CAN ATHLETIC PERFORMANCE TESTS IN FEMALE SOCCER PLAYERS BE A CRITERIA IN BEING ELECTED IN NATIONAL TEAM?

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ABSTRACT

The aim of this study is to reveal Turkey Soccer Federation (TFF) Women League 1 club team athletes' physical performance differences between athletes who have played in A team and stayed in national level. A total of 18 athletes who competed in the women's soccer league, whose ages between 18-30, (National team sportsman n = 8; n = 10) participated. The Yo-Yo Intermittent Recovery Test Level 1 (YOY IRT1) endurance tests, the players' age, height, body weight, body mass index (BMI), standing long jump with double and one foot and 5-10-30m speed test were conducted. The measurements were carried out at the 17th week of the competition. The statistical analysis of the study was made by using the SPSS 21.0 packaged program, and the Mann Whitney U test was applied to the comparison of the soccer players elected and not elected. The statistical significance level was accepted as 0,05. When soccer players' performance tests were compared according to being elected or not elected to the national team, no statistically significant difference was found (p>0,05). As a result, Turkey's athletic performance status in women's soccer at the elite level, can be said to be similar in elected and not elected athletes to the national team.

Keywords: Women, Soccer, Speed, Explosive Strength, Endurance, Athletic Performance

INTRODUCTION

The athletic performance characteristics of soccer players are followed by interest by scientists and coaches, and the importance of this phenomenon is increasing day by day. In order to be successful in soccer, the physical performance of the athlete must be at a high level, which increases the number of scientific studies.

Soccer is a sports discipline that requires high performance in which aerobic and anaerobic systems are used repeatedly, and factors such as speed, strength, agility, flexibility, durability, and coordination are used together in performance (Diker, 2013).

In a soccer game, 10-12 km distance is covered. 25% are walking, 37% low intensity running, 20% submaximal movements, 11% sprint and 7% backward

running form this situation. These data indicate that soccer has an aerobic base structure and shows its anaerobic structure (Bangsbo et al., 2006). It seems that women's running distances in the competition are less when compared to that of men's. When women's football teams in the elite level are compared to local leagues, there are a lot more compelling activities in the international field, and they are exposed to exhaustion (Anderson et al., 2010). This situation emphasizes the importance of preparing the elite female players for the competitive environment.

This work, which is done with the soccer branch, may make a significant contribution to the selection of athletes and training approaches in women's soccer. The easiness of the conducted tests practicality makes it very easy for many coaches to reach performance information about athletes. The study matters in terms of observing the effect of the training which is an important part of in our day's soccer, at what rate it is successful about what is aimed in the result of the to be held tests, defining what the point is reached.

Literature data for women's soccer is rather limited compared to the popularity of women's football (Castagna et al. (2013). There are studies reporting that competition in women's football depends on performance (Mujika et al., 2009). However; while there is a limited information about female soccer players on an international level, studies about national level players are available.

This study can be an important resource for conditioners, coaches, sports physicians, dieticians, and researchers to determine the strengths and weaknesses of the athletes in assessing their current situation and how close they are to the desired performance level.

Therefore, research can form a database for comparison in terms of physical features between elite female soccer players in Turkey and players from other countries.

The aim of this study is to help couches who work in female soccer teams and/or A National Female Soccer teams with organizing their training programs the light of this information; whether endurance, explosive strength, or speed feature development is an important parameter in being elected to National teams in the name of increasing athletes' performance. The performance difference between national teams' players and players at the national level is defined as the study hypothesis.

METHOD

A total of 18 athletes who competed in the women's soccer league, whose ages between 18-30, (National team sportsman n = 8; n = 10) participated in the study. The Yo-Yo Intermittent Recovery Test Level 1 (YOY IRT1) endurance tests, the players' age, height, body weight, body mass index (BMI), standing long jump with double and one foot and 5-10-30m speed tests were conducted. The measurements were carried out at the 17th week of the competition.

In our research, we used the New Test-Powertimer 300 test system (Enoksen et al., 2009), plastic funnel, plastic sign plate, loudspeaker, height gauge, Tanita BC418 segmental body composition device (Tanita, Japan), steel meter.

Measurements

Soccer players' age, height, and body weight were determined by classical methods.

Age Assessment

Based on the birth dates declared by the participants and determined with the year account.

Height

Heights of footballers were measured by measuring the distance between the vertex of the head and the foot. The results were recorded in centimeters.

Body weight

The body weight measurements were carried out with Tanita BC418 body composition device, and recorded in kilogram while the participants were in standard sports outfit (shorts, t-shirt), and without shoes.

Before the field tests, the soccer players performed 20 minutes of coordinated warm-up; then Standing Long Jump, Speed, and Endurance tests. Five-minutes rest between tests were given.

Measuring the Standing long jump test

A suitable non-slip floor and a meter is required for measurement. The measurement was made by measuring the distance between the tiptoe of the football player which he put his foot to jumping-off point and the feet feel where he fell after jumping.

During the test, the arms of the football players are in the back, their knees twisted and their body bent slightly forward. This position is advantageous in terms of performance efficiency. The best score of the three tests is recorded (Reiman & Manske, 2009) (Kamar, 2003). The measurement was carried out in 3 ways as a double foot, right and left foot.

Sprint Test Measurement

Athlete; the test begins with the start command of the test manager from the start line which is 50 cm back of the start photocell. The measurements were carried with photocells which are positioned in 5-10 and 30th meters of the 30-meters running distance. The measurements are taken twice with 5-minutes rest interval, and the better score is recorded (Gunay & Tamer, 2006) (Kamar, 2003) (Reiman & Manske, 2009) (Muratli, Kalyoncu, & Sahin, 2011).

Endurance Measurement

It is measured with The Yo-Yo 1 Intermittent Recovery Test Level 1 (YOY IRT1). It is an endurance test which consists repetitive runs in which run pace increases according to signal beeps coming from the signal device, start with 10km/h pace within 2x20 meters start, return and finish lines. After every 40 m of running, there is an active recovery area of 2x5m for 10 seconds. Starting at 10 km / h, the test is terminated if the participant misses three signal beep or until the participant's exhaustion point (Krustrup et al., 2003).

Statistical Analysis

The statistical analysis of the study was done by using SPSS 21.0 packaged program, Mann Whitney U test was applied in comparisons belonging to soccer players who are elected to National team and those who are not. The statistical meaningfulness level was accepted as 0,05.

FINDINGS

Table 1. *The Soccer Players' Measurements' Mean and Standard Deviations*

Parameters	N	Mean	Standard Deviation
Age	18	21,78	3,78
Height	18	164,28	2,99
Body Weight	18	54,39	3,15
5m Speed(sec.)	18	1,221	0,142
10m Speed (sec.)	18	1,923	0,131
30m Speed (sec.)	18	5,209	0,337
Yo-Yo test (Meter)	18	1471,111	231,438
Long Jump(cm)	18	205,389	18,962
Right Foot Long Jump (cm)	18	166,778	14,751
Left Foot Long Jump (cm)	18	172,111	8,697

Mean age and standard deviations of the football players participating in the study were determined as age: 21,78±3,78 height: 164,28±2,99 weight: 54,39±3,19.

Table 2. *Performance tests' mean and standard deviations of the Soccer players' who are elected and those who are not elected to national team*

Parameters	Being Elected to National Team	N	Mean	Standard Deviation
5m Speed (sec.)	Yes	8	1,198	0,124
	No	10	1,227	0,150
10m Speed (sec.)	Yes	8	1,900	0,151
	No	10	1,930	0,130
30m Speed (sec.)	Yes	8	5,268	0,361
	No	10	5,193	0,342
Yo-Yo test (Meter)	Yes	8	1.430,000	212,603
	No	10	1.482,857	242,786
Long Jump(cm)	Yes	8	196,250	10,689
	No	10	208,000	20,267
Left Foot Long Jump (cm)	Yes	8	169,500	8,888
	No	10	166,000	16,229
Right Foot Long Jump (cm)	Yes	8	174,750	8,958
	No	10	171,357	8,811

While, table 2 shows that 5m. the average speed is 1,198 secs, average of 10m is 1,9 sec., and 30m. averages 5.26 sec., national athletes' 5m. average speed is 1,227 sec., 10 m is 1,93 sec. and 30m. averages are 5,193 secs. While the average endurance of national team players is found as 1430m., long jump is 196.25cm,

right foot long jump is 169.5cm. and the left foot is 174,750 cm; national players' endurance averages are as1482m., long jump 208 cm., right foot long jump 166, cm. and the left foot was 171,357 cm.

Table 3. *Performance tests' Mann Whitney U Comparisons of the Soccer players' who are elected and those who are not elected to national team*

Parameters	Being Elected to National Team	N	Mean Rank	Sum of Ranks	U	z	p
5m Speed(sec.)	Yes	8	8,88	35,50	25,500	-,267	,789
	No	10	9,68	135,50			
10m Speed (sec.)	Yes	8	8,25	33,00	23,000	-,531	,595
	No	10	9,86	138,00			
30m Speed(sec.)	Yes	8	10,00	40,00	26,000	-,212	,832
	No	10	9,36	131,00			
Yo-Yo test (Meter)	Yes	8	9,25	37,00	27,000	-,107	,914
	No	10	9,57	134,00			
Long Jump (cm)	Yes	8	7,13	28,50	18,500	-1,012	,312
	No	10	10,18	142,50			
Right Foot Long Jump (cm)	Yes	8	10,13	40,50	25,500	-,267	,790
	No	10	9,32	130,50			
Right Foot Long Jump (cm)	Yes	8	10,50	42,00	24,000	-,427	,669
	No	10	9,21	129,00			

It seems that there is no difference when the Soccer players' performance tests comparisons are analyzed, who are elected and those who are not elected to national team (P> 0.05)

DISCUSSION

In this part of our research, the effects of athletic performance criteria were evaluated when elite female soccer players were selected to national teams.

Bangsbo and Mohr (2012) defined female soccer players' YOYO IRT 1 norm values as; 2600m and above: excellent, between 2200-2560m very good, between 1800-2160m good, between 1520-1760m normal, between 1200-1480m bad, 1200m and under very bad. Averages of the female soccer player in our work were found as1432m for the athletes elected to the national team and 1482m for the not elected. Our endurance data about the research has remained below the average according to the durability norms of Bangsbo et al.

Atan et al. (2012) defined female soccer players', who are university students, 30m. speed values as 5,85 secs in their study.

Goral et al. (2015) defined Turkish female soccer players' 30m. speed values as 5,65 secs in their study.

Manson et al. (2014) defined female soccer players' 30m. speed values as 5.04±0.34 secs., Ozer and Kilic (2012) found 30m sprint speed values as 5.00±0.35 secs in individual athletes, 5.02±0.30 secs in team athletes; Imamoglu et al. (2004) defined female athletes' sprint speed values as 5.15±0.13 in their findings.

The Bansbo and Mohr (2012) 6x30m fatigue index test for the elite female soccer team was found to have the best sprint average of 4,41 for the 30m average

of the team averages. In our work, the 30m average of the elite female soccer players belongs to national team athletes for 5.26 sec. for elite athletes who do not play in the national team for 5,19 secs. The sprint durations of our research data show that it is better than the National Level Turkish athletes, below the average according to the international literature.

Inci (2016) studies of lower extremity parameters in relation to anaerobic power and speed in women's athletes indicated that the long jump values of soccer players are 173.75 cm in average. n the study, it was stated that plyometric training improved the horizontal and vertical jumping positively.

In the norming study in which Hoffman (2006) gave elite level female athletes' long jump parameter according to percentiles, the athletes' long jump values participating in our study get in %20 percentile.

While Koch et al. (2003) stated elite female athletes' long jump averages as 2,43mt; sedentary females had a 1,61mt average.

Barber et al. (1990) In the elite level athlete women for the single-leg forward jump test, the dominant leg averages were 121.5 cm. the other leg is 122 cm, the middle-level athlete had a dominant leg performance of 117.8 cm, the non-dominant leg average was 113.7 cm. These values indicated that our study's data was above the literature data.

In their work, while Smith et al. (1992) pointed out that national team players had better performance characteristics than national players, Castagna et al. (2013) stated that there was no performance distinction between soccer players in the elite levels; in their studies in which they analyzed Italian female and male national team players' jumping performances, Castagna et. al. (2013) stated that there was no performance distinction in elite level soccer players. This situation shows parallelism with our findings.

CONCLUSION AND RECOMMENDATIONS

As a result, it is found that athletic performance parameters, which are thought to be important to sportive performance, durability, explosive strength and speed has no effect on athletes' being elected to the national team. In this respect, it can be said that the variables such as athletes' contribution to the score, the effects of defensive and offensive principals in the competition, technical and tactical skills are influential in being elected to the national team.

We think that Sports scientists' doing more research on women's sport will increase the level of competition. It is suggested that the groundwork of the work should also be done on female soccer players.

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