International Journal of Physical Education, Sports and Health 2016; 3(5): 386-388

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2016; 3(5): 386-388

www.kheljournal.com
Received: 05-07-2016
Accepted: 06-08-2016

Suresh Kumar Singh
Research Scholar, Department of Physical Education, Dravidian University Rd, Srinivasa Vanam, Agaram, Andhra Pradesh, India

Correspondence
Suresh Kumar Singh
Research Scholar, Department of Physical Education, Dravidian University Rd, Srinivasa Vanam, Agaram, Andhra Pradesh, India

Comparison of motor fitness components among different racket game players of national level

Suresh Kumar Singh

Abstract
The purpose of this study was to compare Motor fitness component levels among the National level racket sports players. Ninety (90) subjects, 30 each racket sports (Badminton, Lawn Tennis and Squash) were selected from the Lucknow city for this study. Motor fitness tests were administered to find out the various motor fitness components (Arm Strength, Leg Strength, Speed, Endurance, Flexibility and Agility) among the different racket sports. One-way Analysis of Various (ANOVA) were employed to test for significant differences ($P \leq 0.05$) among the groups while the Scheffe's post hoc multiple comparison was applied when an F-statics indicated significant difference. Significant differences were found among different racket sports players on various Motor Fitness Components. Post hoc test revealed that Badminton players were comparatively better than Tennis and Squash games player in all the Motor Fitness Components.

Keywords: Motor fitness, racket games, national level

1. Introduction
General motor ability has been considered as one's level of ability in wide range of activities. It has been thought of as an integrated composite of such individual traits as strength, endurance, power, speed, agility, balance, reaction time, and coordination traits underlying performance in many motor complexes. In successful motor performance, these traits function in a coordinated manner and in effective sequence to achieve an accurate and efficient movement whether it may be a single effort as in the golf drive or in a series of complexes and rapidly changing movements as in basketball (Clarke, 1976). Racquet Sports are very fitness demanding sports. There is a great deal of attributes a person needs in order to become a successful in racket sports. The main fitness components are agility, speed, muscular endurance, muscular power and cardio-respiratory endurance. Good hand eye co-ordination is a must in this sport, in order to become successful. Agility is the ability to change the position of the body and the direction of the body quickly and accurately. But still there are various differences in the way the different racket sports are played. The racket sports like Badminton, Tennis and Squash has different skills and motor abilities requirements, It is in the light of these that the researchers evaluated the motor fitness components of the racket games players with the view of determining and providing information on the differences that may exist among the three groups of players.

2. Methods and Materials
Ninety (90) male sportsperson who participated in National level competitions of Badminton, Lawn Tennis and Squash were selected as subjects for this study. Motor fitness components namely strength, speed, endurance, flexibility and agility were selected for this study. The data were collected for each motor fitness component at Lucknow Christian College Ground, Lucknow. The standard tests which were selected for each variable of motor fitness component are as follows: chin-ups for arm strength, standing broad jump for Leg strength, 50 meter dash for speed, 600 yard run/walk for endurance, scott and french test for flexibility and shuttle run (4×10 yard) for agility were administrated to the subjects.

3. Results and Discussion

3.1 Result: The results of the study are presented in Table -1 and Table-2. The analysis of variance employed to investigate difference among racket sports groups on the motor fitness Components has been presented in table -1. Table-2 shows the Scheffe's Post-Hoc comparison of group means.

Table 1: ANOVA Summaries for Motor Fitness Components of Racket Games Players

Variables	Source of variance	Sum of Square	Mean Sum of Square	Obtained F-value
Arm Strength	Between group Within Group	466.03 822.3	233.01 9.45	24.65*
Leg Strength	Between Group Within Group	8652.4 34835.2	4321.2 400.40	10.79*
Speed	Between Group Within Group	8.434 19.276	4.21 0.221	19.08*
Endurance	Between Group Within Group	6894.496 32395.73	3447.24 372.36	9.25*
Flexibility	Between Group Within Group	102.59 392.34	51.29 4.50	11.39*
Agility	Between Group Within Group	4.01 17.77	2.005 0.203	9.87*

*Significant at 0.05 Level, F (2, 87) =3.103

The Table 1 shows the one-way Analysis of Variance summaries for the Motor fitness components of the racket games players. The table shows the variance and f. value obtained for motor fitness components (Arm strength, Leg strength, Speed, Endurance, Flexibility and Agility). The computed F ratio for Arm length (24.65), Leg strength (10.79), Speed (19.79), Endurance (9.25), Flexibility (11.39) and Agility (9.87) were found significant ($P \leq 0.05$).

Table 2: Post-Hoc (Scheffe's) Comparison of Group Means for Motor Fitness Components

	Arm Strength	Leg Strength	Speed	Endurance	Flexibility	Agility
Badminton V/S Squash	0.34	14.6*	0.105	0.6	1.06*	0.259
Badminton V/S Tennis	4.97*	23.8*	0.696*	18.60*	2.6*	0.516*
Squash V/S Tennis	4.63*	9.2	0.596*	18.54*	1.59	0.257

*Significant at 0.05 level.

The Table 2 shows the result of Post-hoc test (Scheffe's) to assess pair wise differences of motor fitness among three groups. The significant differences were found between Badminton and Squash, between Badminton and Tennis and between Squash and Tennis Games players on various motor fitness components ($P \leq 0.05$).

3.2 Discussion of the Finding: The analysis of data using Analysis of Variance (ANOVA) test showed that variation exist among Badminton, Lawn tennis and Squash groups in all the selected motor fitness variables. Badminton players are relatively higher on all the motor fitness components followed by Lawn tennis and Squash players are relatively lower on motor fitness components among these group. This may be because in Badminton the nature of game is more strenuous than Squash and Lawn tennis players. In Badminton strength Agility and Flexibility components are dominating factor for their performance than Lawn tennis. Therefore, significant difference exists. Badminton scored higher than Squash players. Though the difference was not significant, this may be due to their nature of game require motor fitness, and in both the groups motor fitness plays an important role for optimum performance.

4. Conclusions

Within the limitations imposed by the subject and the experimental conditions, the following conclusions were derived:

1. Badminton, Lawn Tennis and Squash groups indicated difference on arm strength, Badminton players being higher on arm strength than other two groups and the Lawn Tennis players scored lowest among them.
2. Badminton, Lawn Tennis and Squash groups indicated difference on leg strength, Badminton being higher on leg strength than Lawn Tennis and Squash groups and Squash players scored lowest scores on leg strength.
3. Result revealed that difference existed among Badminton, Lawn Tennis and Squash groups on speed variable, Badminton and Squash groups scored highest and lowest on speed variable respectively.
4. On endurance variable, difference exist among Badminton, Lawn Tennis and Squash groups, Badminton and Lawn Tennis groups scored highest and lowest endurance variable respectively.
5. Badminton, Lawn Tennis and Squash group indicated difference on flexibility, Badminton and Squash groups scored highest and lowest on flexibility variable respectively.
6. Badminton, Lawn Tennis and Squash group indicated difference on agility, Badminton and Lawn Tennis groups scored highest and lowest on agility variable respectively.

5. References

1. Arright Margrite A. Study of Effect on Competitive Lonb Tennis on Motor Efficiency of the College Women as Measured By a Selected Battery Completed Research in Health Education and Recreation, 1963; 5:55.
2. Craig Andrews Barry. Physical Fitness Values of Canadian and South African School Boys Dissertation Abstracts International. 1976; 36:5912.
3. Del. Cab Comparison of Physical Fitness over A Four Year Period At University of North Dakota, Research Ouarterly. 1968, 9.
4. Dient Pamele Suell. Effect of Off-Season Training and Competition of Selected Physiological in Female College Lonb Tennis Players" Disssertation Abstracts International. 1974; 35:2748-A.
5. Gary Pricnce N. The Relationship of College Football

Strength, Speed and Agility of the Coaches Ranking of Ability" Completed Research in Health, Physical Education and Recreation, 1968; 10:360.
6. Gary Pricnce N. The Relationship of College Football Strength, Speed and Agility of the Coaches Ranking of Ability Completed Research in Health, Physical Education and Recreation, 1968; 10:130.
7. Hasche Carl E. A Comparison of the Physical Fitness Level Attained by Participants in Inter-Scholastic Badminton and in the Required Physical Education Programme Completed Research in Health Physical Education and Recreation, 1968; 10:65.
8. Henery FM, Whitely JD. Relationship of Individual Difference in Strength, Speed and Mass in Arm Movement Research Quarterly, 1960; 31: 24.
9. Hinton Evelyn A. Rarick Lawrence The Correlation of Rogers Test of Physical Capacity and the Cubbery and Cozens Measurement of Achievement in Lawn Tennis Research Quarterly, 1960; 11:58.
10. Holland Kenneth A. The Predictive Value of Selected Variable in determining the ability to play Lonb Tennis in small High School Completed Research in Health Physical Education and Recreation. 1965; 7:37.
11. Johnson Premchand Cole. The Effect of a Session of Inter Collegiate Soccer on Selected Component of Physical Fitness Dissertatioin Abstracts International. 1972, 32.
12. Johnson Thomas Cole. The Effect of a Session of Inter Collegiate Soccer on Selected Component of Physical Fitness Dissertatioin Abstracts International. 1972, 32:3355.
13. Jorndt George S. The Relationship between Physical Fitness and Academic achievement Completed Research in Health, Physical Education and Recreation. 1963; 10:36.
14. Malhotra MS, Subramanium S. Effects of Pre-Competitive and off season training on General Physical Fitness and skill in Lonb Tennis players. SNIPES JOURNAL, 1982; 5:24.
15. Mc Garry, Cascal Allen. Comparisson of Motor abilities and Physical Charcteristics of Collegiate soccer players by Position of Play. Dissertation Abstracts International. 1979; 39:4805
16. Resentskein Irwin, Frost Rouben S. Physical Fitness of Senior High School Participating in selected Physical Education Programme in New York state Research Quarterly. 1969; 35:666.
17. Robson M. Variation of Recreation time of Boys and Girls of Difference stage of elementary School level. SINPES JOURNALS, 1982, 5.
18. Shieres Thomas Edward. A Comparative Study of Wrestling and Soccer with Regard to Physica and Cardiovascular Endurance. Completed Research in Health Physical Education and Recreation, 1964; 6:51.
19. Singh Karamjit. Physical Fitness of Hockey Players" SNIPES JOURNAL. 1978; 1:29.
20. Sloan AW. Physicall Fitness of College Students in South Africa, United States of America and England" Research Quarterly. 1963; 37:24.