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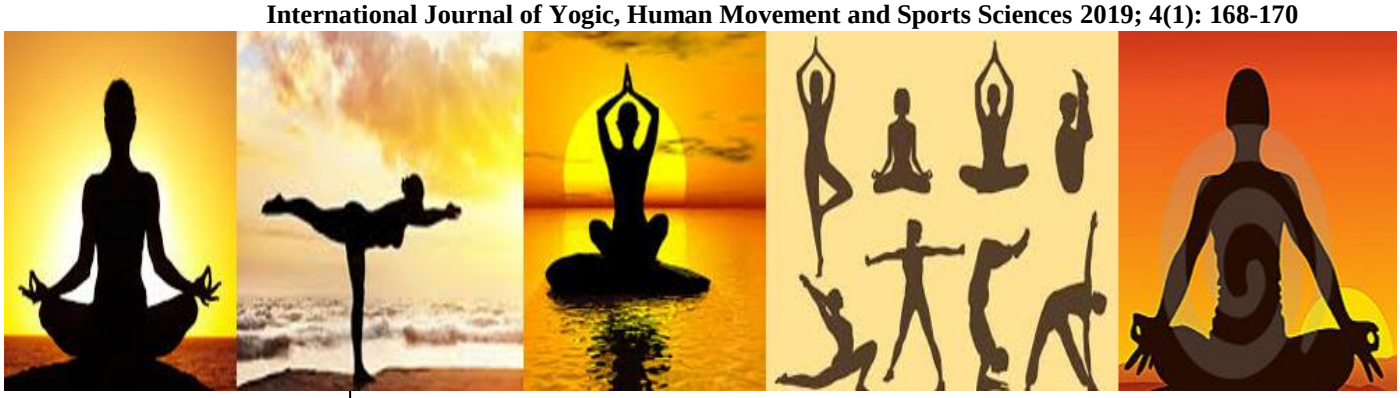

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Analysis of selected physical fitness components between sprinters and football players

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Abstract
The purpose of the study was to find out some selected physical fitness components among male athletes and male football players of Guru Nanak Dev University, Amritsar, Punjab, India between the age group of 18 to 25years.A total of Forty subjects (N=40) 20 Sprinters and 20 Footballer will be selected for the study from various colleges of Guru Nanak Dev University, Amritsar, Punjab. To measure the physical fitness of sprinters and football players Sit ups test 50m Run and 600m Run was applied for the collection of date. The purposive sampling technique was used to attain the objectives of the study. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study. Statistical ® 7.0 software was used in data analysis. Unpaired t-test was used in data analyses. In all the analyses, the 5% critical level ($p \leq 0.05$) was considered to indicate statistical significance.

Keywords: Physical fitness components, sprinters, football players

Introduction
"Physical fitness is one's richest possession; it cannot be purchased; it has to be earned through a daily routine of physical exercises." It is well accepted that the citizens who are fit prove assets of a nation whereas citizens who are weak prove its liabilities. Thus it becomes the duty as well as responsibility of a country to ensure physical well-being and fitness of its citizens. Being physically fit enables an individual to accomplish a host of tasks in his everyday life. A physically under-developed or inactive person belies the human capacity for thought and for work, which is highly needed to lead a successful and useful life

Sports and physical fitness have always been an essential feature of human culture and civilization the highly developed system of Yoga and a huge variety of highly developed indigenous games, including martial arts is a testimony to this thing. It is stated in the Olympic Charter, Olympism is a "philosophy of life, exalting and combining in a balanced whole the qualities of body, will and mind". Physical fitness is the art of humanity. It is the basic need for people. It is the fundamental form of human expression. It is the means of enhancing national prestige. It is an avenue of social adjustment. It is the most saving graces in the world. According to Bucher (1958), Physical fitness is the ability of an individual to live a balanced life. It involves physical, Mental, emotional and spiritual factors and the Capacity for their wholesome knowledge.

Physical fitness can be explained as a state of physical well-being involving health-related components and some skills related to them. Fitness on the other side can be paraphrased as a condition in which one has energy enough to deal with fatigue so as to enjoy life. Fitness is particularly essential for elderly people in order to maintain health in order to lead a high quality daily life (Tanaka *et al*., 2004). The term 'skill-related physical fitness' means one's athletic ability in sports such as tennis and it encompasses skill-related attributes like dynamic balance, power, speed and agility. The health-related aspect of fitness measures the cardiovascular endurance, strength, endurance and flexibility of muscles and body composition (Hopkins & Walker, 1988). Physical fitness can be measured by means of some functional tests which are specific and normative-based, instead of criterion-based, but this leaves unanswered the question regarding the quantum of a specific fitness factor (e.g. muscular endurance) required for leading a good quality life (Chia *et al*., 2007) [9].

With the beginning of the human race physical activities manifestation is started to subsist and to attack and prevent from being prey. This edify the human being's knowledge to be physically fit in the form of having muscle mass and ability to fight and run. These endeavours change the life of human being and after some time they formally started to play as organised manner and show their superiority over others.

Analysis of Data

Table 1: Mean Values (±SD), Standard Error of the Mean and Test Statistic t of Sit ups in sprinters (N = 20) and football players (N = 20).

Groups	Mean	SD	SEM	t-value
Sprinter	27.3	3.06	0.68	2.55
Football player	30.3	4.27	0.95	

Significant at .05 level of $t_{.05}$ *(38)* =2.021

Table 1: shows that the mean of Sit ups of sprinters and footballer players was 27.3and 30.3respectively, whereas the standard deviation (SD) of Sit ups of sprinters and footballer players was 3.06 and 4.27respectively. The critical value of t at 95% probability level is lower (2.021) than the observed value of t (2.55*). The data does suggest that the differences between sprinters and footballer players in regard to Sit ups are significant.

With the beginning of the human race physical activities manifestation is started to subsist and to attack and prevent from being prey. This edify the human being's knowledge to be physically fit in the form of having muscle mass and ability to fight and run. These endeavours change the life of human being and after some time they formally started to play as organised manner and show their superiority over others.

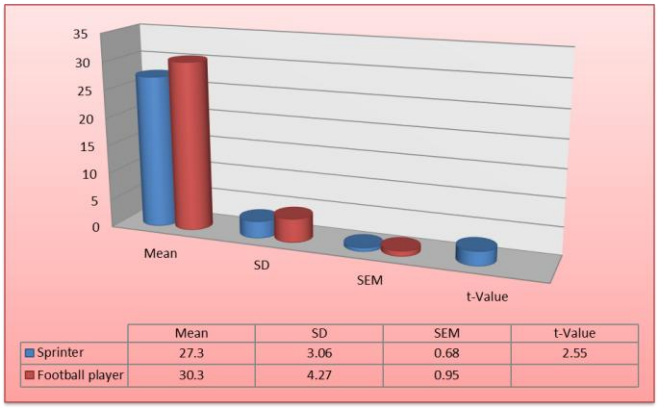

Fig 1: Mean Values (±SD), Standard Error of the Mean and Test Statistic t of Sit ups in sprinters (N = 20) and football players (N = 20).

Table 2: Mean Values (±SD), Standard Error of the Mean and Test Statistic t of 50 Yard Run in sprinters (N = 20) and football players (N = 20).

Groups	Mean	SD	SEM	t-value
Sprinter	7.81	0.32	0.07	6.52
Thrower	6.52	0.61	0.14	

Significant at .05 level of $t_{.05}$ *(38)* =2.021

Table 2: shows that the mean of 50 Yard Run of sprinters and footballer players was 7.81and 6.52 respectively, whereas the standard deviation (SD) of 50 Yard Run of sprinters and footballer players was 0.32 and 0.61respectively. The critical value of t at 95% probability level is lower (2.021) than the observed value of t (6.52*). The data does suggest that the differences between sprinters and footballer players in regard to 50 Yard Run are significant.

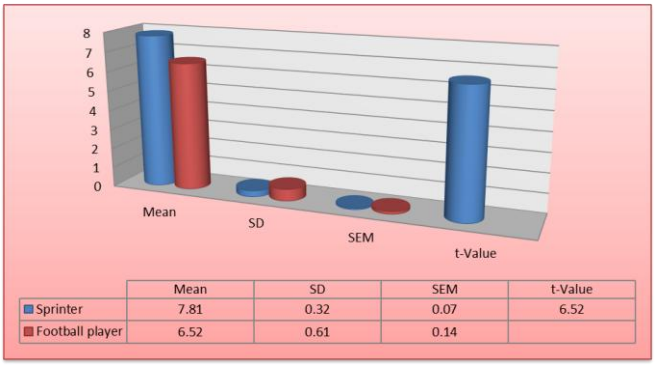

Fig 2: Mean Values (±SD), Standard Error of the Mean and Test Statistic t of 50 Yard Run in sprinters (N = 20) and football players (N = 20)

Table 3: Mean Values (±SD), Standard Error of the Mean and Test Statistic t of 600 Yard Run in sprinters (N = 20) and football players (N = 20).

Groups	Mean	SD	SEM	t-value
Sprinter	1.67	0.24	0.052	2.15
Football player	1.84	0.25	0.057	

Significant at .05 level of significance $t_{.05}$ *(38)* =2.021

Table 3: shows that the mean of 600 Yard Run of sprinters and footballer players was 1.67and 1.84respectively, whereas the standard deviation (SD) of 600 Yard Run of sprinters and footballer players was 0.24 and 0.25respectively. The critical value of t at 95% probability level is lower (2.021) than the observed value of t (2.15*). The data does suggest that the differences between sprinters and footballer players in regard to 600 Yard Run are significant.

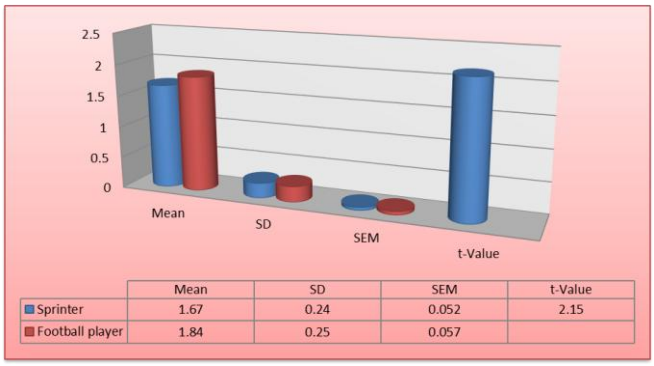

Fig 3: Mean Values (±SD), Standard Error of the Mean and Test Statistic t of 600 Yard Run in sprinters (N = 20) and football players (N = 20).

Discussion of Findings

The demands regarding physical fitness vary according to the type of sport. Since antiquity, it has been believed that a particular physique is needed to achieve success in particular sports (Powers *et al.*, 1997). It has been a matter of great concern to judge the performance of the human body by its size, shape and form. Factors such as physical and physiological aspects are essential for their contribution towards the success of an athlete in national and international competitions. Like many other individual and team games, Track and field events require not just tactical and technical skills but also considerable physical fitness (Marques, González-Badillo & Kluka, 2006; Marques *et al.*, 2009).

Since among the footballers and sprinters the physical demands do not vary greatly, the right required tests for each discipline and for specific athletes will vary greatly. During a long competitive season, a training program has to be developed to meet the individual needs of the athlete and take into consideration many factors: gender, age, strengths, weaknesses, objectives, training facilities etc. Since different athletes have different needs, it is impossible to devise a common program which will be suitable for all athletes. Usually the coaches and trainers focus mainly on technical and tactical drills, and reduce the quantum of training for strength and conditioning activities. This can result in undesired changes in select aspects of the optimal physical fitness profile. There have been undertaken a number of studies to ascertain and determine specific physical and physiological profiles of athletes in a variety of games. Successful participation in these sports necessitates a high level of technical and tactical skills on the part of a player. All athletic events require comprehensive abilities including physical, technical, mental, and tactical abilities. Among these abilities, physical abilities of the players are the most significant ones because they have clear, obvious and marked effects on the skill of players and the tactics of the teams, the reason being the ball games require from each player repeated maximum exertion such as dashing and jumping.

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