International Journal of Yoga, Physiotherapy and Physical Education
ISSN: 2456-5067
Impact Factor: RJIF 5.24
www.sportsjournal.in
Volume 3; Issue 2; March 2018; Page No. 162-164

Comparison of back, leg and abdominal strength different team games players

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Abstract
The aim of this study was to compare back, leg and abdominal strength different team games players. For the purpose of this study thirty male players from different colleges of Amravati district. The participants were from three different teams (handball, volleyball and basketball players) playing at the inter-collegiate level. They were selected into three groups of 10 participants each. The age groups of the 20 to 25 years were recruited, with their consent. For the purpose of the study variables were considered for this study as back, leg and abdominal strength. It was measured by using the standard test items of leg strength test and back strength test measured by dynamometer and abdominal strength measured by modified sit-ups. The descriptive analysis of data collected on back, leg and abdominal strength different team games players and Analysis of covariance (ANCOVA) was used as a statistical procedure to establish the significant difference, if any, existing different team games players data on selected criterion variables. The level of significance was accepted at $p < 0.05$. From the result of the study, the conclusions have been drawn as follows: There was no significant difference in back, leg and abdominal strength of handball, volleyball and basketball team games players. But graph shows the difference in mean of back, leg and abdominal strength of handball, volleyball and basketball team games players.

Keywords: of back, leg and abdominal strength different team games players

Introduction
The capacity of a muscle to exert the greatest possible force against a resistance is referred to as muscular strength. Strength is important for proper posture, for successful sports performance, and in resisting injuries [1]. Strength, power and muscular endurance are fitness components with many things in common. They require the application of muscular force to overcome resistance while in motion; they involve muscular contraction of a specific muscle or muscle group; and they are measurable components of fitness. Training programs can improve these fitness components. Muscle strength is the ability of the muscle or muscle to bring strength to overcome the most resistance in an effort. The strength can be measured based on the weighted amount. The upper-body and lower-body strengths are measured differently [2]. The strength of the muscles it is important for daily activities and activities to be performed for each person, such as running, walking, jumping, cycling etc. The definition of neural power is that the ability of the muscles to produce power with high intensity on a small gap. It is a conditional capability and it is largely dependent on the muscular energy emission process. The most important motor capability in sports is the direct product of muscle contraction. Muscle contraction causes all movements in sports and therefore, a part of all motor abilities and training of parcel, technical skills and strategic action is good for general health, good adhesion and injuries.

Methodology
For the purpose of this study thirty male players from different colleges of Amravati district. The participants were from three different teams (handball, volleyball and basketball players) playing at the inter-collegiate level. They were selected into three groups of 10 participants each. The age groups of the 20 to 25 years were recruited, with their consent. For the purpose of the study variables were considered for this study as back, leg and abdominal strength. It was measured by using the standard test items of leg strength test and back strength test measured by dynamometer and abdominal strength measured by modified sit-ups.

Analysis of Data
The descriptive analysis of data collected on back, leg and abdominal strength different team games players and Analysis of covariance (ANCOVA) was used as a statistical procedure to establish the significant difference, if any, existing different team games players data on selected criterion variables. The level of significance was accepted at $p < 0.05$. Mean scores and standard deviation of all selected variables are presented in Table 1.

Table 1: Mean and Standard Deviation of All Selected Variables

Variables	Group	Mean	SD
Back Strength	Handball	88.90	10.93
	Volleyball	92.20	6.86
	Basketball	85.50	15.61
Leg Strength	Handball	103.10	10.82
	Volleyball	107.30	7.33
	Basketball	104.60	9.08
Abdominal Strength	Handball	51.70	6.27
	Volleyball	53.40	8.37
	Basketball	51.50	4.79

Table 2: Analysis of Variance (ANOVA) of back strength among team games players

Source of Variation	SS	Df	MS	F
Between Groups	224.47	2	112.23	0.821
Within Groups	3691.00	27	136.70	

*significant at 0.05 level $F_{0.05}(2, 27) = 3.354$

Table 2 reveals that there was significant difference between the means of handball, volleyball and basketball players back strength. The calculated 'F' was 0.821 whereas tabulated 'F' was 3.354. Calculated 'F' greater than the tabulated 'F', which shows insignificance in handball, volleyball and basketball team game players back strength. Therefore, there is no need of post hoc test.

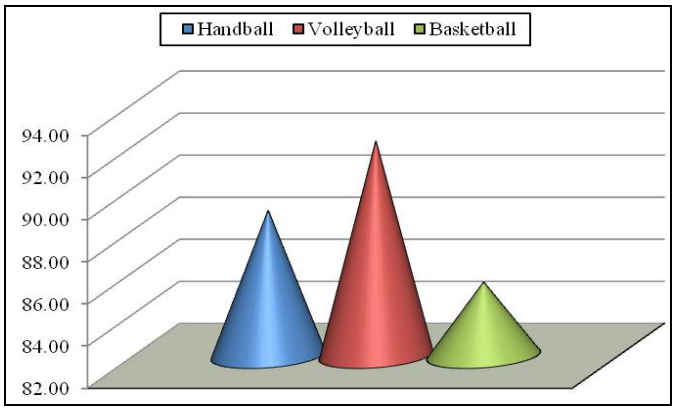

Fig 1: Mean difference of back strength among team games players

Table 3: Analysis of Variance (ANOVA) of leg strength among team games players

Source of Variation	SS	DF	MS	F
Between Groups	90.60	2	45.30	0.537
Within Groups	2279.40	27	84.42	

*significant at 0.05 level $F_{0.05}(2, 27) = 3.354$

Table 3 reveals that there was significant difference between the means of handball, volleyball and basketball players leg strength. The calculated 'F' was 0.537 where as tabulated 'F' was 3.354. Calculated 'F' greater than the tabulated 'F', which shows insignificance in handball, volleyball and basketball team game players leg strength. Therefore, there is no need of post hoc test.

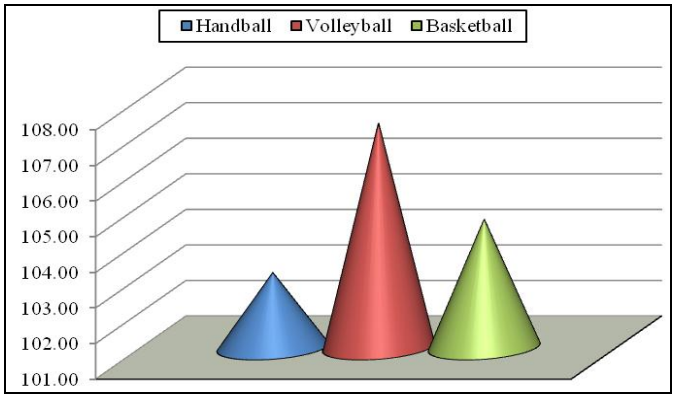

Fig 2: Mean Difference of Leg Strength among Team Games Players

Table 4: Analysis of Variance (ANOVA) of abdominal strength among team games players

Source of Variation	SS	DF	MS	F
Between Groups	21.80	2	10.90	0.247
Within Groups	1191.00	27	44.11	

*significant at 0.05 level $F_{0.05}(2, 27) = 3.354$

Table 4 reveals that there was significant difference between the means of handball, volleyball and basketball players abdominal strength. The calculated 'F' was 0.247 where as tabulated 'F' was 3.354. Calculated 'F' greater than the tabulated 'F', which shows insignificance in handball, volleyball and basketball team game Players abdominal strength. Therefore, there is no need of post hoc test.

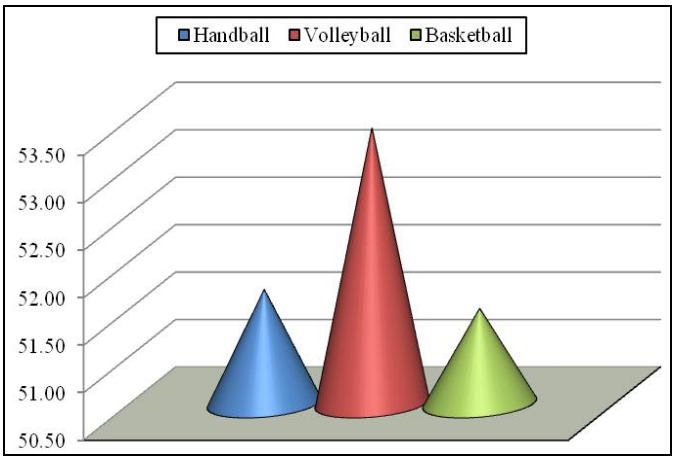

Fig 3: Mean difference of abdominal strength among team games players

Conclusion

From the result of the study, the conclusions have been drawn as follows: There was no significant difference in back, leg and abdominal strength of handball, volleyball and basketball team games players. But graph shows the difference in mean of back, leg and abdominal strength of handball, volleyball and basketball team games players.

References

1. Jameson, Pam, Fresen, Sue. Personal Fitness. Bureau of Instructional Support and Community Services Florida Department of Education, 2000. http://www.leon.k12.fl.us/public/pass/
2. Voza, Luann. Define Strength, Power & Muscular Endurance, 2017. https://www.livestrong. com/article/ 115549-define-strength-power-muscular-endurance/
3. Kumar, Ajay, Singh, Nandalal. A comparative study of physical fitness of Government and Non – Government school boys. International Journal of Behavioral Social and Movement Sciences. 2012, 1(04).
4. Huff, Harbin Nancy. A Comparison of Physical Fitness Levels of Home School and Public School Students in South Alabama. Dissertation Abstract International. 2000; 61(2):544.
5. Gaurav Vishaw, Amandeep Singh, Singh Sukhdev. Comparison of physical fitness variables between individual games and team games athletes, Indian Journal

of Science and Technology. 2010; 4(5):547-549.
6. Gill, Manmeet. Comparative Study of Physical Fitness Components of Rural and Urban Female Students of Punjabi University, Patiala. Anthropologist. 2010; 12(1):17-21.
7. Malik, Ashok. A comparative study of selected physical fitness components and physiological variables of kho-kho and kabaddi female players. ISPERYS, 2012, 74.
8. Rao J. Prabhakar. A study on the physical fitness among basket ball and hand ball players in Hyderabad. International Journal of Health, Physical Education and Computer Science in Sports. 2011; 2(1):142-143.
9. Singh, Abhay. Comparison of Selected Physical Fitness Components among Cricket and Athletic Inter University Players. ISPERYS, 2012, 128.