

A Comparative Study of Selected Physical Fitness Variables between Konso New York and Gardula Male Football Clubs

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Abstract

The present study was an attempt to evaluate the degree of physical fitness and compare the differences of physical fitness components between Konso New York and Gardula male football clubs. To carry out this research two national league football clubs from the southern zone of Ethiopia were selected from Konso and Dirasha Woreda and 50 male football players (25 from Gardula football club and 25 from Konso New York football club) were selected as the subject. The results were presented as mean and standard deviation which shows the average results of each variable in both clubs. Independent t-test was used to compare the results between two clubs, to find out the significant difference in selected physical fitness variables. The results of this study showed that there are significant differences between Gardula and Konso New York Players in agility, endurance, explosive power and speed and no significant difference in flexibility. On the basis of the findings we can conclude that Gardula city football players were better than the Konso New York football players in agility, endurance, explosive power and speed.

KEYWORDS: Physical fitness, football, strength, speed, endurance, flexibility, agility

1. Introduction

Football is one of the most widely played and complex sports in the world, where players need technical, tactical and physical skills to get success. However, studies to improve football performance have often focused on technique and tactics at the expense of physical resources such as endurance, strength, and speed (Jan Helgerud, Lars Christian Engen, Ulrik Wisloff, and Jan Hoff 2001).

Football is a unique sport, with matches involving intermittent high intensity sprints between periods of walking and jogging and repeated physical contact. Endurance, speed, strength, power and agility are essential physical characteristics (Cicirko, Leszek. et. al., 2007). In football training special and multifaceted motor abilities have direct impact on the special fitness of the football players. Depending on the needs, they can be helpful as a selection criterion and useful for the evaluation of the progress in the player abilities (Sharma, 2015). Physical fitness is a state of mental and physical harmony which enables someone to carry on his occupation to the best of his ability with greatest happiness." Physical fitness is a set of attributes that are either health or skill related; the degree to which people have these attributes can be measured with specific tests (Bannister, 2006). The complex nature of physical fitness can be best understood in terms of its components, such as, cardiovascular of

physical fitness (Sallies, et al., 2002). Fitness is a condition in which an individual has sufficient energy to avoid fatigue and enjoy life. It is necessary for elderly people to maintain and improve their physical fitness in order to satisfy healthy, high quality of daily life (Tanaka et al., 2004).

Physical fitness provides many advantages in the game of football. These make the demands of the match seem easier to complete (jumping, holding-off opponents and kicking the ball with power), improved self-image and as a result may improve confidence, rectify the problem of underweight football players, increase bone density, which in turn helps to prevent osteoporosis, the strength of the tendons and ligaments are increased, thus reducing the risk of strains and tears, improved posture and body alignment, and as a result improves movement (Paradisis, 2004).

Every person has different level of physical fitness which may change with time, the situation, place of work and there is also an interaction between the daily activities and the fitness of an individual. From the physiological point of view physical fitness may say to be the ability of the body to adopt and recover from strenuous exercise (Manmeet, et al., 2010). Over the past four decades, there has been emphasis on an increase in the prevalence overweight and physical fitness deterioration in adult across all genders, ages and ethnic groups (Ichinohe, et al. 2004).

Physical fitness is essential for a football player but no data has been presented so far for national level football players of Ethiopia. Thus, the researcher hypothesized that Gardula and Konso New York male football players may or may not have a significance difference in selected physical fitness variables. Therefore, the purpose of this study was to assess and compare some selected physical fitness variables between Konso New York and Gardula male football clubs.

2. Methodology

2.1 Selection of Subjects

For the purpose of this study fifty (25 from Gardula football club and 25 from Konso New York football club) male football players were selected as the subject using stratified random sampling technique according to the designed parameters.

2.2. Selection of Variables

For this study physical fitness variables were taken as endurance (Harvard step test), speed (30 meter sprints), agility (Illinois agility test), flexibility (sit and reach) and explosive (vertical jump test) to assess their physical fitness level.

2.3 Procedures of Data Collection

Harvard Step Test: The subjects were asked to step up and down off a gym bench to 5 minutes at a rate 30 steps/minute. The athlete steps up and down on to a standard gym bench once every two seconds for five minutes (150steps). Then, the athlete's heart rate was measured one, two and three minutes after finishing the test.

30m sprint: This test involves sprinting for 30 meters as fast as possible from a stationary standing start position, with no swinging movements. The subjects were asked on the command 'go' you have to start and finish as early as possible. And time was recorded.

Illinois Agility Test: After making the set up one demonstration was given to the players. After that the subject were asked to perform the test. On the 'Go' command the stopwatch was started, and the athlete gets up as quickly as possible and runs

around the course in the direction showed, without knocking the cones over, to the finish line, at which the timing was stopped.

Sit and reach test: In this test subjects were asked to sit with the soles of their feet against the box, with their hips flexed to about 90° to assume an upright sitting position. Subjects were instructed to flex their hip joints and vertebral column (with possible contributions from shoulder joint flexion and scapular elevation) to reach forward as far as possible. A centimeter scale was printed on the top surface of the box.

Vertical jump: The vertical jump test involved a 2-footed vertical jump from a stationary position with the intention of attaining maximum height. Subjects were instructed to maintain their hands on the hips and keep the legs straight once they had left the ground. Before each jump, subjects were verbally encouraged to jump as high shuffling of feet or steps was not allowed.

2.4 Method of Data Analysis

Descriptive statistics was produced for each of the parameters. The results were presented as mean and standard deviation which shows the average results of each variable in both clubs. Independent t test was used to compare the results between two clubs. The significance level was set at $P < 0.05$ for each of the statistical tests. The SPSS 20 software was used for the statistical analysis.

3. Results

Table 1. Comparison between Konso New York and Gardula City Football Clubs Harvard Step Test Performance

Team	Mean	SD	Mean diff.	t	Sig.
Konso New York	56.66	8.85	7.45	2.50*	0.016
Gardula	64.11	12.00			

*Significant at 0.05 level

From the above cited table 1, it is documented that there is significant difference found between Konso New York and Gardula team in the variable of Harvard Step Test.

Table 2. Comparison between Konso New York and Gardula City Football Clubs 30m Speed Test Performance

Team	Mean	SD	Mean diff.	t	Sig.
Konso New York	4.45	0.40	0.27	2.57*	0.013
Gardula	4.17	0.33			

*Significant at 0.05 level

It is cleared from the above mentioned table 2, that there is asignificant difference between Konso New York and Gardula team in the variable of 30m Speed Test.

Table 3. Comparison between Konso New York and Gardula City Football Clubs Illinois Agility Test Performance

Team	Mean	SD	Mean diff.	t	Sig.
Konso New York	16.32	1.27	1.19	4.40*	0.000
Gardula	15.12	0.47			

*Significant at 0.05 level

It is evident from the table 3, that the mean score of Konso New York players is 16.32 ± 1.27 and the mean score of Gardula palyers is 15.12 ± 0.47 . The t value 4.40 showed that there is a significant difference between Konso New York and Gardula team in the variable of Illinois Agility Test.

Table 4. Comparison between Konso New York and Gardula City Football Clubs Sit and Reach Test Performance

Team	Mean	SD	Mean diff.	t	Sig.
Konso New York	12.90	6.89	1.12	0.57	0.569
Gardula	14.03	7.02			

*Significant at 0.05 level

From the above cited table 4, it is documented that there is insignificant difference found between Konso New York and Gardula team in the variable of Sit and Reach Test.

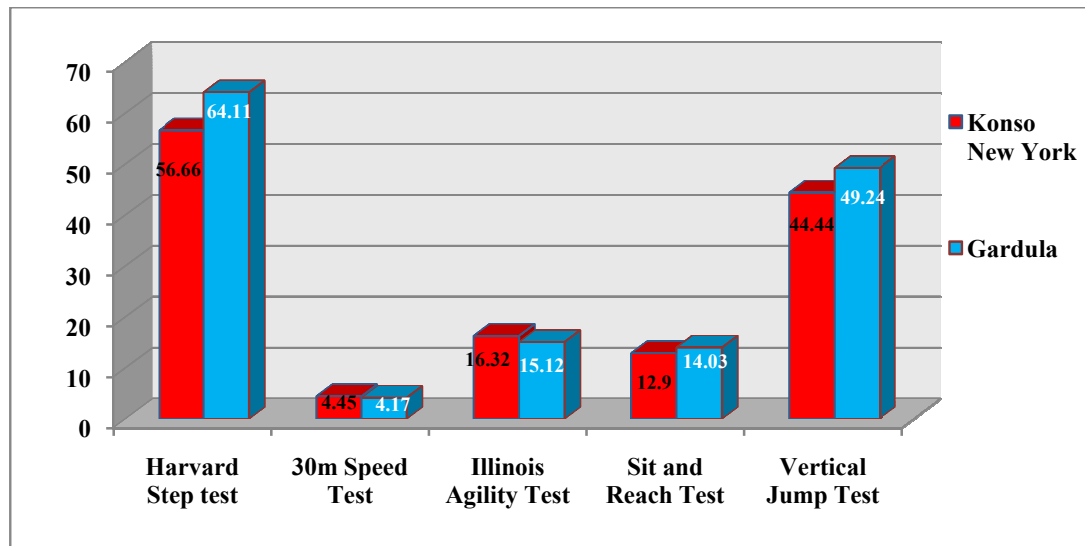
Table 5. Comparison between Konso New York and Gardula City Football Clubs Vertical Jump Test Performance

Team	Mean	SD	Mean diff.	t	Sig.
Konso New York	44.44	5.41	4.80	2.72*	0.009
Gardula	49.24	6.98			

*Significant at 0.05 level

From the above cited table 5, it is evident that the mean score of Konso New York players is 44.44 ± 5.41 and the mean score of Gardula palyers is 49.24 ± 6.98 . The t value 2.72 showed that there is significant difference found between Konso New York and Gardula team in the variable of Vertical Jump Test.

Figure a: Graphical representation of Physical fitness variables between Konso New York and Gardula football clubs



4. Discussion on Findings

The findings of the study in relation to Harvard step test showed that the football players of Gardula club had better endurance in comparison to the football players of Konso New York Clubs. This is due to the fact that endurance plays an important role in the performance of football players. The result supports by Malik, et al., (2015), they found that for better performance in football a high level of endurance is required. Therefore, it is likely that other physical qualities, such as endurance and muscular strength, may influence the fatigue response seen following intensified competition (Johnston et al., 2015). The current performance of Konso New York football club in the national league of southern region is placed in 10th position out of 11 team and Gardula football club placed in 4th position out of eleven teams. Gardula are better than their Konso New York on muscular endurance.

In 30 meter speed Tests and Vertical jump test Gardula football players scored better than Konso New York football clubs. In general, the results show that Gardula was heavier and taller than Konso players and performed better in vertical jumps and sprint tests. The results support by, Malina, et al., (2005) and Malik et al., (2015) found that body mass index was the most significant predictor in 30m sprint performance and body height was the significant predictor of vertical jump performance. Moreover, players in the present study with higher BMI values performed better in vertical jumps and 30m sprints. The research indicates that strength and conditioning programs have shown to improve strength, power, speed, and vertical jump measures. The increases in these variables have been proven to improve athletic performances (Stone et al., 2000). According to Smyth, 1995, all this points to the need for comprehensive planning, programming and implementation of training process, to a final product, a football player who has a highly developed motor ability such as speed. Many strength and conditioning coaches believe that strength and power measures and sprinting performance are strongly linked (Blazevich, 1997a, 1997b; Johnson, 1996; Luchtenbern, 1990; Sheppard, 2003).

The findings of the study revealed that the football players of Gardula clubs had better agility than the football players of Konso New York club. The result is in line with the findings by Malik, et al., (2015), they found that better performance in agility is the reason of better performance of football players of Gardula club. Other studies also support the result that speed is also associated with the agility that incorporates the components of velocity and it is considered as changing movement direction but with maintaining the achieved speed (Smyth, 1995). Many strength and conditioning coaches believe that strength and power measures and sprinting performance are strongly linked (Blazevich, 1997a, 1997b; Johnson, 1996; Luchtenbern, 1990; Sheppard, 2003). The findings of the study in relation to sit and reach test, Gardula football players scored better than Konso New York football clubs. This may be attributed to that fact that flexibility plays an important role in the performance of football players. Flexibility is the base of all the techniques utilized in games and needed in all the physical fitness components (Malik, et. al., 2015).

5. Conclusions

On the basis of the findings we can conclude that Gardula city football players are better than the Konso New York football players in agility, endurance, explosive power and speed.

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