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Analysis of Technical and Tactical Behavior of the Footballers Started Playing Futsal

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Abstract

In this study, technical and tactical behaviors of football players before and after playing futsal were examined. For this purpose, football match images of the players before and after futsal were analyzed and the effects of futsal on some behavior-movements in football were evaluated. The working group of the study consisted of 11 football players who played in Turkey Futsal U19 National team at least five times in various positions. Their ages ranged between 18 and 19. Five football matches of each 11 players were examined before and after the futsal. These players have 7 years football experiences before futsal. All of their experiences on futsal are 1 year. After the determination of players, the football matches were selected and video analysis of these matches was performed by considering the technical and tactical parameters. The significance of the difference between the technical and tactical behaviors of each player before and after futsal was analyzed using Wilcoxon Signed Ranks Test. As a result of the statistical analyzes, there was a significant difference determined ($p<0.05$) at the passes (P), accurate passes (AP), lost balls (LB), tackles (T), base control (BC), base passes (BP), defense attempts (DA) and assists (A) of players between before futsal (BF) and after futsal (AF). However, the attack attempts (AA), won attack attempts (WAA), goal attempts (GA) and goals (G) of players were not statistically different ($p>0.05$) between BF and AF. It was concluded that most of the players improved their technical and tactical behaviors after futsal.

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Introduction

Futsal, a variant of football, is a world-class sport at the amateur, semi-professional and professional levels (Moore et al. 2014). Futsal is a set of competitive games in which players have to adapt to a changing and dynamic environment with limited time and space for them to make decisions and act to achieve results for their teams. Futsal involves tactical elements critical to efficiency at every point of the game (in terms of perception and decision-making), requiring high levels of mobility and intensive training (UEFA, 2017).

Benton (2013) stated that in Australia the national team participated in the 2012 FIFA Futsal World Cup in Thailand, despite limited administrative support and with a small budget. The study stated that in general futsal developed in Australia and that it is a "National Football Development Plan an implemented in this sense. In order to provide more opportunities for playing and learning futsal, training of futsal coaches is extremely important.

Serrano et al. (2013) examined futsal coaches with different coaching training levels in order to evaluate sports performance factors (technical, tactical, physical and psychological) in their training analysis. Three groups of coaches (beginner, intermediate and elite) were prepared depending on the specific training degree, coaching experience and the level of coaches' training teams. Results showed significant differences between novice and elite trainer groups in small-sided games.

Leite (2012) analyzed the offensive actions of the Portuguese futsal team during the European Futsal Championship in 2010. This study proposes an attack-based comparison of tactical approaches of futsal

coaches. However, in order to compare these results with other elite national teams, as well as to compare the offensive approaches in order to support tactical preparation of coaches, it is necessary to expand the knowledge base and further research on this subject.

Moreira et al. (2013), another study on futsal coaches, observed how futsal coaches influence the teaching, learning and training processes, and the application of some methods to the acquisition of procedural tactical information. The study concluded that training methods that focus on decision-making and tactical skills development further encourage the development of "players who can perform intelligent and creative actions", which is a key requirement for elite futsal players. This result shows that playing sports does not lead to the development of clever and creative actions unless the coaching activities provide the necessary environment for such a development to take place. Aerobic and anaerobic energy systems are needed in football. Football also outweighs the aerobic energy system while the anaerobic energy system is also involved. Anaerobic energy system is more demanded in futsal. Although the playing field is narrower in futsal, the anaerobic energy system is in the forefront, but thanks to the unlimited number of players, players have the right to rest / recovery, which has revealed the importance of aerobic capacity. Good aerobic capacity affects fast recovery. It is predicted that there will be an increase in the anaerobic capacity of the players, especially after the futsal play, and the recovery times associated with the aerobic energy system will improve positively.

Video technology is described by Travassos et al. (2012) to examine how futsal players' interpersonal coordination tendencies restrict passing in futsal. Pass performance is limited by a convergence in the interpersonal distance between players. The findings show three stages of training to improve the pass performance of futsal players.

Polidoro et al. (2013) developed a pilot study of video analysis of futsal training to see if a sample of participants who regularly monitored video recordings of their own games or certain motor performance styles was better at practicing certain techniques. Twenty players with the same technical characteristics were asked to practice twice a week for a year, but only 10 players (sample group) watched the training videos before each practice. Each group was tested at the beginning, during and at the end of the study, through three techniques (control of the ball (base of the foot), plowing the ball (crawling with the sole of the foot)) and throwing (from the toe or tip) of the game. The results showed a significant improvement in the application of the techniques in the sample group using video analysis. Suggestions were made for in-depth study with a wider study example.

Samija et al. (2010) investigated the differences in morphological characteristics of 19-36 years of ages 42 football and 40 futsal players. Significant differences were determined between the physical characteristics of footballers and futsal players with the same characteristics. It was stated that the most important differences were height, weight and arm opening.

Jovanovic et al. (2011) conducted a study using a sample of 82 subjects (40 male futsal players and 42 male football players). However, unlike the study of Samija et al. (2011), no significant difference was found between the parameters of physical characteristics between futsal and football players.

Frencken et al. (2013) conducted a study evaluating the effect of field size manipulations on interactive team behaviors in small football games. Small-sided games were played in several different sizes. These are

the reference game (30 x 20m), length manipulation (24 x 20m), width manipulation (30 x 16m) and a combination thereof (24 x 16m). Using position data (100Hz), three measures quantifying the teams' interaction were calculated: longitudinal inter-team distance, lateral inter-team distance, and surface area difference.

Oppici et al. (2018) investigated how restrictions on transition to a new role affect the ability to pass football and futsal. Futsal (n = 24, 13.6 ± 1.2 years, 7.0 ± 1.6 years' experience) and football (n = 24, 13.6 ± 1.2 years, 6.8 ± 1.2 years' experience) players received two 5v5 + goalkeeper modified games - futsal-like task (futsal small playing field with ball) and soccer-like task (big playing field with football ball). During the two tasks, correct pass and attention orientations of the participants were evaluated. It was determined that the futsal players improved the pass hit and reached more accurate passes. On the other hand, it was determined that the pass hit of football group remained constant in both tasks (ES = 0.10 ± 0.52). In addition, it was stated that the futsal group showed more attention to the relationships arising with the restrictions on football duty, which was suggested to be one of the main mechanisms supporting talent transfer.

In this study, technical and tactical behaviors of football players who started to play futsal were examined. For this purpose, football match images of the players before and after futsal were analyzed and the effects of futsal on some behavior-movements in football were evaluated. As the hypothesis of the study, it is thought that the football players would show improvements on their technical and tactical behaviors after futsal.

Material and Methods

Working Group

In this study, the 11 football players who played in Turkey Futsal U19 National team at least five times were examined. The ages of the players ranged between 18 and 19. These players have 7 years football experiences before futsal. All of their experiences on futsal are 1 year. The common feature of all of these players is that they have played at least five international futsal matches. The positions of players in football were different. Three players were forward right, three players were defensive midfielder, two players were midfielder, one player was forward, one player was forward right/left and one player was attacking midfielder.

Methods of Collecting Data

5 football matches of each 11 players were examined before and after the futsal. After the determination of players, the football matches were selected and video analysis of these matches was performed by considering the technical and tactical parameters as the number of passes, accurate passes, lost balls, tackles, base control, base passes, attack attempts, won attack attempts, defense attempts, assists, goal attempts and goals.

Statistical Analysis

Statistical analysis of the data was performed using SPSS v.24 package program at a 95% confidence interval. The significance of the difference between the technical and tactical behaviors of each player before and after futsal was analyzed using Wilcoxon Signed Ranks Test. The p-values smaller than 0.05 were considered as to be significant. The Wilcoxon Signed Ranks Test is a non-parametric alternative to the repeated measures t-test and is used when participants are evaluated in two different situations. Statistical analyzes of

each parameters were performed by considering the average of 5 matches before and after futsal for each players (O1, O2, O3,…,O11). Descriptive statistical results of the parameters as mean and standard deviation were also used to evaluate the data.

Results

Table 1 shows the descriptive statistics and Wilcoxon Signed Ranks test results of the parameters before and after futsal. There was a statistically significant difference ($p<0.05$) at the passes (P), accurate passes (AP), lost balls (LB), tackles (T), base control (BC), base passes (BP), defense attempts (DA) and assists (A) of players between before futsal (BF) and after futsal (AF). It was determined that the P ($p=0.010$), AP ($p=0.004$), LB ($p=0.003$), T ($p=0.003$), BC ($p=0.003$), BP ($p=0.016$), DA ($p=0.005$) and A ($p=0.020$) of players showed statistically improvements after futsal. However, the attack attempts (AA), won attack attempts (WAA), goal attempts (GA) and goals (G) of players were not statistically different ($p>0.05$) between BF and AF.

Table 1. Descriptive statistics and Wilcoxon Signed Ranks test results of the parameters before and after futsal.

Parameters	Situation	Mean	Standard deviation	Z	p
Passes (P)	BF	29.87	6.28	-2.580[b]	0.010*
	AF	35.47	5.45		
Accurate passes (AP)	BF	23.36	5.89	-2.847[b]	0.004*
	AF	30.73	5.64		
Lost balls (LB)	BF	6.45	1.02	-2.943[b]	0.003*
	AF	4.93	0.93		
Tackles (T)	BF	5.36	1.35	-2.941[b]	0.003*
	AF	6.51	1.52		
Base control (BC)	BF	0.53	0.37	-2.944[b]	0.003*
	AF	1.80	0.50		
Base passes (BP)	BF	0.09	0.16	-2.414[b]	0.016*
	AF	0.33	0.31		
Attack attempts (AA)	BF	8.65	3.18	0.000[b]	1.000
	AF	8.53	3.59		
Won attack attempts (WAA)	BF	3.49	1.48	-0.714[b]	0.475
	AF	3.71	2.10		
Defence attempts (DA)	BF	8.36	3.29	-2.807[b]	0.005*
	AF	11.71	3.02		
Assists (A)	BF	0.27	0.18	-2.326[b]	0.020*
	AF	0.47	0.24		
Goal attempts (GA)	BF	1.92	1.23	-1.146[b]	0.252
	AF	2.09	1.18		
Goals (G)	BF	0.34	0.25	-0.690[b]	0.490
	AF	0.40	0.31		

BF: before futsal, AF: after futsal, b: based on negative ranks, *: $p<0.05$, significant.

Table 2 shows the ranks of the parameters before and after futsal. In P parameter, 1 player showed lower passes AF than BF while 10 players had higher passes AF than BF. Most of the players improved their passes after futsal. Similar results were obtained from AP which indicated that the players improved their accurate passes after futsal. All players (11) reduced their lost balls and increased their tackles after futsal. BC of the all the players also improved after futsal while 7 players improved their BP. AA of 5 players was lower BF than that of AF while AA of 4 players improved AF. 1 player was in tie BF and AF for AA. WAA of 7

players increased and WAA of 4 players decreased AF. DA of 10 players was improved AF. 8 players showed an increase in their A. GA and G of 6 players were also improved AF. Generally, most of the players improved their technical and tactical behaviors AF.

Table 2. Ranks of the parameters before and after futsal.

Ranks	Parameter	N	MR	SR	Parameter	N	MR	SR
Negative Ranks		1^a	4.00	4.00		1^a	4.00	4.00
Positive Ranks	P	10^b	6.20	62.00	AP	10^b	6.20	62.00
Ties	(AF-BF)	0^c			(AF-BF)	0^c		
Total		11				11		
Negative Ranks		11^a	6.00	66.00		0^a	0.00	0.00
Positive Ranks	LB	0^b	0.00	0.00	T	11^b	6.00	66.00
Ties	(AF-BF)	0^c			(AF-BF)	0^c		
Total		11				11		
Negative Ranks		0^a	0.00	0.00		0^a	0.00	0.00
Positive Ranks	BC	11^b	6.00	66.00	BP	7^b	4.00	28.00
Ties	(AF-BF)	0^c			(AF-BF)	4^c		
Total		11				11		
Negative Ranks		5^a	4.50	22.50		4^a	6.25	25.00
Positive Ranks	AA	4^b	5.63	22.50	WAA	7^b	5.86	41.00
Ties	(AF-BF)	2^c			(AF-BF)	0^c		
Total		11				11		
Negative Ranks		0^a	0.00	0.00		1^a	3.50	3.50
Positive Ranks	DA	10^b	5.50	55.00	A	8^b	5.19	41.50
Ties	(AF-BF)	1^c			(AF-BF)	2^c		
Total		11				11		
Negative Ranks		3^a	4.33	13.00		4^a	5.25	21.00
Positive Ranks	GA	6^b	5.33	32.00	G	6^b	5.67	34.00
Ties	(AF-BF)	2^c			(AF-BF)	1^c		
Total		11				11		

AF-BF: after futsal - before futsal, P: passes, AP: Accurate passes, LB: lost balls, T: tackles, BC: base control, BP: base passes, AA: attack attempts, WAA: won attack attempts, DA: defense attempts, A: assists, GA: goal attempts, G: goals, N: number of players, MR: mean rank, SR: sum of ranks, a: AF < BF, b: AF > BF, c: AF = BF

Discussion

A limited number of studies have examined the relationship between futsal and footballers in relation to physical and situational characteristics and parameters. Davids et al. (2013) stated that the small-sided games improved the acquisition of movement and decision-making skills of players. In addition, Beato et al (2014) concluded that the high-volume training with small-sided games affects the technical demands in football. Travassos et al. (2018) suggested that the future football players could have the opportunity to explore futsal tactical behaviors that enrich their developing perceptual-motor landscape by taking up futsal at an early stage. Correa et al. (2012) characterized the futsal as an adaptive process by considering intra- and inter-patterns.

In this study, technical and tactical behaviors of football players before and after playing futsal were examined to evaluate the effects of futsal on some behavior-movements in football. The conclusions are:

Passes and Accurate Passes: Players who met the ball during the game are much higher in futsal than football since the futsal is played in a smaller area than football. Since the pass errors in

smaller area are affected the scores directly, players have higher accurate passes in futsal. Players who started playing futsal were more active to meet with ball and used more accurate passes to avoid losing the ball they had. Oppici et al. (2018) stated that their results encourage football to impose futsal task constraints to quickly monitor players' ability to functionally adapt the perception-action match.

Lost Balls and Tackles: It was determined that the futsal has positive effect on reducing the lost balls and increasing the tackles. After the players started to play futsal, they tried simple passes in order not to lose the ball and thus reduced the lost balls. It is possible to say that this feature is also reflected in football as the players' ability to win the ball in the small area has improved more.

Base Control and Base Passes: Futsal has a positive effect on players' base control and base pass. Base control and base pass which are not used much in football but forms the basis of futsal are frequently used to control the ball in small area games to block the opponent in the action area. These behaviors were reflected to football as players frequently used the base control and base pass in futsal trainings and matches.

Attack Attempts, Won Attack Attempts and Defense Attempts: Futsal includes continuous run-off running, ball kicks and accelerating runs, which are highly severe (Stolen et al., 2005, Spriet, 2002). It was determined that the defense attempt before futsal was lower than the defense attempt after futsal. This result showed that the futsal has a positive effect on the defense attempt of football players. Futsal players can play regardless of defense and attack positions. Since the attack-defense passages in futsal are very fast, each player has to have very good defensive and very good offensive features. A player who plays in football and has little help in defending gives more support to his defense with his both offensive and defensive features.

In particular, playing in a narrow space makes the futsal players obliged to move more, run more and make use of the free spaces. The main characteristics of futsal players are to narrow the defense area, to create a large area on the offensive, to run a lot, to exhibit high-level intelligence, to quickly change the playing field during the match (Ocak & Buğdaycı, 2012).

Assists, Goal Attempts and Goals: Futsal has a positive effect on the number of assists. It was determined that the number of goal attempts and goals before futsal was lower than that of after futsal. Since the futsal goal post dimensions are 2 m high and 3 m wide, it is more difficult to score than a football goal. Players prefer team collaboration rather than individual characteristics to score goals while playing futsal. It has been observed that the number of assists who use this aid more frequently in futsal training and matches has increased in football.

Futsal is a global sport in its own right and is substantially different from football in terms of the rules and tactical actions of the game. However, given the fact that futsal is used as a football development tool to improve the technical and tactical behavior of young football players, there is a

lack of research examining any links between them. The passes, accurate passes, tackles, base control, base passes, defense attempts and assists of players increased and the lost balls of players decreased after futsal. Most of the players improved their technical and tactical behaviors. Therefore, it is possible to conclude that the futsal can be used as a football development tool to improve the technical and tactical behaviors of young football players.

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Makale Alıntısı

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