# An Analytical Study of Physical Fitness among the School Level Players of Contact, Semi Contact and Racquate Sports

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## ABSTRACT

The purpose of present investigation was to find out the difference in physical fitness variables among the school level players of contact sports, racket sports and semi contact sports. In the present study investigator applied random sampling procedure to select the sample. The sample of present study comprised of 150 players of school level, including contact sports (N1=50), Semi contact sports (N2=50) and Racket sports (N3=50). Johnson and Nelson Physical Fitness test was used to collect data from the schools of Jalandhar district. Johnson and Nelson Physical Fitness test was used to measure the physical fitness of players. The variable means of contact sports, semi contact sports and racket sports athletes were compared by using Analysis of variance (ANOVA). It has been found that players of contact sports have greatest arm strength and abdominal strength, and racket sports have lowest. Further racket sports players shown greatest flexibility and agility, and contact sports players possess least among the school level players of different sports. Highest speed has been found with semi contact sports players and contact sports possess the least speed among the school level players of different sports. The players of semi sports have possessed greatest static balance and racket sports players shown lesser static balance among the school players of different sports. Statistically, it has been observed that school level players of different sports differ significantly from each other in arm strength, flexibility, abdominal strength, speed, agility and static balance.

## Keywords

Physical fitness, Contact sports, semi contact sports and racket sports

## Introduction

Performance in games and sports in the national and international competition is not merely a more of chance but is a result of the resent innovation made in the technique and tactics with the help of physical fitness. Every athlete has some degree of physical fitness, but some athletes have so little that they become winded in the climbing a flight of status. Modern sport requires an incredible and exceptional level of fitness to survive in the competition and to cope up with the level of the competing team. According to Encyclopedia Britannica (1994), the training of the body improves its function and enhances its fitness, so it is understood that for all systems of the body to be fit, we need physiological fitness which should respond to hard work and effective functioning of appropriate systems. A well-designed conditioning programmed provides opportunity for development and maintenance of physical fitness. In other words, conditioning the body through regular exercises enables the player to meet emergences more effectively. A fit person in modem competitive world according to Frost& Mckelvie (2005) is free from diseases, possesses adequate strength, endurance and agility, has skill to live a productive and happy life, and also knows how to relax.

Sports and physical activity have been considered an integral part of human life since its Inception. Physical activity is an indispensable condition of human life. It is universally accepted that sports and games fulfill the requirements of human activities. Revolutionary achievements of electronic media have made it all the more important not only the lives of participants but also among the millions of spectators, viewers and listeners. In modern times, the spirit of extreme competition has changed the complexion or scenario of sports. The craze for winning awards in the Olympics and other worldwide rivalries has catalyzed the games researchers to look into investigating all the angles and conceivable outcomes which can add to improve high level sport performance. Physical fitness is one of the factors that contribute to performance in sport. Previous studies have demonstrated the positive effects of physical activity and sport on physical health and fitness and psychological well-being (Hagberg, 1990., Sallis et al. 1999 & Paluska and Schwenk, 2000) and also intellect development (Lim, 2013 and Turkmen, 2013).

When the human movement in confined with the universal drive to play, the combination forms one of the most powerful education media in physical education. The word schooling implies precise guidelines or preparing or groundwork forever or for some specific undertaking. Physical Education is an education of and through human movement where many of the educational objectives are achieved by means of big muscle activities involving sport, game, gymnastic, dance and exercise (Barrow,1982). Vigorous exercises properly adhered to on a regular basis appears to have much potential for adding more life to our years and probably more years to your life (Morehouse and Miller, 1976). This aspect of physical fitness concerns with the improvement of characteristics important to work effectively and keep a solid way of life. The parts of solid related wellness are cardio respiratory perseverance, strong strength and perseverance, adaptability and body piece (Tanored, 1987).

Regular exercise and physical activity for the school student is the primary key for their good health and well-being. Physical activity and good eating habits improves the physical fitness level and optimum health status of the school going children. By following these mean growth and development can take place in efficient way, so that their learning can improve and creates healthy behaviors along with physiological and psychological development among school students. Veugelers & Fitzgerald (2005) studied that school based healthy eating and physical activity programs reduces the risk of obesity and diseases in children, increases learning and help to set up healthy behaviors among children throughout their life.

## Methodology

This study was adopted a descriptive research design to assess the physical fitness level of the school level players of contact, semi contact and racket sports of Punjab. In the present study investigator applied random sampling procedure to select the sample. The sample of present study comprised of 150 players of school level, including contact sports (N1=50), Semi contact sports (N2=50) and Racket sports (N3=50). The data was collected from the schools of district of Jalandhar. Johnson and Nelson Physical Fitness test was used to measure the physical fitness of players. The variable means of contact sports, semi contact sports and racket sports players were compared by using Analysis of variance (ANOVA). To find out the significant difference among two group post hoc t test was used.

## Result and Discussion

**Table I: Mean, standard deviation and F values of physical fitness variables among the school level players of different sports**

| Variables | Contact Sports (N=50) | Semi contact sports (N=50) | Racket sports (N=50) | F value |
|---|---|---|---|---|
| | Mean± S.D | Mean± S.D | Mean± S.D | |
| Arm Strength | 6.46± 1.84 | 5.34±2.05 | 5.20± 1.86 | 6.47* |
| Flexibility | 6.29±2.61 | 7.54±3.01 | 7.95±2.28 | 5.36* |
| Abdominal Strength | 12.74±2.06 | 11.7±3.65 | 10.86 ±2.07 | 6.08* |
| Speed | 10.75± 1.66 | 9.48±.84 | 9.68± 1.23 | 13.81** |
| Agility | 12.65±1.52 | 11.58±1.48 | 11.55±1.63 | 8.27** |
| Static Balance | 8.10±1.74 | 9.37±2.13 | 8.05±2.48 | 6.03* |

* Significant at .05 level; & ** Significant at .01 level

Table I represents the comparison of mean, standard deviation and level of significance of arm strength, flexibility, abdominal strength, speed, agility and static balance among school level players of different sports. Players of contact sports possessed greatest arm strength (6.46) and racket sports players possess lowest arm strength (5.20) among the school level players of different sports. The difference was found to be statistically significant, at the level of P<.05.

Racket sports players have possessed greatest flexibility (7.95) and contact sports players have possess lowest flexibility (6.29) among the school level players of different sports. The difference was found to be statistically significant, at the level of P<.05.The contact sports players possessed greatest abdominal strength (12.74) and racket sports players possess lowest abdominal strength (10.86) among the school level players of different sports. The difference was found to be statistically significant, at the level of P<.05. Highest speed has been found with semi contact sports players (9.48) and contact sports players have possess lowest speed (10.75) among the school level players of different sports. The difference was found to be statistically significant,

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at the level of P<.01. Highest agility has been found with racket sports players (11.55) and contact sports players have found least agile (12.65) among the school level players of different sports. The difference was found to be statistically significant, at the level of P<.01.The players of semi sports have possessed greatest static balance (9.37) and racket sports players shown lesser static balance (8.05) among the school players of different sports. The difference was found to be statistically significant, at the level of P<.05.

**Table II: Post-hoc't' values of arm strength, flexibility, abdominal strength, speed, agility and static balance among the school level players of different sports**

| Variables | t value | | |
|---|---|---|---|
| | Contact Sports Vs Semi Contact sports | Contact Sports Vs Racket sports | Semi Contact sports Vs Racket sports |
| Arm Strength | 2.92** | 3.28** | .36 |
| Flexibility | 2.36* | 3.15** | .78 |
| Abdominal Strength | 1.92 | 3.48** | .77 |
| Speed | 4.88** | 4.12** | .77 |
| Agility | 3.46** | 3.57** | .10 |
| Static Balance | 2.94** | .13 | 3.07** |

* Significant at .05 level; & ** Significant at .01 level

From table II, it was observed that there was a significant mean difference between the players of contact sports and racket sports (3.28; p< .01), having the maximum value followed by contact sports and semi contact players (t=2.92; p< .01) in arm strength, but insignificant mean difference was observed between players of semi contact sports and racket sports. In flexibility, it was clearly noticed that there was significant mean difference between the players of contact sports and racket sports (t=3.15; p< .01), having the maximum **v**alue followed by contact sports and semi contact players (t=2.36; p< .05, but insignificant mean difference was observed between semi contact sports and racket sports

players. In abdominal strength, there was significant mean difference found only between the between the players of contact sports and racket sports (t=3.34; p<.01). However, insignificant mean difference was observed between contact sports and semi contact players, followed by semi contact sports and racket sports players. In speed, there was significant mean difference between the players of contact sports and semi contact sports (t=4.88; p<.01), having the maximum value followed by contact sports and semi contact players (t=4.12; p< .01, but insignificant mean difference was observed between semi contact sports and racket sports player. In agility, there was significant mean difference between the players of contact sports and racket sports (t=3.57; p<.01), having the maximum value followed by contact sports and semi contact players (t=3.46; p< .01), but insignificant mean difference was observed between semi contact sports and racket sports player. In static balance, there was significant mean difference between the players of racket sports and semi contact sports (t=3.07; p<.01), having the maximum value followed by contact sports and semi contact players (t=2.94; p< .01), but insignificant mean difference was observed between semi contact sports and semi sports player.

### Discussion

The finding from table -I and II indicated that, players of contact sports possessed greatest arm strength and racket sports possess least among the school level players of different sports. There was significant difference among the school level players of different sports. This is may be due to nature and requirements of the sports. Further, on applying post hoc t test, it was found that players of contact sports have significantly greater arm strength than semi contact sports and racket sports. However, players of semi contact sports have insignificant greater arm strength than racket sports.

The Racket sports players have possessed greatest flexibility and contact sports players have possess lowest flexibility among the school level players of different sports. There was significant difference among the school level players of different sports. Further, on applying post hoc t test, it was found that players of racket sports and

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semi contact sports have significantly greater flexibility than contact sports. However, players of racket sports have insignificant greater flexibility than semi contact sports. It indicates that flexibility plays a discriminating role in the selection of sports, because flexibility differ according to the nature of sports.

The contact sports players possessed greatest abdominal strength and racket sports players possess lowest abdominal strength among the school level players of different sports. There was significant difference among the school level players of different sports. This is because in contact sports more strength is required as comparison to other sports. Further, on applying post hoc t test, it was found that players of contact sports have significantly greater abdominal strength than racket sports. However, players of contact sports have insignificant greater abdominal strength than semi contact sports, and similarly semi contact sports players have insignificant abdominal strength than racket sports.

Highest speed has been found with semi contact sports players and contact sports players have possess lowest speed among the school level players of different sports. There was significant difference among the school level players of different sports. Further, on applying post hoc t test, it was found that players of semi contact sports and racket contact have significantly greater speed than contact sports. However, players of semi contact sports have insignificant greater speed than racket sports. It indicates that speed is required more in semi contact and racket sports as comparison to contact sports, and it is due to nature and types of sports.

It has been found racket sports players have greatest agility and contact sports players have found lesser agility among the school level players of different sports. There was significant difference among the school level players of different sports. Further, on applying post hoc t test, it was found that players of racket sports and semi contact sports have significantly greater agility than contact sports. However, players of racket sports have insignificant greater speed than semi contact sports.

The players of semi sports have possessed greatest static balance and racket sports players shown lesser static balance among the school players of different sports. There was significant difference among the school level players of different sports. Further, on applying post hoc t test, it was found that players of semi contact sports have significantly greater static balance than players of contact sports and racket sports. However, players of contact sports have insignificant greater static balance than racket sports.

## Conclusions

It has been found that players of contact sports have greatest arm strength and abdominal strength, and racket sports have lowest. Racket sports players possess greatest flexibility and agility, and contact sports players possess least among the school level players of different sports. Highest speed has been found with semi contact sports players and contact sports possess the least speed among the school level players of different sports. The players of semi sports have possessed greatest static balance and racket sports players shown lesser static balance among the school players of different sports. Statistically, it has been observed that school level players of different sports differ significantly from each other in arm strength, flexibility, abdominal strength, speed, agility and static balance.

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