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Physical fitness differences between selected and non-selected junior girls for national football team of Chandigarh

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Abstract

The objective of this study was to compare the selected physical fitness components between selected and non-selected junior football girls for national football team of Chandigarh. A sample of thirty six (N=36) junior national football girls (selected N₁=18: mean \pm SD: age 14.89 \pm 1.07 years, height 161.72 \pm 10.65 cm, weight 49.88 \pm 7.26 kg, BMI 19.26 \pm 3.54) and non-selected (N₂=18: mean \pm SD: age 14.61 \pm 0.85 years, height 157.89 \pm 4.99 cm, weight 46.83 \pm 6.36 kg, BMI 18.77 \pm 2.23) were selected from the junior national football camp held at Post Graduate Govt. College, Sector-46, Chandigarh, India. Height of subjects was measured by anthropometric rod to the nearest 0.5 cm. The weight was measured with weighing machine to the nearest 0.5 kg. Endurance of the subjects were measured through 800 meter run and walk test, speed of the subjects were measured through 50 meter dash and explosive power of the subjects were measured through standing broad jump. The independent samples t-test was used for analyses the data. Results revealed that there were no statically significant differences found between selected and non-selected football girls' players on selected physical fitness components.

Keywords: Physical fitness, junior national, selected players and non-selected players

Introduction

In Football players require technical, tactical and physical skills to succeed (Joksimovic *et al.*, 2009) [5]. Football is an endurance sports that incorporates periods of intense exercise interspersed with lower levels of activity over a 90-minute period (Reilly, 1996) [8]. Activities in football such as breaking a tackle, jumping to catch a kick-out, dribble the ball and accelerating from one position to another require high level of fitness parameters. In a football match, 80-90% of the performance is reported to be used up with low and moderate intensity running and walking while the left over part is used up with high intensity activities (Bangsbo, 1994) [2]. Due to the long duration of a football match cardio-respiratory endurance capacity is extremely important for football players (Stolen *et al.*, 2005) [10]. Explosive power is very important for jumping, sprinting and turning in football game (Stolen *et al.*, 2005) [10]. To achieve the optimal performance in football, players require high level of fitness that allows them to cope with the physical demands of the game while performing technique and skills of the game. Explosive power and speed are two interconnected physiological qualities at high-intensity that add to football performance (Mujika *et al.*, 2009; Stolen *et al.*, 2005) [7, 10]. Cardio-respiratory endurance, speed and explosive power of the legs are crucial in football. Physical fitness is defined as the capacity to perform daily activity with energy and sharpness, without excessive fatigue while being able to appreciate recreation time interests and to meet the unexpected emergencies (Singh and Singh 2017) [9]. In team games for peak sports performance, physical fitness is the most important. Physical fitness testing can also play an important role in talent identification, preparing training programmes, monitoring physical development and team selection. There is also a better need for detailed studies that can assist improving the girl's football performance potential and performance levels (Martinez-Luganas *et al.*, 2014) [6]. Some previous studies clarified physical fitness and talent identification characteristics of women football players in abroad (Gabbett and Mulvey, 2008; Hoare and Warr, 2000) [3, 4]. However, similar studies are extremely limited in India. Therefore, the aim of the study to compare selected components of physical fitness between selected and non-

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selected football girls of Chandigarh for the junior girl's national football championship.

Materials and Methods

Subjects: A sample of thirty-six (N=36) junior Football girls (selected N₁=18: mean \pm SD: age 14.89 \pm 1.07 years, height 161.72 \pm 10.65 cm, weight 49.88 \pm 7.26 kg, BMI 19.26 \pm 3.54) and non-selected (N₂=18: mean \pm SD: age 14.61 \pm 0.85 years, height 157.89 \pm 4.99 cm, weight 46.83 \pm 6.36 kg, BMI 18.77 \pm 2.23) players were selected as subjects from the national camp which was organised by Chandigarh Football Association at Post Graduate Govt. College, Sector-46, Chandigarh.

Methodology

The study was conducted on selected physical fitness variables i.e. explosive power, speed and endurance between selected and non-selected football girls for junior national

championship. The height of subjects was measured by using the standard anthropometric rod to the nearest 0.5 cm. Weight was measured with weighing machine to the nearest 0.5 kg. Body Mass Index (BMI) of the subjects was calculated by formula (Kg/m²) = (Body mass in kg/Stature in m²). The explosive power of legs was measured by standing broad jump test in meters and speed was measured by 50 meters (flying start) dash in seconds whereas endurance was measured by 800 meter run and walk test in minutes.

Statistical analyses

Values are presented as mean values and SD. Independent samples t test were used to test if population means estimated by two independent samples differed significantly. Data was analyzed using SPSS.

Results

Table 1: Demographic Characteristics of junior girl football players

Students Group	Age (yrs)		Height (cm)		Weight (kg)		Body Mass Index	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Selected Girls	14.89	1.07	161.72	10.65	49.88	7.26	19.26	3.54
Non-Selected Girls	14.61	0.85	157.89	4.99	46.83	6.36	18.77	2.23

Table-1: Shows the demographic characteristics of selected and non-selected junior national football girls. The selected football girl's players had mean \pm SD: age 14.89 \pm 1.07 years, height 161.72 \pm 10.65 cm, weight 49.88 \pm 7.26 kg and BMI 19.26 \pm 3.54 values. The non-selected football girl's players

had mean \pm SD: age 14.61 \pm 0.85 years, height 157.89 \pm 4.99 cm, weight 46.83 \pm 6.36 kg, BMI 18.77 \pm 2.23 values. Results indicated that selected junior national football girls were taller and heavier as compare to non-selected football girls.

Table 2: Comparison of selected physical fitness components between selected and non-selected junior girl's football players

Variable	Selected Girls (N ₁ =18)		Non-Selected Girls (N ₂ =18)		t-value
	Mean	SD	Mean	SD	
Cardio-respiratory Endurance	3.29	0.23	3.37	0.34	0.824
Speed	6.55	0.58	6.60	0.46	0.287
Explosive Power	1.69	0.20	1.65	0.18	0.678

*Significant at.05 level

Table-2: Depicts the comparison of selected physical fitness components between selected and non-selected junior girl's football players. Results showed that there were no significant differences were found between selected and non-selected junior girl's football players with regards to cardio-respiratory endurance, speed and explosive power.

Discussion

Physical fitness is defined as the individual's capacity for optional work and motor and sport performance (Astrand and Rodahl, 1986) [1]. The aim of this study was to compare the selected physical fitness components between selected and non-selected junior girl's football players. The demographic characteristics between selected and non-selected junior girl's football players showed that selected football players had higher body weight and height values as compare to non selected football players. Results showed (table-2) that there were no significant differences were found between selected and non-selected junior girl's football players with regards to cardio-respiratory endurance, speed and explosive power. It seems that selected physical fitness components such as cardio-respiratory endurance, speed and explosive power did not seem to be critical in the selection process.

Conclusion

There were no differences in physical fitness between selected

and non-selected junior girl's football players. On average, selected football girls players were taller and heavier as compare to non-selected football girls. Further studies are needed on the above considered components along with other important variables to measure relationships among football players and with performances in girl's football.

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