in their sport, and it is still possible to maintain or improve their performance (Carraco, Galatti, Massa, Loturco, & Abad, 2020).

In the modern world like today, many modern applications or tools that support the advancement of world sports. Futsal players must have highly developed abilities with repeated sprinting, leg muscle power and strength, along with ball skills in passing, dribbling and shooting, as well as well-developed coordination (Zeljko, Gilic, & Futsal, 2020). Passing is one of the performance principles of futsal players (Ueda et al., 2020). The pass is the most used action in futsal and is a basic element for any team play as it creates a connection between players on a team. In futsal, ball possession, movement and successful passes are very important to avoid marking up the opponent and also get a good attack, achieve a marking-free and balanced finish, get a greater chance to a scoring goal (Leite, 2012).

Successful passing requires understanding the interactions between each player during match because the ball carrier and teammates are constantly moving to create gaps to pass the ball while opposing players move to block the gap (Corrêa, Vilar, Davids, & Renshaw, 2014). Passing exercises need to be done so that players can make decisions correctly and quickly in which way to pass the ball and which part of the foot to use. Improvements in the passing practice process, some analysis of futsal passing techniques in matches have been observed in recent years. A research by Yiannaki *et al*. (Barron, Collins, & Carling, 2020) shows that there are 647 passes per team per game. Match analysis shows that 77.3% of ball receptions are done with the sole of the foot. However, there is no analysis of passing techniques related to the distance of passing made by players in the match. This is important in the process of improving the training and coaching of futsal athletes to master good-passing techniques.

The research of Travassos *et al.* (Travassos, Araújo, Davids, Esteves, & Fernandes, 2012) has studied the tendency of interpersonal coordination of futsal players that affects passing performance. The research reveals that the performance of passing actions is limited by the convergence of interpersonal distance values between players. The success of the pass seems to be due to the change in the value of the interpersonal distance between the ball carriers. Research suggests training to develop futsal passing performance by manipulating the value of the interpersonal distance between players. Research in this context is very important for future sports preparation because it contributes

to the optimization of players' technical preparation. In this study researcher main focus was to observe the passing distance of futsal players in the final match then measure how far the passing distance was made by the players.

2. METHODS

2.1. Design and participants

The cross sectional design was used to observe the passing distance of futsal players in the final match and then measure how far the passing distance was made by the players. Cross sectional design refers to an approach, observation, or data collection at a certain moment, carried out simultaneously at the same time in the people involved (Setia, 2016). The research data was obtained in the form of video in the 2021 Indonesian Futsal League finals. All players except the goalkeeper were analyzed. All passes were analyzed in order to measure the passing distances.

2.2. Procedures

The videos recorded were transferred into a computer and analyzed. The analysis was carried out starting from the cutting video of the futsal passing movement using Movie Maker software. Then the results of the cutting video of the futsal passing movement were analyzed for distance using the Kinovea software. The passing distance travelled was calculated as the cumulative number of consecutive frame displacements. The results of the analysis of the passing distance are calculated in meters. To more accurately characterize passing movements during futsal matches, the variables were analyzed across time and throughout play when the ball was in play.

2.3. Data analyses

Regarding data analyses, the results were presented as mean and standard deviation. Data analysis was carried out based on the total passing distance as a whole and the distance for each type of passing. All statistical procedures were performed using SPSS and Microsoft Excel.

3. RESULTS

Table 1 shows the overall futsal passing distance. The number of futsal passes in the final match was 459 times, with a total passing distance of 4731.70 meters. The average passing distance was 10.31 meters, the standard deviation was 4.83, the farthest distance was 24.79 meters, and the shortest distance was 1.26 meters.

Table 1. Description of the Overall Results of the Futsal Passing Distance Analysis

Overall Distance of Futsal Passing	
Statistics	**Results**
N	459
Amount	4731.70
Mean	10.31
SD	4.83
Farthest Distance	24.79
Shortest Distance	1.26

Table 2 shows the overall futsal short pass distance. The number of futsal short passes in the final match was 55 times, with a total short pass distance of 196.67 meters. The average short pass distance was 3.58 meters, the standard deviation was 1.16, the farthest distance was 4.98 meters, and the shortest distance was 1.26 meters.

Table 2. Data Description of Overall Results of Short Pass Distance Analysis

Overall Distance of Short Passing	
Statistics	**Results**
N	55
Amount	196.67
Mean	3.58
SD	1.16
Farthest Distance	4.98
Shortest Distance	1.26

Table 3 shows the overall distance of the futsal medium passing. It can be seen that the number of medium passes in the final match was 187 times, with a total distance of the medium pass of 1395.70 meters. The average distance of the medium pass was 7.46 meters, the standard deviation of was 1.39, the farthest distance was 9.99 meters, and the shortest distance was 5.05 meters.

Table 3. Description of Overall Results of Medium Pass Distance Analysis

Overall Distance of Medium Passing	
Statistics	**Results**
N	187
Amount	1395.70
Mean	7.46
SD	1.39
Farthest Distance	9.99
Shortest Distance	5.05

Table 4 shows the overall futsal long pass distance. The number of long passe in the final match was 217 times, with a total distance of the long pass of 3139.33 meters. The average distance of the long pass was 14.47 meters, the standard deviation was 3.40, the farthest distance was 24.79 meters, and the shortest distance was 10.02 meters.

Table 4. Description of Overall Results of Long Passing Distance Analysis

Overall Distance of Long Passing	
Statistics	**Results**
N	217
Amount	3139.33
Mean	14.47
SD	3.40
Farthest Distance	24.79
Shortest Distance	10.02

Table 5 shows the percentage of the passing distance for each type of pass, where the percentage of the long pass distance is greater than the short pass and medium pass. The percentage of long pass distance is 66.34%, medium pass is 29.49%, and short pass is 4.15%.

Table 5. Passing Distance Percentage

Passing Type	**Distance**	**Percentage**
Short Pass	196.67	4.15%
Medium Pass	1395.70	29.49%
Long Pass	3139.33	66.34%

4. DISCUSSION

Futsal is an indoor sport with hgh intensity and competitiveness (Borges et al., 2021). Through the ball trick technique using the feet, players can enter the ball into the goal to score goals. Passing in futsal games prioritizes the level of accuracy because the futsal field is small and the distance is close between players, both opposing players and players on the same team. Passing is one of the basic techniques of an indoor soccer game that is needed by the player. Almost all of along futsal game used passing. This is in line with Gómez *et al*.'s statement that in futsal games, ball possession involves group tactical behaviour with more passing used (Gómez, Moral, & Lago-Peñas, 2015). Tactics reflect the importance of match planning. Tactics create a game system that connects team formations with certain styles of play such as attacking or counter-attacking, slow or fast tempo, short or long passing. Players must develop passing techniques such as how to carry out efficient passing using body parts and knowledge of passing tactics where players know when to carry out passing. The decision to implement passing in a futsal match is done to be able to relieve the pressure defense allowed the team to retain possession of the ball, into the defense and advance the ball toward the front, and pass to a teammate who is in position to score (Pizarro, Práxedes, Travassos, Gonçalves, & Moreno, 2021).

Passing is one of the performance principles in futsal games (Ueda et al., 2020). Passing is very important in futsal because through passing the team can control the ball, organize attacks, change the course of tactics, and make counter-attacks quickly. Therefore, a player's ability to make good passes during game situations is a key skill underlying successful performance in team sports. Passing exercises need to be done so that players can make decisions correctly and quickly in which way to feed the ball and which part of the foot to use. Based on the part of the foot used, passing is classified as inside of the shoe for short passes, forefoot for long passes, the instep of the inside for lobs, outside of the foot for crosses, and inside of the foot for medium and long passes (Hermans & Engler, 2011). Research Mitschke & Milani (Mitschke & Milani, 2014) showed that of all 28.271 passes are analyzed, 59.6% played out in various forms by using inside, 14.6% with the inner instep, 9.1% by Instep and 16.7% with the outside. In addition to studying the use of the foot where the feeding section, the success of pass limited by changes in the value range of interpersonal between the ball carrier, so in practice should develop performance passing futsal by manipulating the value of distance interpersonal between players (Travassos et al., 2012). Based on the passing distance, passing can be divided into three, namely short pass, medium pass, and long pass (White & Griffiths, 2019). Results of the research in the 2021 Indonesian Futsal League final match, of the 459 passes

analyzed, 4.15% were found including short passes with an average passing distance of 3.58 meters, 29.29% including medium passes with an average passing distance of 7.46 meters, and 66.34% including long passes with an average passing distance of 14.47 meters. Passing ability must be developed in each training session to some degree. The main consideration in achieving a high level of passing skill is accuracy. Therefore, the results of this study can be used as a reference to train passing starting from passing the closest distance, then medium distance, and finally long distance.

5. CONCLUSIONS

This study states that in maintaining control of the ball, enters the opponent's defense, and attempt to score goals, players can perform various types of passing such as short, medium, and long pass. The results showed that the average passing distance was 3.58 meters for the short pass, 7.46 meters for the medium pass, and 14.47 meters for the long pass. This futsal passing distance analysis can be used as a basis for passing mastery exercises. Therefore, the coach can plan passing training programs with specific distances and maximize the passing accuracy of the players.

5. REFERENCES

1. Barron, D. J., Collins, D., & Carling, C. (2020). Match performance in a reference futsal team during an international tournament - implications for talent development in soccer Christopher Yiannaki. *Biology of Sport*, *37*(2), 147–156. https://doi.org/10.5114/Biolsport.2020.93040
2. Borges, L., Dermargos, A., Gorjão, R., Cury-Boaventura, M. F., Hirabara, S. M., Abad, C. C., … Hatanaka, E. (2021). Updating futsal physiology, immune system, and performance. *Research in Sports Medicine*, *30*(6), 659-676.https://doi.org/10.1080/15438627.2021.1929221
3. Carraco, D. D. S., Galatti, L. R., Massa, M., Loturco, I., & Abad, C. C. C. (2020). Centesimal age and relative age effect in elite futsal players. *International Journal of Exercise Science*, *13*(6), 329–341.
4. Corrêa, U. C., Vilar, L., Davids, K., & Renshaw, I. (2014). Informational constraints on the emergence of passing direction in the team sport of futsal. *European Journal of Sport Science*, *14*(2), 169–176.
5. Gómez, M., Moral, J., & Lago-Peñas, C. (2015). Multivariate analysis of ball possessions effectiveness in elite futsal. *Journal of Sports Sciences*, *33*(20), 2173–2181.

https://doi.org/10.1080/02640414.2015.1075168

6. Hermans, V., & Engler, R. (2011). *Futsal: Technique, Tactics, Training*. Meyer and Meyer Sport UK.
7. Leite, W. S. S. (2012). Analysis of the Offensive Process of the Portuguese Futsal Team: a Comparison Between the Actions of Finalization. *Pamukkale Journal of Sport Sciences*, *3*(3), 78–89.
8. Mitschke, C., & Milani, T. (2014). Soccer: Detailed analysis of played passes in the UEFA Euro 2012. *International Journal of Sports Science and Coaching*, *9*(5), 1019–1031. https://doi.org/10.1260/1747-9541.9.5.1019
9. Moore, R., Bullough, S., Goldsmith, S., & Edmondson, L. (2014). A Systematic Review of Futsal Literature. *American Journal of Sports Science and Medicine*, *2*(3), 108–116. https://doi.org/10.12691/ajssm-2-3-8
10. Pizarro, D., Práxedes, A., Travassos, B., Gonçalves, B., & Moreno, A. (2021). How the number of players and floaters' positioning changes the offensive performance during futsal small-sided and conditioned games. *International Journal of Environmental Research and Public Health*, *18*(14), 1–10. https://doi.org/10.3390/ijerph18147557
11. Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, *61*(3), 261–264. https://doi.org/10.4103/0019-5154.182410
12. Travassos, B., Araújo, D., Davids, K., Esteves, P., & Fernandes, O. (2012). Improving passing actions in team sports by developing interpersonal interactions between players. *International Journal of Sports Science and Coaching*, *7*(4), 677–688. https://doi.org/10.1260/1747-9541.7.4.677
13. Ueda, L. S. C., Menegassi, V. M., Avelar, A., Rechenchosky, L., Silva, F. L. O., & Borges, P. H. (2020). Analysis of the execution of core tactical principles and technical efficiency of primary school futsal players. *Revista Brasileira de Cineantropometria e Desempenho Humano*, *22*, 1–12. https://doi.org/10.1590/1980-0037.2020v22e65221
14. White, G., & Griffiths, D. (2019). *Futsal Coaching Manual*. FIFA.
15. Zeljko, I., Gilic, B., & Futsal, S. Z. A. (2020). Validity, reliability and correlates of futsal-specific pre-planned and non-planned agility testing protocols. *Kinesiologia Slovenica*, *26*(2), 25–34.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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