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Table of Content

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Table of Content Contd…..

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A COMPARATIVE STUDY OF LEADERSHIP QUALITY OF INDIVIDUAL AND TEAM SPORTS

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INTRODUCTION

Leaders are born; we can not hope to develop them, only to establish them. Leaders should always be fund in the act of "leading"; quiescence is the followers. "Leadership action is more than words describe-et is a quality of interaction which takes on added meaning for people as they live it and study its significance."

Generally, larger groups need more structured leadership which may not be available. Moreover, larger groups are likely to have potentially disruptive coalition than is true among smaller groups. While finally larger groups often are focused on a wider variety of both group and personal that in larger groups shifts in cohesion are not likely to be as abrupt as it true in smaller groups. However, when a larger group's more difficult to change the quality of "we feeling" among members.

If the team does well, and the leadership and norms established by the conservative coalition; are satisfactory, this initial clique is not countered. However, if things do not go well, it is highly possible that a revolutionary coalition will form, composed of medium or low status members, whose opinions assume some power because of the lack of effectiveness of the norms of the first formed conservative coalition. The purpose of the study was to compare the leadership quality between participants of individual and team sports. It was hypothesized that there would be no significant difference of leadership behavior between the participants of individual & team sports. For the purpose of present study sixity female Inter-university players were selected by using random technique. The subjects belonged to different categories of sports such as individual sports (track & Field and Swimming) Team games (Football Basketball) The age of the subjects ranged from 17 to 25 years.

Boucher conducted a study of effect of the congruence of leadership style and task relevant ability on leadership effectiveness of intramural/recreational sports director co-varies with the congruence of leadership style and task relevant ability. In effect, it was and investigation of the adequacy of situational leadership Theory (SLT) in a selected sport environment. Using the lead self Instrument, the leadership style of 174 randomly selected intramural/ recreational sport directors was ascertained. Leadership style was considered to be two dimensional consisting of task oriented and relationship oriented behavior.

METHODOLOGY

A likert type questionnaire prepared by L.I. Bhushan (Head and Prof., Department of Psychology, Bhagalpur University, Bhagalpur) consisting 30 items measures authoritarian vs. democratic leadership was employed for this study. The Leadership Preference Scale was chosen for this study because it is suitable for Indian Population & mends for the same age group. The reliability & validity of this leadership Preference Scale is high and administrative feasible. The players of different individual & team sport were asked to underline only one of the five alternative responses for a positive item (i.e. an agreement with which indicated preference for democratic leadership) the scoring was done as following:

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Respo nses Agree	Strongly Disagree	Agree	Undecided	Disagree	Strongly
Scores	5	4	3	2	1

In case of negative items (i.e, an agreement with which indicated preference for autocratic leadership) the scoring was reversed. The total score was the sum of the scores on all the statement.

To compare between team and individual sport, questionnaire were distributed and mailed and after collecting the questionnaire score were assigned. On the basis of those scores mean, standard deviation and difference between mean of team game and individual game were draw out, t-ratio was employed.

FINDINGS

To find out the comparison between team games & Individual sports, t-test was employed which is presented in table.

Table - 1

Comparison of the Scores of Leadership Behavior of the Participants of Team Game and Individual Sport

Groups	Mean	SD	DM	DM	T-ratio
Individual	102.033	11.935	4.133	3.021	1.368
Team	97.9	11.463			

* Significance 0.05 Level, Tab. 05 (two tailed) =2.042

Table shows that mean of individual group is 102.022 and standard deviation is 11.935 and on other hand mean of team group is 97.9 and standard deviation is 11.436. t-value obtained is 1.368 which is insignificant of the tabulated value needed for significance at .05 level is 2.042. Discussion of Findings an insignificant difference in leadership between the participants of individual and team sport was obtained by means of t-test. This insignificant difference my be because the participants practices in similar kind of environment irrespective of team or individual sport. Sport participations being gregarious in true, they might be mixing with others before as well as after training. Over and above this, the influencing factors for leadership might be their background, the background training and behavior of coaches, the opportunities for development of leadership qualities etc.

Since these factors were also similar for participants of both individual and team games, hence, insignificant difference might have been obtained. On the basis of the results of the study hypothesis framed in chapters one is accepted as insignificant difference between participants of individual sport and team games was obtained.

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COMPRESSION OF EXPLOSIVE LEG STRENGTH AMONG SPRINTERS AND JUMPERS UNIVERSITY LEVEL ATHLETES OF GWALIOR

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**Sports Officer, Malwa College of Education, Gwalior

ABSTRACT
The aim of the study was compassion of leg strength among sprinter and jumpers in athletics. For this purpose thirty students were selected who were studying in department of Physical Education, Jiwaji University, Gwalior M.P. Selected subjects were tested their leg strength by using Standing Broad Jump test and score were recorded in meter and centimeters, paired 't' test was applied among Sprinters and Jumpers Mean performance. Within the limitations of the present study it is concluded that there is significant different among sprinters and Jumpers explosive legs strength.
KEYWORD: *Comparison of leg explosive strength among sprinters and Jumpers.*

INTRODUCTION

Sports and games are competitive in nature and meant for a particular age group. The participation is only enjoyed by the talented and gifted youngsters. So the process of channelization of athletes in to various sports and games should be according to their ability and interest, after various investigation made by the sports experts. Today all the world, physical education, educators and coaches are facing their greatest challenges to handling problems in scientific way i.e., to given their sports person proper and progressive guideline based on scientific approach which lead to desert scientific results. Proficiency in sprinters and jumpers required that an ATHLETE has co ordinations and develops fitness along with speed. They should be capable of repeated sprints of short distance, has agility enabling him to rapidly change direction without losing momentum and has endurance to perform sustained period of activity. Over all we can say that all the major discipline required vary much the involvement of this motor component, I.e. leg muscular endurance, and leg explosive strength.

METHODOLOGY

The subject of this study was the students of School of Study of Physical Education and Sports Sciences, Jiwaji University, Gwalior (M.P.). For the purpose of the study 30 students were selected. The selected students are intervarsity level Athletes there age ranged between 18 to 25 years. To compare the leg strength of JUMPERS AND SPRINTERS, Standing Broad Jumps test was organized by researcher and pretest mean was compare so one shot designed was used to facilitate the study, "t-test" was employed as statistical technique at the 0.05 level of significance for reached up to the valid conclusion.

ANALYSIS OF DATA AND RESULTS OF THE STUDY

In order to determine the compare of leg strength among jumpers and sprinters data was compared by using "t-test".

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TABLE -1
COMPARATIVE ANALYSIS OF LEG STRENGTH AMONG JUMPERS AND SPRINTERS

Players	Mean	S.D.	D.F.	D.M.	't'-test
SPRINTERS	**2.25**	**0.189**			
			28	**0.09**	**1.27**
JUMPERS	**2.16**	**0.199**			

't' is significance at 0.05 level with degree of freedom 28 = 0.225

Table no 1 clearly revealed that there is significant difference of leg strength among JUMPERS AND SPRINTERS as the obtained't' value 1.27 is significantly higher than the tabulated 't' value 0.225 at the 0.05 level o significance. The graphical representation of data in presented figure I

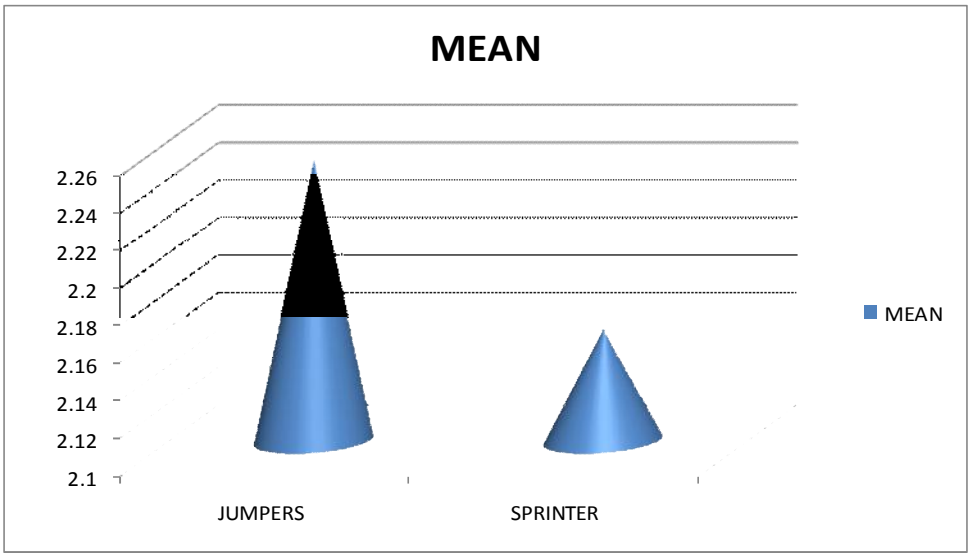

Fig 1- Mean and S.D. for JUMPERS and SPRINTERS

DISCUSSION OF FINDING

Finding of the study show that there is significance difference in JUMPERS AND SPRINTERS in the mean of leg strength. The reason for better performance in the both case are continuous participation in same type of training program but the involvement of leg strength may be differ in these two groups or we can say that in the JUMPERS ATHLETES needed explosive leg strength and SPRINTERS ATHLETES needed strength Endurance.

CONCLUSION

The entire null hypotheses were rejected as there was significant difference in leg strength among JUMPERS and SPRINTER at 0.05 level of significance.

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RECOMMENDATIONS

It is recommended that coaches and physical educationist must take into consideration the anthropometric measurements such as leg strength while selecting SPRINTERS AND JUMPERS

Similes study may be conducted by taking other variables

Similar types of the study can be conducted on other different level of subjects

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ASSESSMENT OF PERFORMANCE OF INDIAN BOXERS AT OLYMPIC GAMES FROM 1948 TO 2012

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Abstract
The aim of the study was assessment of performance of Indian Boxers at Olympics. For this purpose subjects were those boxers who had qualified for the Olympic Games as per rules of IOC. In total Forty-three (43) Indian male boxers who had qualified and have participated in various Summer Olympic Games were chosen as the subjects for this study.. . The data collected on the performance of boxers of India was tabulated for each Olympic Games. Results of this study show that Indian boxers won only one bronze medal at Olympics.
Keyword*: performance of Indian Boxers at Olympics*

INTRODUCTION

By nature human being are competitive and ambitious for the excellent in all sports performance. Not only every man but also every nation wants to show their supremacy by challenging the other nations. The modern Olympic games is the leading international sporting event featuring summer and winter sports competitions in which thousands of athletes participate in a variety of competitions. Amateur boxing is an Olympic and Commonwealth sport and is a common fixture in most of the major international games. It also has its own World Championships.

METHODOLOGY

The subjects for this study were those boxers who had qualified for the Olympic Games as per rules of IOC. In total Forty-three (43) Indian male boxers who had qualified and have participated in various Summer Olympic Games were chosen as the subjects for this study. The data for the study was collected from Indian official website: www.wikipedia.org , and Olympic website: www.olympic.org The data being collected from these reliable sources Olympic was considered to be highly reliable and valid. The data collected on the performance of boxers of India was tabulated for each Olympic Games. The analysis of performance was done by using descriptive and percentile statistics.

ANALYSIS

In order to see the assessment of performance of Indian boxers at Olympics from 1948 to 2012 was analyzed by using descriptive and percentile technique.

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TABLE 1
ASSESSMENT OF PERFORMANCE OF INDIAN MALE BOXERS AT OLYMPIC FROM 1948 TO 2012

S. no.	Year of Olympics	Venue of Olympics	No of participants	Final performance	% of performance
1.	1948	London	08	00	0%
2.	1952	Helsinki	04	00	0%
3.	1972	Munich	01	00	0%
4.	1980	Moscow	03	00	0%
5.	1988	Seoul	03	00	0%
6.	1992	Barcelona	01	00	0%
7.	1996	Atlanta	03	00	0%
8.	2000	Sydney	04	00	0%
9.	2004	Athens	04	00	0%
10.	2008	Beijing	05	00	0%
11.	2012	London	07	1 (bronze medal)	14.28%
12	Total		43	1	2.32%

The above table clearly revealed that Indian boxers are participating in Olympics games since 1948, and total 43 Boxers have been participated in 11 Olympic Games, India won only one bronze medal at 2012 London Olympic. Above table also show the success rate of Indian boxers at Olympics i.e. 2.32%. No medal won by the Indian boxers from 1948 to 2008 Olympics.

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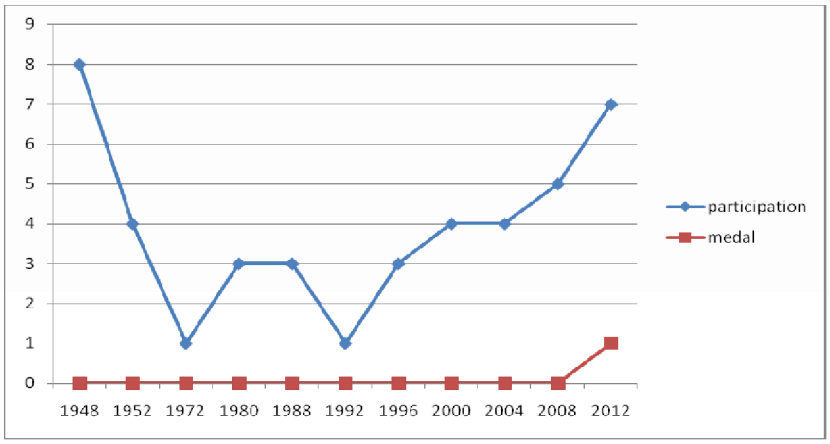

CONCLUSIONS

Within the limitations of the present study the followings conclusions may be drawn:
It may be concluded that from 1948 to 2012 there has been total 43 boxers of India who had participated in the summer Olympic Games. It may be concluded that Indian boxer who won bronze medal is Vijendra singh. It may be concluded that Indian boxers got no Gold and Silver medal out of 43 participants. It may further be concluded that from 1948 to 2012 India participating in Olympic Boxing.

RECOMMENDATION

It is recommended that the ministry of sports government of India should analysis the sports training strategies of India for training for improving the standard of boxing.
It is recommended that these results be kept in mind for making better policies of boxing in India.
It is recommended that the penal of experts from India be send to other countries for understanding their training and sports policies.

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ASSESSMENT OF PHYSIQUE CHARACTERISTICS AND TRAINING PATTERNS OF INDIAN UNIVERSITIES WOMEN SOCCER PLAYERS

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ABSTRACT

The purpose the study was assessment of physique characteristics and training pattern of Indian Universities women soccer players, 126 soccer players were selected as subjects for this study. The selected variables for the study were standing height, weight , fat percentage (biceps skin fold, triceps skin fold, sub scapular skin fold, super-iliac skin fold), leg length ,chest muscle girth, thigh muscle girth, biceps muscle girth, calf muscle girth, bone diameter, elbow epicondyle, knee epicondyle, shoulder width,. The average body weight, height, weight , fat percentage (biceps skin fold, triceps skin fold, sub scapular skin fold, super-iliac skin fold), leg length ,chest muscle girth, thigh muscle girth, biceps muscle girth, calf muscle girth were 49.54 Kg , 156.44 cm, 81.5 cm, 7.38 mm, 10.41 mm,12.71mm, 18.59 mm, 5.07 cm, 8.06cm, 33.54 cm, 23.41 cm, 54.67 cm, 48.51 cm, and 80.44 cm respectively. All 8 universities give 4 hours and 18 minutes for soccer training which is higher. Average session of training per day was approximately 2 for every team. All 8 universities trained for six days a week and for about 8 months and 23 days a year which is highest. All universities start training at early age of 15 years on average.

KEYWORDS: Physiology, Skin fold, Fat Percentage, Epicondyle

INTRODUCTION

The analyses of the highest achievers in soccer show that excellence in games the product of different training programmed and physique characteristics. There are many detailed study regarding the specific characteristics of women soccer player participation in intervarsity championships. But it is not much clear for each of these profiles contributions to the achievement of performance. Sports performance is the sum of numerous factors which can vary from individual to individual, even if ultimately they achieve similar results in the competition.

Soccer is a game of physical fitness components. The soccer player must be among the most physically fit of the athletes in terms of physical fitness at one hand and physiological and pre-requisites at the other, and is equally important to maintain the equilibrium of the players. The motor performance qualities commonly recognized in soccer are speed, strength, explosive power, agility and endurance and coordination with constant demand for high sports performance.

The purpose of the study was of assessment of physique characteristics and training pattern of Indian Universities Women Soccer Players.

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METHODOLOGY

126 soccer players were selected as a subject for this study. These footballers have represented their national teams and all Indian interuniversity matches the subject had more or less close homogeneity in their training habbits. They were undergoing regular training and living habbits. The age of subjects ranged from 18 to 28 years. Prior to the administration of tests, a meeting of all the subjects selected was called in each centre in which their coaches were all present, along with data collection team. In the meeting the procedure of the test was well explained to the subjects. All the subjects voluntarily agreed to cooperative throughout the investigation. The selected variables for the study were standing height, weight , fat percentage (biceps skin fold, triceps skin fold, sub scapular skin fold, super- illiac skin fold), leg length ,chest muscle girth, thigh muscle girth, biceps muscle girth, calf muscle girth, bone diameter, elbow epicondyle, knee epicondyle, shoulder width.

In order to the assess the training programmed of all Indian inter-university soccer players, a questionnaire consisting of six sample question was prepared and was named as questionnaire for assessment of training programmed .the question for assessment of training were like how many hours of soccer training per day.?How many session of soccer training you go in a day? How many month of soccer training you go in a week? etc. a soccer player has done in order to nurture the talent to come to this level. The responses received were analyzed and final shape to the questionnaire was given the basic of responses received.

DESCRIPTION ABOUT CRITERION TEST

In order to asses and evaluate the soccer training program of soccer players. The following question was included in the soccer training program questionnaire.

Question 1. How many hours of football training you go in a day?
1, 2, 3, 4, 5, 6, 7, 8, 9, 10

Question2. How many session of football training you go in a day?
1, 2, 3

Question3. How many days of football training you go in a day?
1, 2, 3, 4, 5, 6, 7

Question4. How many month of football training you go in a day?
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Question5. How many last year you have been undergoing training and playing of football (soccer)?
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15

Question 6.In what age you started your training?
10, 11, 12, 13, 14, 15, 16, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25

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RESULT AND DISCUSSION

Table-1

Descriptive Analysis

Team name	GND Univ.	BRAB Univ.	Kerala Univ.	MG Univ.	Mum Univ.	Goa Univ.	MK Univ.	Salem Univ.	Combined Mean
Weight	51.53	46.5	50.9	48.76	50.6	39.11	49.44	49.00	49.54
Height	158.59	157	157.7	155.5	158.3	156	154.1	154.4	156.44
Leg length	82.12	79.5	80.1	82.64	82.34	82.94	80.44	81.31	81.50
B.S.F.	10.18	8.38	8.8	5.94	6.8	7.16	5.56	6.43	7.38
T.S.F.	14.65	10.6	13.6	8.52	8.33	10.16	8.68	8.43	10.41
S.S.F.	11.88	12.2	13.6	9.70	14.7	13.11	12.31	13.44	12.71
S.S.F.	17.06	17.2	20.0	17.82	19.8	18.38	18.5	19.25	18.59
E.E.	5.37	4.98	5.04	4.86	5.14	5.21	4.82	5.01	5.07
K.E.	8.21	7.93	8.23	7.81	8.09	8.15	7.96	8.06	8.06
S.W.	32.94	34.6	33.6	33.23	34.6	32.22	33.25	34.37	33.54
B.M.G.	24.18	23	23.6	23.58	22.73	23.72	24	22.15	23.41
C.M.G.	32.04	30.8	33.4	31.52	31.93	32.03	31.81	47.91	54.67
T.M.G.	48.59	47.6	48.4	49.47	46.9	48.78	49.56	47.91	48.51
C.M.G.	82.65	79.2	81.2	79.88	81.7	80.11	80.44	78.59	80.44

In Table -1 It is evident from all the above analysis that the average body weight of GNDU Amritsar 51.53 kg is highest and average body weight of Goa university is lowest according to other universities. The average height of GNDU Amritsar 158.59 cm is highest and average height MK university is lowest 154.19.The average leg length of Goa university 82.940cm is higher and average leg length of BRAB Bihar 79.54 cm is lowest. The average biceps skin fold of GNDU Amritsar 10.18 mm is highest and the average of biceps skin fold of MK University 8.33 mm lowest the average of triceps skin fold of GNDU Amritsar 14.65 mm is highest and average of triceps skin fold of Mumbai University 8.33 mm is lowest. The average of sub scapula skin fold of Mumbai University 14.07 mm is highest and average of sub scapula of MGU Kottayam 9.70 is lowest.

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The average of super iliac skin fold of Kerala University is 20.06mm is the highest while that of GNDU Amritsar 17.06mm is lowest. The average of elbow epeicondyle of GNDU Amritsar is 05.37 cm. which is highest while that of M K University is 4.82 cm which is lowest. The average of knee extension of kerla university Is 8023cm. which is highest while that of MGU Kottayam is 7.81cm which is lowest. The average of shoulder depth of BRAB Bihar is 34.69cm which is the highest while that of GOA University is 32.22cm which is lowest. The average of biceps muscles girth of JNDU Amritsar 24.18cm is highest while that of Selam Ubni.22.15cm is lowest. The average of calf muscles girth of Selam University 47.91cm. is highest while that of BRAB Bihar 30.8cm is lowest. The average of thigh muscles girth of 49.56cm is highest while that of Mumbai uni.46.9 cm is lowest. The average of chest muscles girth of GNDU Amritsar 82.65 cm is highest what that of Selam University 78.59cm is lowest according the other universities.

The average of body weight, height, leg length, biceps skin fold, triceps skin fold, sub scapular skin fold, super-illiac skin fold, elbow epicondyle, , knee epicondyle, shoulder width, biceps muscle girth, chest muscle girth, thigh muscle girth, calf muscle girth,49.54kg, 156.44cm, 81.5cm, 7.38mm, 10.41mm, 12.71mm, 18.59mm, 5.07cm, 8.06cm, 33.54cm, 232.41cm, 54.67cm, 48.51cm, 80.44cm respectively.

The average of physique characteristics of every performer of Selam University is approximately equal to the combined mean of physique characteristics. This shows that, physique characteristics are also one of the major factors in winning a game.

Table-2
Combined Mean Scores of Training Program of Women Soccer Players of Indian Universities

	N=126	
Questions	**Mean**	**SD**
How many hours of soccer training go in a day?	1.18	0.72
How many session of training of a day?	1.66	0.2
How many days training go in a week?	5.65	0.53
How many months training go in a year?	8.23	1.47
For how many last years under going training and playing?	7.04	2.35
In what age started training?	15.06	2.21

In table no.2 it is evident from the above analysis that the all eight universities give four hours and eighteen minutes per day for soccer training which is higher. Average of sessions of training per day is approximate two for every team. All eight universities were training for about eight moth and twenty three days which is highest. All team have been doing training since last seven years which is highest. All universities started doing training at early age of 15 year on an average.

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CONCLUSION

The physique characteristics mainly height, body weight, leg length, muscles girth, body fat percentage, bone diameter is significantly distinct on soccer performance.

The top eight position of Indian universities soccer players undergoing for four hours and eighteen minutes in a day. Two session in a day, six day in a week, eight months and twenty three in a year, their training is age is seven year on an average and soccer played training age is fifteen years on an average.

It is further concluded that top eighteen players of Indian universities level are superior in training.

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COMPARATIVE EFFECT OF DIFFERENT VIGOROUS TRAINING PROGRAM ON THE HYPERTROPHY AND STRENGTH EXTENSORS

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ABSTRACT

The purpose of the study was to compare the two weight training programs on soccer players.60 physically active football game male players of L.N.I.P.E, Gwalior was voluntarily selected to participate in the study.The pre data was collected after two or three trial repetitions and then the pre data was collected. The cross sectional size of the muscles was measured with the gulick tape and the maximum strength was measured was measured with the recommended by the Brown and Weir (28). After ten weeks of training again post data was recorded. The groups was compared by the ANCOVA (analysis of covariance). To see the significant difference and the result was presented in the form of mean and standard deviation and no significant difference was found among the groups

Key Words: *- Cross Sectional Size, Maximum Strength.*

INTRODUCTION

Soccer is a game that requires a high level of stamina and physical strength. Physical strength allows a soccer player to run fast and jump high, and also helps with the physical contact within the game. Resistance training, also known as weight training, is the best way to increase physical strength for a soccer player. Resistance training includes a set of exercises performed for a number of repetitions.

The quadriceps, hamstrings and calf muscles are all involved in the process of running and kicking, so they are the key muscle groups that should be strengthened during a soccer resistance-training session. The core muscles around the abdomen and lower back should also be strengthened as part of a training regimen. Increasing physical strength in these muscle groups Soccer resistance-training exercises should simulate movements in a game. Traditional resistance-training exercises such as the bench press or squats was strengthen a muscle group, but dynamic exercises such as lunges was help soccer-specific strength training. EliteSoccerConditioning.com states that soccer resistance training should at time include high-intensity, high-weights and fast-moving repetitions.

Strength training has a powerful effect on muscle hypertrophy and strength. These adaptations are in response to factors such as degree of muscle tension, neural and hormonal adjustments. Muscle tension is a primary factor. As a consequence, high-intensity strength training (7580% of 1 RM) has been recommended to achieve both muscle hypertrophy and strength gains, because low to moderate strength training « 60% of 1 RM) does not seem to generate enough tension to produce gains of the same magnitude [25, 26, 27]. However, recent studies have shown that when low-intensity strength training (20 to 50% of 1 RM) is associated with vascular occlusion both hypertrophy and strength gains are similar to high-intensity training without vascular occlusion [20, 22]. It has been hypothesized that the hypoxia induced by vascular occlusion produces an additive effect on muscle hypertrophy and strength gains when associated to low-intensity strength training. A possible hypothesis for the additive effect of vascular occlusion is an enhancement in motor unit recruitment, as shown by greater EMG levels [22], which may produce greater strength gains.

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Sports-Fitness-Advisor.com recommends using 50 percent of one rep max when lifting in a soccer resistance-training program. Using lower weights and performing a higher number of fast-moving repetitions is also suggested. Lunges and shoulder presses are suggested resistance training exercise, as are self-weight-bearing exercises such as push-ups and dips.

Soccer strength training is crucial for athletes to prepare them for a strenuous 90 minute match. This physically demanding sport requires many physical attributes, including muscular strength. Attaining muscular strength can be achieved through a series of strength training exercises that involve building lean muscle mass. There are a number of soccer strength training exercises that can be done to build muscle.

Resistance training has a fundamental role in physical activity programs, and has been recommended by many major health organizations in order to increase general health and fitness (1-5). Two of the most common goals of resistance training are increases in muscle strength and hypertrophy with athletic, aesthetic or health purposes as in chronic conditions such as sarcopenia and AIDS (6, 7, 8, and 9). The results obtained with resistance training is influenced both by mechanical and metabolic stimuli. Mechanical stimuli is directly influenced by the amount of weight lifted in each repetition and by the number of repetitions performed per set, and is often believed to be one of the major determinants of the resistance training adaptations(10,11,12). However, some studies suggest that metabolic changes play an important role in gains of muscle size and strength, even when reduced work volume is performed (13, 14, 15, and 16). In the last 8 to 10 years, low-load training with blood flow restriction has attracted a lot of attention, both as a possible alternative to heavy resistance exercise in the rehabilitation setting and as a training method to increase muscle strength and size in healthy individuals. Several studies have shown that blood flow restriction by pressure cuffs in combination with low-intensity resistance exercise induces muscle mass increases at rates comparable with those seen with conventional strength training (20,21,22,23) and sometimes at even higher rates (18,24). In the studies that have included control groups that have trained at the same intensities and volumes but without cuff occlusion, the no occluded groups have generally made little if any gains in muscle size and strength (17, 18, 19, 22, and 23).

So in today's world of sport when every type of training is becoming scientific and advanced for the immediate and the pure results it is very necessary to invent some of this advancement in the training methods that is the purpose of the study to have a training method which really show quick and the actual results.

METHODOLOGY

60 physically active any ball game male players of L.N.I.P.E, Gwalior wibe voluntarily selected to participate in the study. Participants were not engage in any form of resistance training; however, they participated in regular training. They reported no lower extremity injury in the last six months. The subjects were instructed to keep the same level of physical activities throughout the study.

SELECTION OF VARIABLES

For the purpose of the study the following variables have been selected

Hypertrophy(Cross Sectional Size)
Strength Extensors of the legs

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COLLECTION OF DATA

The pre data was collected after two or three trial repetitions and then the pre data was collected. The size of muscles was measured with the gulick tape and the Strength Extensors was measured was measured with the recommended by the Brown and Weir (28). After ten weeks of training again post data was recorded.

STATISTICAL ANALYSIS

Mixed models having group (general weight training group, vascular occluded weight training group, and control group), time (pre-and posttest), and leg (occluded, general and control) as a fixed factor and subjects as a random factor, for both strength gains (1 RM) and quadriceps cross-sectional area. The group was compared by the ANCOVA (analysis of covariance). To see the significant difference and the result was presented in the form of mean and standard deviation

RESULTS

TABLE-1
Descriptive Statistics for Occlusion Training, General Weight Training, and Control Group on Leg Girth

Group	Mean	S.D	Estimated Mean	Std. Error	N
Occlusion Training	50.02	3.77	50.06[a]	.247	5
General Weight Training	48.30	2.88	49.10[a]	.250	5
Control Group	48.88	2.38	48.02[a]	.251	5
Total	49.06	2.93			15

Table No, 1 shows the descriptive statistics for occlusion training, general weight training, and control group on Leg Girth in which the mean of leg girth of general weight training group is 48.300 ± 2.88, mean of Leg Girth of occlusion training group is 50.02 ± 3.77 and mean of Leg Girth of control group is 48.88 ± 2.38**.**

TABLE-2
Tests of Between-Subjects Effects of Occlusion Training, General Weight Training, and Control Group on Leg Girth

Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Group	10.19	2	5.099	16.774	.000
Error	3.34	11	.304		
Total	36233.96	15			

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Table No. 2 shows the test between the Subjects Effects of Occlusion Training, General Weight Training, and Control Group on Leg Girth where p value 0.00 is less than 0.05 so there is a significant difference in which the mean square of the group is 5.099, F value is 16.774 and type III sum of squares 10.197.

TABLE-3
Pair wise comparison of Occlusion Training, General Weight Training, and Control Group on Leg Girth

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
Occlusion Training	General Weight Training	.962	.351	.058
	Control Group	2.038*	.352	.000
General Weight Training	Control Group	1.076*	.359	.037

Table No. 3 shows the pair wise comparison of the groups in which there was no significant difference found in the leg girth of the left leg among occlusion training and general weight training group but a significant difference was found among the occlusion training group and control group and general weight training group and control group.

TABLE-4
Descriptive Statistics for Occlusion Training, General Weight Training, and Control Group on Maximum Leg Strength

Group	Mean	Std. Deviation	Estimated Mean	Std. Error	N
Occlusion Training	50.86	3.70	50.23[a]	.464	5
General Weight Training	48.44	4.01	49.48[a]	.468	5
Control Group	47.84	4.14	47.42[a]	.462	5
Total	49.04	3.90			15

Table No, 4 shows the descriptive statistics for occlusion training, general weight training, and control group on Maximum Leg Strength in which the mean of Maximum Leg Strength of general weight training group is 48.44 ± 4.01, mean of Maximum Leg Strength of occlusion training group is 50.86 ± 3.70 and mean of Maximum Leg Strength of control group is 47.84 ± 4.14.

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TABLE-5
Tests of Between-Subjects Effects of Occlusion Training, General Weight Training, and Control Group on Maximum Leg Strength

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Group	21.198	2	10.599	9.971	.003
Error	11.692	11	1.063		
Total	36297.270	15			

Table No. 5 shows the test between the Subjects Effects of Occlusion Training, General Weight Training, and Control Group on maximum leg strength where p value 0.03 is less than 0.05 so there is a significant difference in which the mean square of the group is 10.599, F value is 9.971 and type III sum of squares 21.198.

TABLE-6
Pair wise comparison of Occlusion Training, General Weight Training, and Control Group on Leg Girth

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
Occlusion Training	General Weight Training	.756	.665	.839
	Control Group	2.815*	.652	.004
General Weight Training	Control Group	2.059*	.662	.030

Table No. 6 shows the pair wise comparison of the groups in which there was no significant difference found in the maximum leg strength among occlusion training and general weight training group but a significant difference was found among the occlusion training group and control group and general weight training group and control group.

DISCUSSION AND CONCLUSION

From the findings it is clearly indicates that there was significant Occlusion training and General weight Training. The reason for having the significant effect on the physical and physiological variables of the experimental group was that the program was designed in such a way that probably motivated the individuals of the experimental group to do their best.
In case of physiological variable Muscular Hypertrophy, the results of the study reveals that there was a significant improvement found. This is supported by more recent studies which consistently show that performing resistance training with partial vascular occlusion and low loads results in large gains in strength, muscular size and muscle fiber activation (Takarada et al., 2001; Takarada et al., 2004; Sumide et al., 2007; Leonneke & Pujol, 2009).

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Yet, these studies differed from this current study in that they all examined training protocols which isolated muscles groups of a single joint and trained for, and measured signals of hypertrophy. This present study however, examined whether partial vascular occlusion would be effective when paired with training aimed at increasing maximal power output during a task that involved a large amount of muscle mass across multiple muscle groups. It is well established that higher training volumes are necessary to greatly increase muscle size (Sale, 1992; Baechle & Earle, 2008). Due to these factors, the improvements are likely not due to the commonly measured signals associated with hypertrophy, that were measured in previous studies examining vascular occlusion during resistance training. It is more likely that this training enhanced the functioning of the neuro-muscular system.

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A COMPARATIVE STUDY OF SPEED BETWEEN TENNIS AND BADMINTON PLAYERS

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ABSTRACT
The aim of the present study was to compare of speed between Tennis and Badminton players. To achieve the purpose of the study total 40 players (20 Tennis and 20 Badminton) were selected as subject at random from BHU Varanasi their age ranged between 18-23 years. Subjects were male students only. Speed was selected as variable. 30 dash in 1/10of the second was used for measure the speed. To compare the speed of both players t-test was used as the statistical technique. The level of significance was fixed at 0.05 level of confident.

Key Words: *Speed*

INTRODUCTION

Physical fitness is per-requisite of abilities to perform any motor task in day to day life as well as in sports and games. Since, speed is one of the most valuable/element of the physical fitness, so we can't deny the importance of speed in day to day life as well as game and sports. In other words we can say that it has been great significant in human lives. Different groups of people have different levels of speed.

Speed is movement specific. The same individual may be fast in some movements and slow in others. There is no co-relation between speed of leg movements and arm movements and very little co-relation in movement that require different co-ordination (Derives 1980).

PURPOSE OF THE STUDY

The purpose of the study was to compare of speed between Tennis and Badminton players.

MATERIALS AND METHODS

To achieve the purpose of the study total 40 players (20 Tennis and 20 Badminton) were selected as subject at random from BHU Varanasi their age ranged between 18-23 years. Subjects were male students only.

SELECTION OF VARIABLES

Speed was selected as variable.

CRITERION MEASURE

30 dash in 1/10of the second was used for measure the speed.

STATISTICAL TECHNIQUE

To compare the speed of both players t-test was used as the statistical technique. The level of significance was fixed at 0.05 level of confident.

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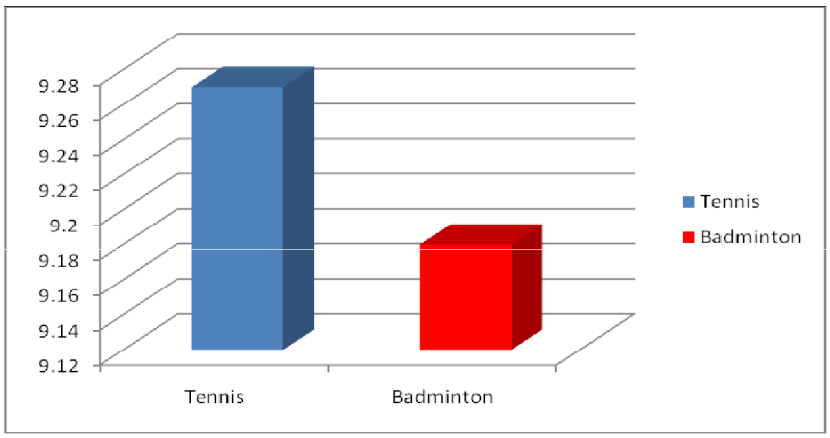
Table 1

Variable	Tennis		Badminton		t-value
	Mean	SD	Mean	SD	3.11
Speed	9.27	2.13	9.18	2.11	

~~Sig,0.05 ,3.23 (38)~~

GRAPHICAL REPRESENTATION OF SPEED BETWEEN TENNIS AND BADMINTON PLAYERS



RESULT

Table I and Table II indicate that the speed between Tennis and Badminton players. No significant different at t value 3.11(df 38) at 0.05 level of confident which is more than require value.

CONCLUSION

On the basis of result it may be concluded that the tennis and badminton players was equally in relation to speed.

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COMPARISON OF MENTAL TOUGHNESS OF INTER UNIVERSITY JUDO AND TAEKWONDO PLAYERS

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ABSTRACT
The aim of the study was to find out the comparison of mental toughness of inter university judo and taekwondo players. Subjects were selected from the Judo and Taekwondo players who had participated in inter university championship held at Vanasthali Vidyapith and shanti niketan. Only male Judo and Taekwondo players were selected randomly. The age of players ranged between 19-25 years. Mental toughness was selected as a variable. To measures the mental toughness level of Inter university judo and Taekwondo championship, mental toughness questionnaire developed by Alan Goldberg was used. Sampled respondents were administered *mental toughness questionnaire* and their responses were scored and tabulated for statistical analysis. *Independent T-test was used to verify difference. Judo players are more mentally tough in comparison to taekwondo players.*

Keywords: *Mental Toughness*

INTRODUCTION

Mental toughness is a collection of attributes that allow a person to persevere through difficult circumstances (such as difficult training or difficult competitive situations in games) and emerge without losing confidence. In recent decades, the term has been commonly used by coaches, sport psychologists, sport commentators, and business leaders.

Mental toughness is a controversial term, in that many people use the term liberally to refer to any set of positive attributes that helps a person to cope with difficult situations. Coaches and sport commentators freely use the term mental toughness to describe the mental state of athletes who persevere through difficult sport circumstances to succeed. For example, it is often simply applied as a default explanation for any victory, which is highly problematic as an attribution. Only within the past ten years has scientific research attempted a formal definition of mental toughness as a psychological construct and criticisms about the lack of specificity of this umbrella term abound. For example, Moran (2012) [1] states that considerable caution is required in attempting to draw conclusions about the nature, characteristics, determinants and development of mental toughness in sport because of the theoretical nature of the definitions, which owe more to anecdotal plausibility than to empirical research.

Dr. Jim Loehr of the Human Performance Institute, in his book The New Toughness Training for Sports, defined mental toughness as "the ability to consistently perform towards the upper range of your talent and skill regardless of competitive circumstances.“

Psychologists and sport psychologists have attempted to form a definition and a stronger conceptualization of mental toughness as a psychological construct. In particular, three research teams have produced both a definition and a construct definition for mental toughness.

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SELECTION OF SUBJECTS

Subjects were selected from the (25) Judo and (25) Taekwondo players who had participated in inter university championship held atVanasthali Vidyapith and Shanti niketan university. Only male Judo and Taekwondo players were selected randomly. The age of players ranged between 19-25 years.

SELECTION OF VARIABLE

Mental toughness was selected as a variable.

CRITERION MEASURE

To measures the mental toughness level of Inter university judo and Taekwondo championship, mental toughness questionnaire developed by Alan Goldberg was used.

This questionnaire consists of 30-items having 2 response categories. Higher score on this scale indicates higher mental toughness quality and lower score on this scale indicates lower mental toughness quality.

COLLECTION OF DATA

Sampled respondents were administered mental toughness questionnaire and their responses were scored and tabulated for statistical analysis. Each respondent was approached individually during their rest hours. Before administering the questionnaire respondents had been given full instruction for completing the questionnaire. After collection of data and scoring of responses, a master chart was prepared for statistical analysis.

STATISTICAL ANALYSIS

Independent T-test was used to verify difference between the mental toughness scores of inter university Judo and taekwondo players.

RESULTS AND DISCUSSION

To compare means mental toughness scores of judo and Taekwondo inter university players, t-test statistical technique was used and results were obtained as presented in table- 1.

Table -1
Comparison of the Mean of Mental Toughness Scores Inter University of Judo and Taekwondo Players

Variable	Group	N	Mean	S.D	t-value
Mental Toughness	Judo	25	16.22	3.14	2.48
	Taekwondo	25	14.10	3.08	

Sig0.05, 48, 2.29

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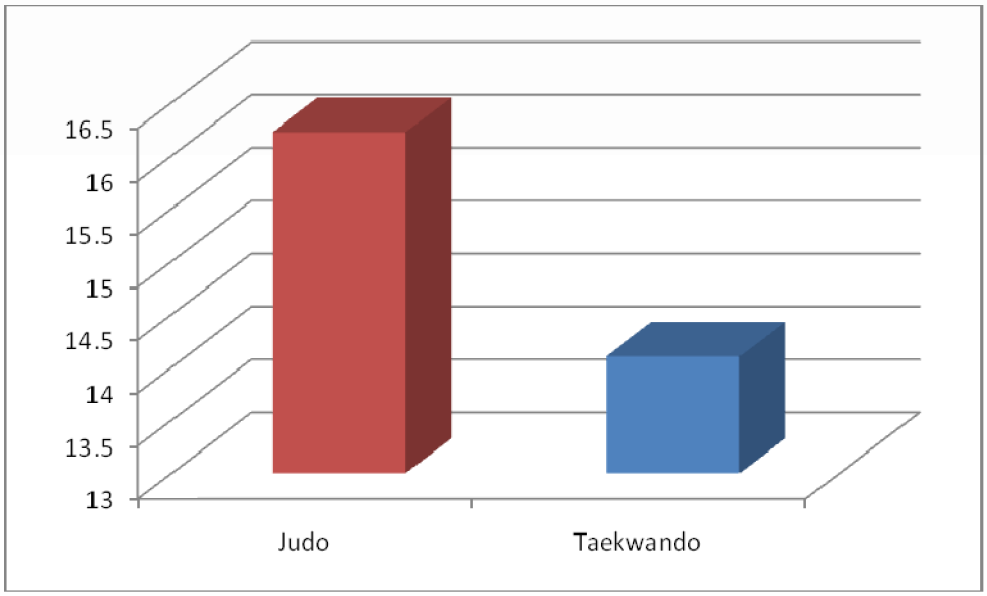
Graph - 1
Graphical Representation of Mental Toughness of Inter University Judo Taekwondo Players



From table 1 it is obvious that the mean of mental toughness score of Judo players (M =16.22, SD=3.14) was significantly higher than those of Taekwondo players (M=14.10, SD=3.08) as the obtained t-ratio (t= 2.29; df= 48) was significant beyond 0.05 level of confidence. It reflects that the mean scores of the mental toughness of judo and Taekwondo players differed significantly.

CONCLUSIONS

On the basis of result it may be concluded that the judo players more mentally tough in comparison to taekwondo players.

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COMPARISON OF SELECTED PHYSICAL FITNESS VARIABLES OF OFFENSIVE AND DEFENSIVE KABADDI MALE PLAYERS OF UNIVERSITY LEVEL

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INTRODUCTION

Technology covers every aspect of life and sports is no exception to it sports science has enabled modern youth to develop physical capacities beyond anything imagined sports have become highly competitive and records are being broken with greater rapidity. Now a day the nature and trend of sports are easily realized by one and all. Sports are accepted as a culture. It is developing, enjoyable and at the same time it's highly competitive. There is constant endeavor to better the records set up and to achieve higher standards of performance. As a result today's sports demands optimum physical fitness and highest degree of performance.

Different sports activities have varied level of physical fitness due to specific nature of sports movements. More ever different activities make different demands upon organism for the physical system of the body to be fit they must function enough to support the specific activity that the individual is performing (Morehouse & miller 1976).

Kabaddi is one of the most popular sports and traditional forms of play that the country has evolved for its youth Kabaddi is the combination of offensive and defensive players and due to the advancement of specific methods, Techniques and tactics i.e., every players is required to posses certain specific physical fitness qualities and without which it may be impossible to play efficiently.

It forms an important part of physical education programme in schools and colleges as coaches and physical education teachers follow different methods for selecting players for better performance is games and sports such as Kabaddi.

METHODOLOGY

The purpose of this study was to compare selected physical fitness variables of offensive and defensive Kabaddi players of University level. The subject was twenty two male players from different colleges of Veer Bahadur Singh Purvanchal University, Jaunpur. The age of the subject ranged from 18 to 25 years. The subject were divided into two groups i.e. offensive and defensive each groups consisting of eleven subjects. The selected physical fitness variables i.e. muscular strength (Pull-ups), abdominal strength, (sit-ups) explosive strength, (standing broad jump), speed (50 yard dash), Agility (4x10 yard shuttle run) and cardio-vascular endurance (600 yard run-walk) were measured of both the groups. The data collected on the entire test were statistically analyzed by using't' ratio at 0.05 level of confidence.

RESULT AND DISCUSSION

Reliability coefficient of physical fitness variables are presented in Table-1, and statistical analysis of data collected on selected physical fitness variable is presented in Table-2.

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Table-1
Reliability Co-efficient of Physical Fitness Variables

Sl.No.	Variables	Co-efficient of correlation
1.	Abdominal strength (sit-ups)	0.91
2.	Muscular strength (Pull-ups)	0.95
3.	Explosive strength (standing broad jump)	0.96
4.	Speed (50 yard dash)	0.93
5.	Agility (4x10yard shuttle Run)	0.92
6.	Cardio Vascular endurance (600 yard Run-walk	0.91

Table-2
Significance Difference of Mean and Standard Deviation in Selected Physical Fitness variables between Offensive and Defensive Kabaddi Players

Variables	Groups	Mean	S.D.	"t" ratio
Abdominal strength (sit-ups)	Offensive	32.69	6.45	3.26*
	Defensive	36.70	7.33	
Muscular strength (Pull-ups)	Offensive	8.25	2.40	2.45*
	Defensive	9.15	2490	
Explosive strength (standing Broad Jump)	Offensive	228.02	16.15	3.81*
	Defensive	233.96	16.81	
Speed (50 yard dash)	Offensive	6.61	0.40	0.07
	Defensive	6.79	0.37	
Agility (4x10 yard shuttle Run	Offensive	9.12	0.28	0.32
	Defensive	9.38	0.34	
C.V. Endurance (600 yard Run0walk)	Offensive	104.85	10.33	0.06
	Defensive	107.42	7.14	

*"t" value to be needed at 0.05 level of confidence with 21 degree of freedom is 2.08

It is inferred from table-2 that there is no significant difference in selected Physical fitness variables (speed, Agility and cardiovascular endurance) between kabaddi offensive and defensive players was found at 0.05 level of confidence with 21 degree of freedom. The't' value needed for significance is 2.08 and as the obtained values are less than the needed one. But there was significant difference was found in muscular strength, abdominal strength and explosive strength between both the groups at 0.05 level of confidence with 21 degree of freedom. The "t" value needed for significance is 2.08 and as the obtained value is more than the needed value i.e. 3.26, 2.45 and 3.81.

Offensive group has less mean value in muscular strength abdominal strength, and explosive strength offensive group has less mean value in comparison to defensive group mean value. This shows offensive players has less requirement of muscular strength, abdominal strength and explosive strength comparison to defensive Kabaddi players.

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Offensive group has less mean value in muscular strength abdominal strength, and explosive strength offensive group has less mean value in comparison to defensive group mean value. This shows offensive players has less requirement of muscular strength, abdominal strength and explosive strength comparison to defensive Kabaddi players.

CONCLUSION

With in the limitations of the study and procedure followed the following conclusion were arrived at -

That there was significant difference between Kabaddi offensive and defensive players in three of the selected physical fitness variables i.e. muscular strength, abdominal strength and explosive strength, Result shows that Kabaddi defensive players having better muscular strength. Abdominal strength and explosive strength than the offensive players. But no significant difference was found in Agility, speed and cardiovascular Endurance between Kabaddi offensive and defensive group.

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RELATIONSHIP BETWEEN SELECTED ANTHROPOMETRIC VARIABLES AND EXPLOSIVE STRENGTH OF MALE VOLLEYBALL PLAYERS

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ABSTRACT

The study has been aimed to identify the relationship between selected anthropometry and explosive strength and comparison of the same variables between District and sub-Division level Volleyball players. Forty Six District and sub-Division volleyball players having mean age of 22 years were randomly selected from four clubs of three Districts of Uttar Pradesh. Among the anthropometric measurement Lower limb length, upper limb length, and circumferences of chest, thigh, calf, and bicep were measured. Leg and arm explosive strength were measured by vertical jump and medicine ball throw test respectively. After analyzing the data it was found that the District players were superior to sub-Divisional players in explosive strength. The limb length may be considered as one of the determining factors of explosive strength.

INTRODUCTION

We often overlook body measurement/dimension during selection of players or same how neglect the inevitability of the size and shape of the body or its parts while expecting a better attainment in sports performance. A too many sports activities are facilitated by the structure of the athlete irrespective of abilities like skills, techniques and anticipation etc. and so on. Yet there are many sports activities which are not dependent directly upon the structure. Explosive strength is the ability of the sportsman to overcome certain resistance by the muscles with high speed. Explosive strength is a complex conditional ability and is combination of strength and speed. A proportion in range of motion in relation to length of bones and joints is also an important factor in explosive strength. Explosive strength plays a vital role in volleyball. Especially by explosive strength for jumping during spike and block and arm explosive strength during service, block and spike are very important. Both these are required equally during fielding.

The study has been aimed to identify the relationship between selected anthropometric variables and explosive strength, and to compare the status of same variables between District and sub-Division level volleyball players.

METHODOLOGY

Forty Six volleyball players were randomly selected from four standard clubs or team belonging to three different Districts of Uttar Pradesh. Out of 46 subjects 23 had participated in inter District and remaining 23 had participated in Inter-sub Division volleyball competitions. The age of the subjects were 18 through 26 years. Lower limb length was measured from the difference between sitting height and standing height upper limb length was measured from acromion process to the tip of the third finger.

Chest circumference was measured at nipple level and at the end of normal expiration. Thigh and calf circumferences were measured at the point of maximal circumference. Bicep circumference was measured twice, greatest girth when arm is maximally flexed and greatest girth when arm is fully intended. The average was recorded as bicep circumference.

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The arm explosive strength was measured by medicine ball (3 kg) throw test. The longest distance was recorded from three trials. The leg explosive strength was measured by vertical jump test. The best jump was recorded among three trials.

FINDINGS

In order to compare the anthropometry and explosive strength between the groups of District and sub-Division players the significance of variance of group means were found at .01 level of confidence in lower limb length and .05 level of confidence in vertical jump and medicine ball throw. In case of other variables the difference were not significant (vide table-1)

Table -1
t-Ratio Between District and Sub-Divisional Volleyball Players

Variables	Mean (distt.)	Mean(sub-div.)	SeD.	t-ratio
lower limb length (cm)	85.34	81.73	1.30	2.77**
Upper limb length (cm)	77.50	76.21	1.14	1.12
Chest circumference (cm)	82.32	82.52	1.42	0.515
Thigh circumference (cm)	48.07	47.14	1.21	0.77
Calf circumference (cm)	32.87	32.20	0.6	1.02
Bicep circumference (cm)	25.91	25.15	0.87	0.87
Vertical jump (cm)	54.89	49.43	2.58	2.12*
Medicine ball throw (mt.)	11.28	09.91	0.67	2.04*

** significant at .01, *significant at .05 level of confidence, Degree of reedom (N-2) = 44.

The co-efficient of correlation between the variables of vertical jump and lower limb length was highly significant at .01 level of confidence and the correlation between vertical jump and medicine ball throw was significant at 0.5 level of confidence. There was also a positive, but insignificant correlation found between the variables of vertical jump and thigh and calf circumference (vide table -2)

Table-2
The Coefficient of Correlation of Vertical Jump with Lower Limb Length, Medicine Ball Throw and Circumference of Thigh and Calf

Variables	Lower limb length	Thigh circumference	Calf circumference	Medicine ball throw
Vertical jump	0.64**	0.21	0.17	.344*

** Significance of .01, * Significance at 0.05 level of confidence, degree of freedom (N-2) =44

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The coefficient of correlation between the variables of medicine ball throw with upper limb length and chest circumference was highly positive and significant at .01 level of confidence. There was also positive correlation between the variables of medicine ball throw with bicep circumference but insignificant (vide table-3)

Table-3
The Coefficient of Correlation of Medicine Ball Throw with Upper Limb Length, Bicep and Chest Circumference

Variables	Upper limb length	Bicep Circumference	Chest Circumference
Medicine ball throw	0.71**	0.07	0.47**

** Significance of .01 level of confidence, degree of freedom (N-2) = 44.

DISCUSSION

The District level players are superior to sub-Divisional players in vertical jump. The relationship between lower limb length and vertical jump was significant (=.64), a significant difference in lower limb length between District and sub-Division players was found (vide table-1). Hence it may be inferred that the District level players were better than sub-Divisional players in vertical jump due to greater limb length. The relationship between leg explosive strength and arm explosive has indicated their inter dependence.

The research work of Brown et al. (4) and cluthetal Shows in their study that vertical jump can be improved by developing muscular strength without sacrificing strength through training. In this study also the district players may be better in vertical jump due to greater training age.
The District level players are superior in medicine ball throw to sub-Divisional players. The relationship between appear limb length and medicine ball throw was significant (= .71) and the mean difference of arm length(not significant) between district and sub-divisional players are better in arm explosive strength due to greater arm length.

The relationship between chest circumference and medicine fall throw was highly significant (= .47). The significant result of arm explosive strength may have been influenced by the pectoralis muscles. The pectoralis muscle commonly known as throwers muscles and the source of explosive strength.

As quoted from david lamb 3 Increase the arm length or leg length would be of no use in improving power unless that strength somehow enable to movement to be completed rapidly, from the findings of this study no significant relation between girth and explosive strength was found. This re-establishes the fact quoted above of david lamb.

It may therefore be concluded that.
1.The limb length is one of the determining factors in exerting explosive strength.
2.A continuous training may help in the improvement of explosive strength of arm and leg.

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COMPARATIVE STUDY OF PHYSICAL FITNESS BETWEEN THE PLAYERS OF INDIVIDUAL AND TEAM

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ABSTRACT

The purpose of the study was to compare the selected Physical variables namely; abdominal strength, agility, explosive strength, speed, trunk strength and speed endurance between under14 girls in individual games and team games. The study was undertaken with another objective to judge the fitness level of under 14 girls participating in individual games and team games. The subject of the study were randomly selected from state of Uttar Pradesh, who were regular players and were engaged in regular training for some time in different districts .The subjects of this study were aspirants for admission in different sports hostels governed by the state government under various sports schemes. At the time of procuring data subjects were giving trials for proving their physical fitness standard required for the purpose of admission in different sports hostels. Criterion measure for this study were different test items such as; situps,6x10mtr run, standing broad jump,100mtr dash, medicine ball throw and 800mtr run, administered to measure their level of fitness . To find out Significant difference between two groups participating in individual games and team games, were analysed with the application of t-test. The analysis of data revealed significant difference between the players (girls under 14) participating in individual games and team games. Further the individual games girls seems to posses higher level of fitness then that of team game players.

Keywords: *Abdominal strength, agility, explosive strength, speed, trunk strength and speed endurance.*

INTRODUCTION

Participation in a regular exercise program has been shown to be an effective intervention to increase a number of physical fitness components (Grant et al, 1992; and Douris et al, 2004). Fitness program integrated with exercise physiology theory and exercise activity enhances aerobic power, muscular endurance and fitness-related knowledge (Perry et al, 2002). Active individuals have largely conserved the high level fitness (Rahmani-Nia and Hodjati, 2005), and if the exercise programs were simple and practical, students and sedentary people would have been more active. Physical fitness level has also been shown to be closely associated with mortality and functional limitations in both middle aged and older people (Miilonpalo et al, 1997; Hung,1998; Happane et as,2000; and Okano et al,2003). Higher level of physical fitness results in a low risk of both mortality (Sawada et ax,1998) and functional limitations (Hung et al, 1998). Risk factors related to a sedentary lifestyle include increased fat deposits and weight gain and decreased functional aerobic capacity, bone density and mass (ACSM's, 2001).

The purpose of this study was to assess and compare the physical fitness level between male students participating in individual games and team games who were under 14 years of age.

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METHODOLOGY

The subjects of the study were randomly selected from the state of Utter Pradesh, were aspirant for admission in different sports hostels. All the subjects were under 14 years of age. The subjects of this study were undergoing the training in different District of Uttar Pradesh since last one year. Necessary data were collected for abdominal strength, agility, explosive strength, speed, trunk strength and speed endurance with the help of different test items such as; sit-ups, 6x10mtr run, standing broad jump, 100mtr dash, medicine ball throw and 800mtr run. Comparison of score was completed by descriptive statistical techniques and to find out the significant difference between two groups the level of significant were set at 0.05 level.

Results

TABLE-1
Comparison of Fitness Level in Abdominal Strength between Girls of Individual Games and Team Games

Games	Mean	S.D	T-Value
Team games	15.85	5.057	14.196*
Individual games	22.2	2.942	

*Significant at .05 level, T-Value required to be significant at 78 df = 2.00

It is evident from table 1 that significant difference was found between the mean scores of Individual and Team game scores in relation to abdominal strength since T-Ratio was found 14.196 which was higher value than the required value at 0.05 level of significance

TABLE-2
Comparison of Fitness Level in Speed for Speed between Girls of Individual Games and Team Games

Games	Mean	S.D	T-Value
Team games	15.58	1.540	2.831*
Individual games	14.64	1.330	

* Significant at .05 level, T-Value required to be significant at 78 df = 2.00

It is evident from table 3 that significant difference was found between the mean scores of Individual and Team game scores in relation to 10*6mtr run since T-Ratio was found 3.071 which was higher value than the required value at .05 level of significance.

TABLE-3
Comparisons of fitness level in Medicine ball throw for Trunk Strength between girls of Individual games and Team games

Games	Mean	S.D	T-Value
Team games	16.23	.828	3.071*
Individual games	15.59	.909	

* Significant at .05 level, T-Value required to be significant at 78 df = 2.00

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It is evident from table 3 that significant difference was found between the mean scores of Individual and Team game scores in relation to 10*6mtr run since T-Ratio was found 3.071 which was higher value than the required value at .05 level of significance.

TABLE-4
Comparisons of fitness level in Medicine ball throw for Trunk Strength between girls of Individual games and Team games

Games	Mean	S.D	T-Value
Team games	3.7215	.923	2.49*
Individual games	4.2195	.677	

* Significant at .05 level, T-Value required to be significant at 78 df = 2.00

It is evident from table 4 that significant difference was found between the mean scores of Individual and Team game scores in relation to Medcine ball throw since T-Ratio was found 2.49 which was higher value than the required value at 0.05 level of significance

TABLE-5
Comparison of Fitness Level in Speed Endurance between Girls of Individual Games and Team Games

Games	Mean	S.D	T-Value
Team games	2.922	.487	2.972*
Individual games	2.503	.306	

* Significant at .05 level, T-Value required to be significant at 78 df = 2.00

It is evident from table 5 that significant difference was found between the mean scores of Individual and Team game scores in relation to800met run since T-Ratio was found 2.972 which was higher value than the required value at 0.05 level of significance

TABLE-6
Comparison of Fitness Level in Explosive Strength between Girls of Individual Games and Team Games

Games	Mean	S.D	T-Value
Team games	2.032	.232	2.42*
Individual games	2.252	.195	

* Significant at .05 level, T-Value required to be significant at 78 df = 2.00

It is evident from table 6 that significant difference was found between the mean scores of Individual and Team game scores in relation to standing broad jump since T-Ratio was found 2.42 which was higher value than the required value at 0.05 level of significance.

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DISCUSSION

The result of the study has revealed that there was a significant difference between the fitness level of girls under 14 years participating in individual games and team games. In all the motor abilities (abdominal strength, agility, explosive strength, speed, trunk strength and speed endurance) that were compared between two groups were found to be significant. The result of this study is on the line of expected hope and more as per the research completed by different authors **(Watanabe K.)**. The girls under 14 years of age participating in individual games have shown good physical fitness then that to the girls participating in team games. In abdominal strength the t.value being 14.196 proved to be most significant as the tabulated value required to be 2 at 78 degree of freedom. All other fitness factors were also significant at 0.05 levels of confidence and individual games girls shown good physical fitness than that to team game players. The result of the study may be attributed to the fact that the girls participating in individual games might have given more stress to their physical fitness and may be much conscious about their fitness in compared to their counterpart. The result of the study has also shown the seriousness towards fitness level by girls under- 14 participating in individual games as compared to team games girls.

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A STUDY OF LEG FREQUENCY OF INDIAN SPRINTERS IN COMPARISON OF WORLD CLASS SPRINTER

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ABSTRACT
The present study has been aimed to compare leg frequency between Indian sprinters and world class athlete (Usain Bolt). To conduct the study 60 sprinters (age range 18 to 28) has been selected from the interuniversity athletics tournament, which represented different state of India. The data has been collected through analysis the videos recording of each selected heat, by H.D. Video camera and H.D. Video of 100 meters starting word record sprint of Usain Bolt was downloaded from the internet.The data has been extruded by Tracker video motion analysis software; by tracking the time duration of the first five steps of all sprinters and Usain Bolt, after starting of 100 meters. For comparison the extracted data one sample t-test has been used. After analysis the data it was assumed that the frequency time of Indian sprinter (mean=1. 5645 second) are significantly greater than Usain Bolt's frequency time 1.42 second at 0.01 significant levels, hence it was concluded that, Usain Bolt has a faster frequency than Indian sprinters.

Key word: - *Motion analysis, Leg Frequency*

INTRODUCTION

Indian sprinter is still struggling to get their space on world athletics tournaments, while new records are continuously updated by other foreign sprinter. In the field of 100 meter sprint U.S.A. runners are dominated for few decades, now the crown of world record has been secured by Usain Bolt of Jamaica with flying time **9.58 Sec.** and Indian sprinters are stuck on the hurdle of 10.33 sec. To find out the perfect solution, it has needed to analyze every movement deeply and have to extend the scope of biomechanical factors. By this present study one of the important factor, i.e. Leg -Frequency of 100 meters Indian sprinters has been generalized. Extruding the origin of the problem through video motion analysis of Indian sprinters, might help to increase the performance of the athletes and coaches to take steps according to right direction of coaching and training.

METHODOLOGY

60 male sprinters (age group 18 year to 28 year) who represented different state of India, has been randomly selected during 100 meter qualifying rounds of the Inter University Athletic tournament December 2015. Only fastest sprinters of alternate heat, Heat – 2, Heat – 4, Heat – 6, Heat – 8, Heat – 10, Heat – 12, Heat –14, Heat – 16, Heat –18, Heat – 20, Heat – 22, Heat – 24, were selected for analytical purpose. Starts of every selected heat have been recorded, through H.D. Video Camera with depicts the smoke of starting gun for calculation of the actual time of start.
H.D. Video Recording of World Record Heat of Usain Bolt has been downloaded from the internet. Tracker Video Motion Analysis software has been used to analyzed the all sprinting videos and for the data extraction process.

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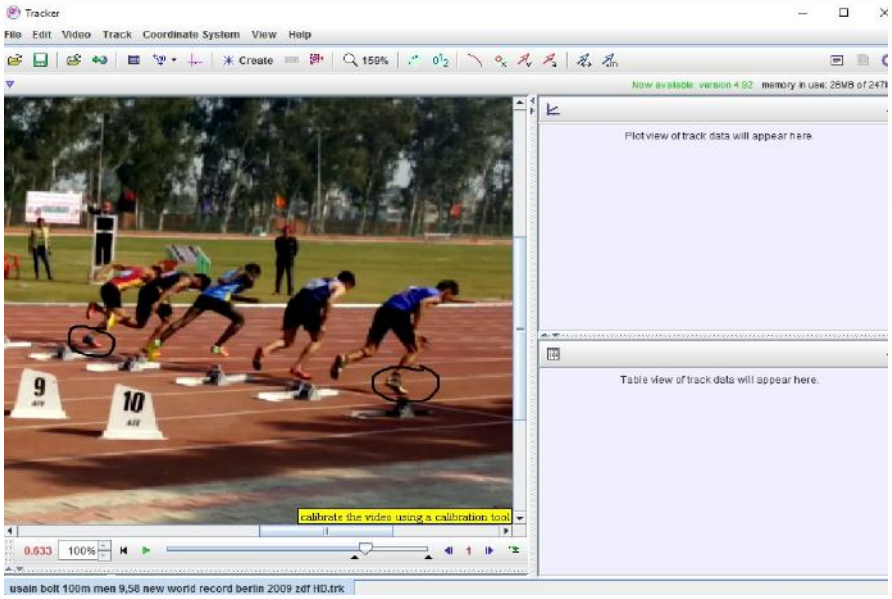
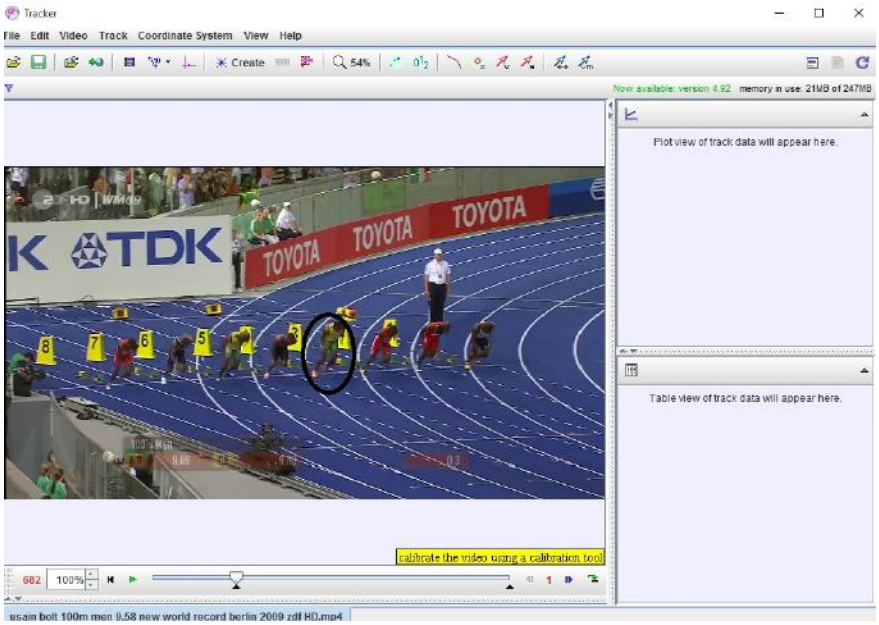
Image 1



Analyzed Clip of Indian Sprinter

Image 2



Analyzed clip of World record Heat of Usain Bolt

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The extruded frequency time of Indian sprinters was deducted by sound travel speed (343 m / sec. or 3.43 meter/ micro second) for each distance of each athlete, which is varied by the distance from the starting gun.

Afterward data has been tabulated and analyzed by appropriate software.

RESULT AND DISCUSSION

In the present study there was a significance difference found between the leg frequency time of Indian sprinters and Usain Bolt at 0.01, level of significance.

The leg-frequency (first five steps) timing of Indian sprinter (Mean = 1.5645 second) is greater than Usain Bolt leg-frequency(first five steps) time 1.42 second, hence Usain Bolt has more faster leg frequency in comparison with Indian sprinters.

Table – 1: Comparison of Leg-frequency between Indian sprinters and Usain Bolt

One-Sample t-Test

	Test Value = 1.42			
	t	df	Sig.	Mean Difference
Leg_frequency	11.485	59	.001	.144583

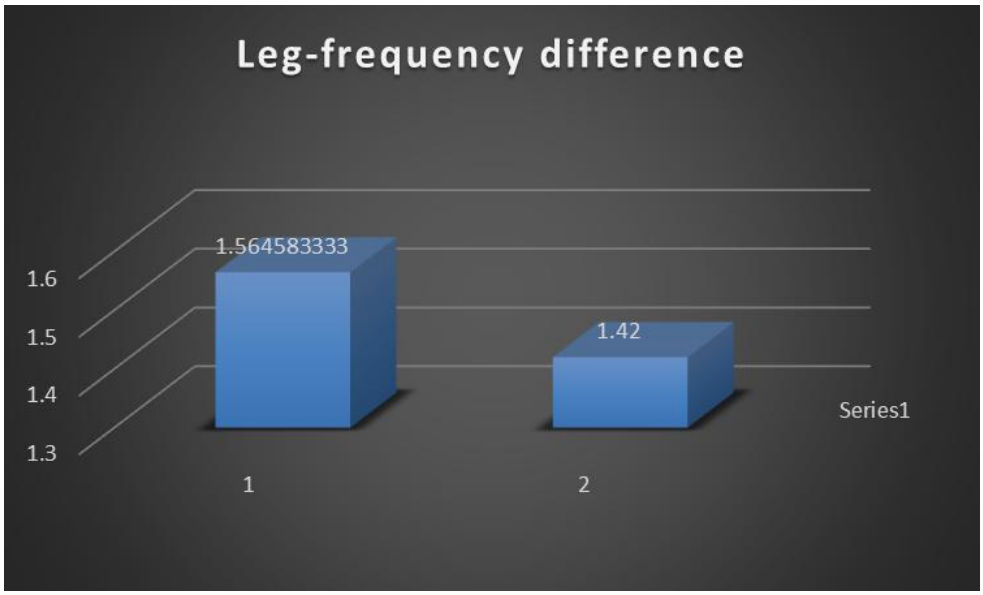

Fig. 1- Comparison of Leg-frequency timing between- 1. Indian sprinters, and 2.Usain Bolt

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CONCLUSION

From the basis of the finding, it has been concluded that the Indian sprinters Leg-frequency also an affecting factor in100 meter start, which can be increase the performance in world class athletic tournaments. Coaches have to bear in mind the factor of Leg-frequency while selection the sprinter athlete and during the practice session. The difference between the timing of the first five steps between Indian sprinters and Usain Bolt is 0.1445 second, which can create major difference.

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COMPARISON OF PHYSICAL AND PHYSIOLOGICAL VARIABLES IN ATHLETES, PARTICIPATING IN SPRINTING EVENTS

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ABSTRACT

The main aim of the study was the comparison of physical and physiological variables in athletes, participating in sprinting events. To achieve this aim, a total of 20 male All India Inter University level players with age ranging from 17 to 25 years were randomly selected from Lakshmibai National Institute of Physical Education, Gwalior, Madhya Pradesh. All the subjects have been informed about the objective of the study. It was hypothesized that there will be significant difference in the physical and physiological variables in athletes, participating in sprinting events. The following physical parameters such as speed, Explosive Leg Strength, Grip Strength, Back Strength and Shoulder Strength and physiological parameters such as heat rate, blood pressure, vital capacity and Peak Expiratory Flow Rate were selected.. To find out the difference independent t-test was used and to test the hypothesis, the level of significance was set at 0.05. Findings of the study revealed that in all the parameters there is no difference between the 100 meter sprinters and 400 meter sprinters Accept in speed there was a significant difference in the speed of the 100 meter sprinters and 400 meters. The Average time of 100 meter sprinters is less than the 400 meter sprinters.

KEY WORDS: *Sprinter, Speed, Explosive Strength, Back Strength, Shoulder Strength, Heart Rate, Blood Pressure and Vital Capacity.*

INTRODUCTION

In athletics and track and field, sprints (or dashes) are races over short distances. At the professional level, sprinters begin the race by assuming a crouching position in the starting blocks before leaning forward and gradually moving into an upright position as the race progresses and momentum is gained. The set position differs depending on the start. Body alignment is of key importance in producing the optimal amount of force. Ideally the athlete should begin in a 4-point stance and push off using both legs for maximum force production. Athletes remain in the same lane on the running track throughout all sprinting events, with the sole exception of the 400 m indoors. Races up to 100 m are largely focused upon acceleration to an athlete's maximum speed. All sprints beyond this distance increasingly incorporate an element of endurance. Human physiology dictates that a runner's near-top speed cannot be maintained for more than 30–35 seconds due to the depletion of Phosphocreatine stores in muscles, and perhaps secondarily to excessive Metabolic acidosis as a result of Anaerobic glycolysis. Biological factors that determine a sprinter's potential include, Muscular strength, Adrenaline use, Anaerobic respiration capacity, Breathing, Foot speed, Proportion of fast twitch muscles ،Leg length, Pelvic width.

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METHODOLOGY

To attain this aim, a total of 20 male athletes (100 meter sprinter – 10, 400 meter sprinter – 10) all India Inter University level players with age ranging from 17 to 25 years were randomly selected from Lakshmibai National Institute of Physical Education Gwalior Madhya Pradesh.

Physical Abilities

Speed- To judge speed ability (50 meter sprint), was used and performance recorded in seconds. Two trails were given to each subject and the best one was recorded as score.

Explosive leg strength- Explosive leg strength judged through (standing broad jump) and performance noted in meters. Two trails were given to each subject and the best one was recorded as score.

Grip strength- To judge the Grip strength (grip dynamometer), was used and the score measured in kilogram. The two trails were given and the best one was recorded as the score.

Back strength- To judge the back strength (back dynamometer), was used and the score measured in kilogram. The two trails were given and the best one was recorded as the score.

Shoulder strength- To judge the Shoulder strength (Shoulder dynamometer), was used and the score measured in kilogram. The two trails were given and the best one was recorded as the score.

Physiological Abilities

Blood pressure- Blood pressure was measure by the automatic blood pressure monitor and score was recorded in mmhg.

Heart rate- Heart rate was taking by manually (resting heart rate) and recorded in beat/minutes.

Vital capacity- The subject took the deep breath before starting the test then exhaled through slowly and steadily while bending forward slightly until the max volume of the air could be expelled without taking in a second breath. The score were recorded in liters .Three trails was given to each subject and the average value was recorded.

Peak Expiratory Flow Rate- Peak expiratory flow meter was used to measuring the airflow speed. The subject is asked to breathe in as deeply as she can. Then subject is asked to blow into the mouthpiece as quickly and as hard as he can. The two trails were given and the best one was recorded as the score.

ADMINISTRATION OF THE TEST AND COLLECTION OF DATA

The subjects were randomly classified in to two groups of 20 male athletes (100 meter sprinter – 10, 400 meter sprinter – 10). Further the data was collected on selected physical and physiological variables of the sprinters.

	VARIABLES	TEST
1-	Speed	50 Meter Sprint
2-	Explosive Leg Strength	Standing Broad Jump
3-	Grip Strength	Hand Dynamometer
4-	Back Strength	Back Dynamometer
5-	Shoulder Strength	Back Dynamometer

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	VARIABLES	TEST
1-	Speed	50 Meter Sprint
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3-	Grip Strength	Hand Dynamometer
4-	Back Strength	Back Dynamometer
5-	Shoulder Strength	Back Dynamometer

S.No.	Variables	Test
1	Heart rate	Manually
2	Vital capacity	Spiro meter
3-	Blood pressure	Automatic blood pressure monitor
4-	Peak Expiratory Flow Rate	Peak flow meter

DATA ANALYSIS

For the purpose of analysis of the data independent t-test was used as statistical technique to find out the significant difference. To test the hypothesis, the level of significance was set at 0.05

RESULTS & CONCLUSION

Table - 1

	Sprinter 400,100	N	Mean	Std. Deviation	Std. Error Mean
bp systolic	100 Sprinter	10	123.7000	5.18652	1.64012
	400 sprinter	10	131.3000	10.62544	3.36006
bp diastolic	100 Sprinter	10	72.0000	4.52155	1.42984
	400 sprinter	10	76.2000	8.97899	2.83941
heart rate	100 Sprinter	10	63.1000	3.34830	1.05883
	400 sprinter	10	61.6000	3.53396	1.11754
back strength	100 Sprinter	10	138.7000	8.38053	2.65016
	400 sprinter	10	134.6000	21.15656	6.69029
shoulder strength	100 Sprinter	10	120.5000	15.21147	4.81029
	400 sprinter	10	126.3000	20.05576	6.34219
hand strength left	100 Sprinter	10	44.1000	5.85852	1.85263
	400 sprinter	10	43.8000	5.95912	1.88444
hand strength right	100 Sprinter	10	44.8000	6.19677	1.95959
	400 sprinter	10	43.3000	6.96100	2.20126
peak flow	100 Sprinter	10	540.0000	55.77734	17.63834
	400 sprinter	10	587.5000	55.13871	17.43639
50 mts speed	100 Sprinter	10	6.3450	.14615	.04622
	400 sprinter	10	6.7040	.27106	.08572
broad jump	100 Sprinter	10	2.6360	.10178	.03219
	400 sprinter	10	2.5710	.11357	.03592
vital capacity	100 Sprinter	10	3.4340	1.30126	.41149
	400 sprinter	10	2.9940	1.20308	.38045

Table- 1 shows the mean, standard deviation, and standard error of the mean for the data on all the parameters.

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Table - 2

		t-test for Equality of Means					
		F	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
bp systolic	Equal variances assumed	4.641	2.033	18	.057	-7.60000	3.73898
bp diastolic	Equal variances assumed	5.866	-1.321	18	.203	-4.20000	3.17910
hart rate	Equal variances assumed	.079	.974	18	.343	1.50000	1.53948
back strength	Equal variances assumed	2.081	.570	18	.576	4.10000	7.19606
Shoulder strength	Equal variances assumed	1.816	-.729	18	.476	-5.80000	7.96004
hand strength left	Equal variances assumed	.523	.114	18	.911	.30000	2.64260
hand strength right	Equal variances assumed	.027	.509	18	.617	1.50000	2.94713
peak flow	Equal variances assumed	.030	-1.915	18	.071	-47.50000	24.80199
50 mts	Equal variances assumed	17.777	-3.687	18	.002	-.35900	.09738
broad jump	Equal variances assumed	.245	1.348	18	.194	.06500	.04823
vital capacity	Equal variances assumed	.036	.785	18	.443	.44000	.56042

T**able-2** shows that the value of t-statistics in all the parameters is insignificant as its p value is more than the .05. Thus the null hypothesis of equality of variance is accepted. It may be concluded that there is no difference between the 100 meter sprinters and 400 meter sprinters in all the parameters Accept the p value of speed is (.002,) which is less than the .05 and the null hypothesis of equality of variance is rejected. It may be concluded that the speed of the 100 meter sprinters and 400 meters sprinters different and Average time of 100 meter sprinters is less than the 400 meter sprinters.

DISCUSSION OF FINDING

Findings of the study revealed that the value of t-statistics in all the parameters is insignificant as its p value is more than the .05. Thus the null hypothesis of equality of variance is accepted. It may be concluded that there is no difference between the 100 meter sprinters and 400 meter sprinters in all the parameters Accept the p value of speed is (.002) which is less than the .05 and the null hypothesis of equality of variance is rejected. It may be concluded that the speed of the 100 meter sprinters and 400 meters sprinters different and Average time of 100 meter sprinters is less than the 400 meter sprinters. Average timing of the 100 meter of sprinters is less than the 400 meters may be because of they need to accelerate very fast during the competition as than the 400 meters sprinters.

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CONCEPT OF WELLBEING

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ABSTRACT

Wellbeing remains a challenged concept, enjoying a wide variety of definitions. The paper draws on the common ground which indicates that: wellbeing is more than the absence of illness or pathology; it has subjective (self-assessed) and objective (ascribed) dimensions; it can be measured at the level of individuals or society; it accounts for elements of life satisfaction that cannot be defined, explained or primarily influenced by economic growth. Well-being is most usefully thought of as the dynamic process that gives people a sense of how their lives are going, through the interaction between their circumstances, activities and psychological resources or 'mental capital'. Well-being is a positive outcome that is meaningful for people and for many sectors of society, because it tells us that people perceive that their lives are going well. Good living conditions (e.g., housing, employment) are fundamental to well-being. If we go through the life peacefully, when life is not a burden, we are in a state of wellbeing. In this paper we will now see what various states of wellbeing i.e. physical wellbeing, mental, social and spiritual wellbeing.
Keywords: Wellbeing, Physical, Mental, Social.

INTRODUCTION

According to WHO (World Health Organization), health is not mere absence of disease. It is a state of well-being at physical, mental, social and spiritual level. We have two words in our literature. Arogya and Swasthya. Arogya is absence of disease. One may not have symptoms of any disease yet he or she may not be healthy positively. I may not have asthma or diabetes or hypertension etc yet I may not be a healthy person if I am not feeling a state of well being. One lady, with a huge mansion to live, didn't look so cheerful irrespective of all the comforts and riches at her command. When asked, "Are you suffering from any disease?", she replied, "This is my problem. I go to experts and they do all the costly medical check up to tell me nothing is wrong with me; but I feel a vacuum inside." What is wrong with her then? She lacks a state of well-being. Money doesn't necessarily bring that state of well-being. As the famous saying goes- "Money can give you food but not appetite. Money can give you bed but not sleep. Money can give you house but not home." If I am not in tune with myself, if I am not swastha (swayam mein sthita), if I am upset, I will not enjoy the food served to me, howsoever tasty it may be. If my mind is upset, I will not be able to sleep, howsoever comfortable the bed be. Quoting a magazine 'Industrial Chemistry', Late Prof Shastri used to say, "The production of tranquilizers in the USA exceeds the production of all other drugs". The life has become so fast that many people cannot sleep without a pill irrespective of all the luxuries. Money can buy you a wonderful house but not home. House is made of bricks.

Home is made of hearts. If there is no love between husband and wife or between members of a family, there is no state of well being. They may continue to suffer irrespective of a big house whereas a loving family may enjoy a small house because they are at ease with each other; they feel at home. Our system is like a machine. An efficient machine is in a state of wellbeing if its output exceeds the input, if there is less and less friction, less and less noise. A car that gives good mileage and makes less noise is in a state of well being. If we go through the life peacefully, when life is not a burden, we are in a state of well being. We will now see what various states of wellbeing are. What is physical wellbeing, what is mental, social and spiritual wellbeing.

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PHYSICAL WELL BEING

In an ancient book of yoga, Hatha Yoga Pradipika, the symptoms of a great yoga master are given as follows-

Slim Body, Cheerfulness, Open (un-supressed) voice (i.e. confidence), Shining Eyes (i.e. enthusiasm), Strong Immune system, Mastery over Energy, Good Digestion, Purified Nadis.

Slim Body: Now we know that a heavy body is home to many ailments.There are yogic ways to reduce the weight through proper pranayama, diet etc. But some people want to be slim in a short time using artificial, harmful ways. Some people develop eating disorders due to complex of being obese. For them 'looking slim' is important rather than having a good health. Seeing this trend and noticing harmful side-effects of illogical weight-reducing efforts by youngsters, National Daily, Indian Express carried an editorial entitled- 'It is better to be fat but fit rather than being slim and sick'. It said if one can walk fast, climb the stairs well, do one's daily chorus effortlessly, then one need not worry about being a little chubby. India Today magazine published an article saying the more we worry about our weight, the more we put on the weight by producing a hormone called NPY which multiplies the fat cells in the body. Some overweight participants found their weight reduced in the camps where emphasize was on deep relaxation. Humour is one of the easiest ways to relax. More cheerful a person, nearer to divinity he is. Anandamaya Kosha is the subtlest veil removing which we can enter the unknown. This brings us to Cheerfulness.

Cheerfulness: Some people think yoga, spirituality, philosophy, religion means long face. More spiritual a person, more cheerful one appears. In Buddhistic literature, six shades of expression of cheerfulness are mentioned:- Sita (very subtle smile, where even lips don't move); Hasita (where lips move); Vihasita (where teeth are visible); Upahasita (the laughter sound comes); Apahasita (body movements are involved) and Atihasita (the climax, whole body shakes). In full laughter like Apahasita, the chemistry of body changes. A hormone called endorphin is released which is good for health. That's why they say, 'Laughter a day, keeps the doctor away'.

Open Voice: A healthy person has a resonant, full voice, not suppressed speech. Sometimes our complexes affect our voice. If I have inferiority complex, I wouldn't be audible (unless I deliberately choose to speak softly out of sophistication or due to some other reason). When we don't recognize our inner divinity, our talents, our unique qualities and compare ourselves with others and have a low self esteem, our voice suffers.

Shining Eyes: Another symptom of good health is eyes full of enthusiasm. Face is index of body and mind. Depression, dullness (tamas) etc is reflected through our eyes. Swami Vivekananda, like many great masters, had powerful eyes. Lord Siva, Bhagwan Buddha have meditative eyes. On the other hand, you can make out if a person is dull (tamasic) or angry (rajasic) from his eyes.

Strong Immune System: A healthy, cheerful, relaxed person's immune system, the capacity to fight the diseases is very strong. It is now well known that more a person is stressed, the more his/her immune system is suppressed. Many an ailment of modern times like diabetes, arthritis are immune disorders.

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Good Digestion: Our elders used to trace the root of all the diseases to stomach. In Yoga Vasistha, three types of digestive disorders are mentioned- ajirnatvam, kujirnatvam and atijirnatvam. In the modern times of fast life, fast food, fast music etc people are prone to have problems like indigestion, constipation etc.

Purified Nadis: Nadis or channels are paths of prana in our sukshma sarira (it includes the pranic body or Pranamaya Kosha) through which the subtle energy flow takes place. Like a gadget is affected if there is fluctuation in voltage, our body gets affected if the flow of energy is blocked or gets erratic. This was amply demonstrated when acupuncture became popular. Now days many prana oriented therapies are popular. Apart from acupuncture there are (to name a few) practices like acupressure, reflexology, reiki, pranic healing etc through which ailments are sought to be cured. In yoga, healing takes place from within through pranayama (Nadi Shuddhi etc) without depending on any outside help.

Above mentioned characteristics of good health can be achieved through simple yoga practices like asanas and appropriate breathing techniques. Through meditation and other methods we can gain mental, social and spiritual health.

Mental well being: It goes without saying that mind is more important than body. Whatever happens in the body is due to mind only. Mind alone is the cause of man's misery and happiness, disease and health, bondage and freedom. Mind, the subtle entity, reflects through brain which has two lobes (parts)- left and right. Left brain is responsible for intellect, analysis, calculation etc whereas right brain is for poetry, music, art etc. A mentally healthy person has to have both the parts well developed. Left brain is seat of thinking. Anything in excess is bad. Uncontrolled thoughts drain energy. As mentioned above, it may lead to insomnia. Yoga is management of thoughts. It is a subtle technique to get into moments of silence to conserve energy. Right brain is seat of emotions. We only know two ways of dealing with emotions. Either we express them without restrain or we suppress them. Emotions are power thoughts. Thoughts are confined to head region. Emotions affect entire system. Emotion includes the word motion. Chemistry of our body changes when we are emotionally charged. Most of us have experienced what happens in a fit of anger! In moments of rage even a weakling throws dishes or kicks the door or even kills other person. So much of energy is generated! We get angry mostly with weak people- our children, life partners or servants. But we can't express our anger in front of our boss. We swallow it. What happens to the energy that is generated when we suppress our emotions like this? It hits our vital organs. For example, what is not expressed through words is expressed through wheezing which acts like a safety valve. Many a time we suppress our emotions due to wrong value system. Some people feel men should not cry but one psychologist says men also have tear glands. If there is a tragedy, better to cry and forget about it rather than suppress it. If we don't cry through our eyes, our stomach cries. Crying of stomach means acidity leading to ulcer. Yoga helps us to sublimate the emotions (neither expression, nor suppression both of which are not good for our health). This sublimation takes place through singing bhajans, listening to music and such other techniques which help develop right brain. When right brain is well developed, our emotions are under control. Sometimes auto-suggestion i.e. self-advises (Jnana Yoga) also helps. An angry person corrected his behaviour after reading a simple advice- 'When you get angry, you punish yourself for the mistake of other'. When we get angry due to others mistakes, our blood pressure goes up. Our stomach has more acid. There are so many ways to correct others if our mind is cool. And if at all a show of anger is inevitable in certain circumstances, we use it as a tool without affecting our health. Thus, a mentally healthy person is a master of his thoughts as well as emotions.

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Social well being: Social health means adjustment in life. Adjusting with others Tolerating (and later on accepting) others' shortcomings. A socially mature person is one, as told in Gita, who is relaxed in every company and all are relaxed in his company. (Chapter XII) Charity begins at home. First we have to adjust with our family members, with our life partners. Some couples fight with each other over silly matters like who should have the TV remote! It may look funny but there was a divorce in Britain over this small matter. Husband wants to see channel one and wife channel two. This was the seed of a big quarrel. When there is mutual love and trust, there is no problem which cannot be sorted out. A wife used to get upset because her husband would put on the light till late night to read his book. Then she got an idea. On his birthday she gifted him with a tiny torch which can be attached to the book. Both of them were happy after that due to mutual love and respect. If we have love for our fellow beings, we can accept them with all their limitations. If all people accept each other, that society, that country would be a healthy society. A truly religious person is one who has no complaints, who accepts all. This leads us to the last point of our discussion- spiritual health.

Spiritual well being: Love is God and God is Love. In love, there is acceptance. A spiritually healthy person sees God everywhere and therefore accepts everything. There are, mainly, three sources of misery. The people with whom we have to live or interact, the situations or jobs that we have to face and the third, the events that befall on us. Sometimes, it may be possible for some people to change their lot but not for all at all the times, in all the cases. In that case, rather than suffering, better to accept. A true devotee of God, a spiritual person accepts everything that happens as Divine Will. He sees only good in all the events. 'It is all for the best' is his mantra. A king, while cutting mango himself, hurts his hand with the sharp knife given to him. His minister, a great devotee of God, blurts out due to force of habit- 'It is all for the best Sir'. The king, whose hand was cut, gets very angry at these words and orders jail for the minister and goes for hunting in the forest all alone and, naturally, gets lost entering an enemy territory full of cannibals. This tribe of cannibals was having a festival and was looking for a person to sacrifice at altar. And here they find this enemy king and tie him as human offering. Seeing his injured hand, the priest protests, "I can't accept this wounded 'fruit'. Leave him and bring a healthy man". When free, the king realizes the words of wisdom from the minister. Reaching the capital he releases the minister asking a question to clarify a doubt- "In my case I understood it is all for the best. My hand was cut but my life was saved due to this. But you gave me such a nice piece of advice and got jail in turn. So what is good in that?" "Sir had I not been behind the bars, I would have come with you and they would have left you and caught me as I am quite a healthy person. The jail saved my life. It is all for the best." Spiritual health is the foundation of health at all levels.

CONCLUSIONS

Over the years this knowledge of our true self has been present only in the pages of scriptures but with the growing interest in the knowledge given to us by the sages, our proper understanding of the self has started opening up as new avenues in the understanding of not only the understanding the diseases conforming mankind but also in our spiritual evaluation. However there is still a long way to go before this ultimate knowledge can be made use of in our daily life to reach a perfect state of harmony with our true self.

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MENTAL TOUGHNESS AND SELF- CONFIDENCE BETWEEN CRICKET PLAYERS, A COMPARISON

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ABSTRACT

The present study aimed to compare the Mental Toughness and Self- confidence abilities between under-16 and under-19 Cricket Players. A total of eighty (N = 80) male subjects participated; forty (N = 40) Under-16 and forty (N = 40) Under-19 Cricket Players from Uttar Pradesh, were randomly selected for the collection of data. The age of the subjects ranged between 14 to 19 years. Mental Toughness was measured by applying Mental Toughness questionnaire prepared by Dr, Alan Golberg and Self- confidence was measured by applying Self- confidence questionnaire developed by:- Prof. Vealey. The "t" test was applied to find out the difference between mean scores of under-16 and under-19 Cricket Players. The level of significance was set at 0.05. The results revealed significant difference with regard to variable Mental Toughness between under-16 and under-19 Cricket Players. However, the results with regard to the variable Self- confidence were found significant difference between Individual under-16 and under-19 Cricket Players. Under- 19 Cricket Players have better Mental Toughness and Self- confidence level as compared to their counterpart Under-16 Cricket Players.

***KEY WORDS**: Mental Toughness, Self- confidence.*

INTRODUCTION

Psychology is important as it is concerned with the study of behavior and mental processes and at the same time, it is also applied to many different things in human life. Through psychology, we are able to understand and determine how the mind and body of an individual works. Self-confidence is the inner feeling of certainty; it is a feeling of certainty about who you are and what you have to offer to the world and also it also offers the feeling that you are worthwhile and valuable. Everyone craves to possess self-confidence because it makes life so much easier and so much more fun. Self-confidence gives us the energy to create our dreams. Self-confidence is an essential element to being able to create powerfully. Fisher and Cleveland (1938) stated that "most accurate concept of the bodily self is that of a representation of attitudes and expectancy systems related to the body and the views of other people toward one's self." Lopez (1977) has defined a decision as a judgment, a final resolution of a conflict of needs, means or goals; and a commitment to action made in face of uncertainly, complexity and even irrationally. Therefore Self- confidence is an important part of all science-based professions, where specialists apply their knowledge in a given area to making informed decisions. Decision-making is an integral part of everyday life and level of self-confidence is related to the time it takes to make a decision. Myers (1962) indicated that a person's Self- confidence process depends to a significant degree on their cognitive style; as in most decision-making situations, an individual faces different degrees of uncertainty. In probabilistic terms, this situation is called ambiguity.

Objectives of the study

1. To establish the difference between Under-16 and under-19 Cricket Players on the variable Mental Toughness.
2. To establish the difference between Under-16 and under-19 Cricket Players on the variable Self-confidence

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HYPOTHESES OF THE STUDY

H01: Indicated that there would have been no significant difference between Under-16 and Under-19 Cricket Players on the variable Mental Toughness.

H02: Indicated that there would have been no significant difference between Under-16 and Under-19 Cricket Players on the variable Self- confidence.

MATERIALS AND METHODS

Sample

A total of eighty (N = 80) male subjects out of which forty (N = 40) under- 16 Cricket Players and forty (N = 40) Under-19 Cricket Players from Uttar Pradesh who have already represented Uttar Pradesh board team were randomly selected for the collection of data. The age of the subjects was ranged between 14 to 19 years.

ANALYSIS

Table - 1
Comparison of mean scores with regard to 'Mental Toughness' between Under- 16 and Under- 19 Cricket Players.

Group	N	Mean	Std Deviation	Std. Error Mean	t-value	Sig.
MentalToughness U- 16	40	26.50	2.439	.386	-4.278*	.000
U- 19	40	29.45	3.616	.572		

*Significant at 0.05, table value = 1.98 (df = 78).

Table 1 shows that comparisons on the variable of 'Mental Toughness' between Under-16 and Under-19 Cricket Players. The mean (± standard deviation) values of U-16 and U- 19 Cricket Players were found to be 26.50(±2.439) and 29.45 (±3.616) respectively, the standard error of mean scores came out to be .386 and .572 respectively. The't' value -4.278 was found to be significant. at 0.05 level of significance with degree of freedom of 78 and while comparing the two mean values it shows that Under-19 cricket players have performed better on the variable 'Mental Toughness' than their counterpart Under-16 Cricket Players (Figure 1).

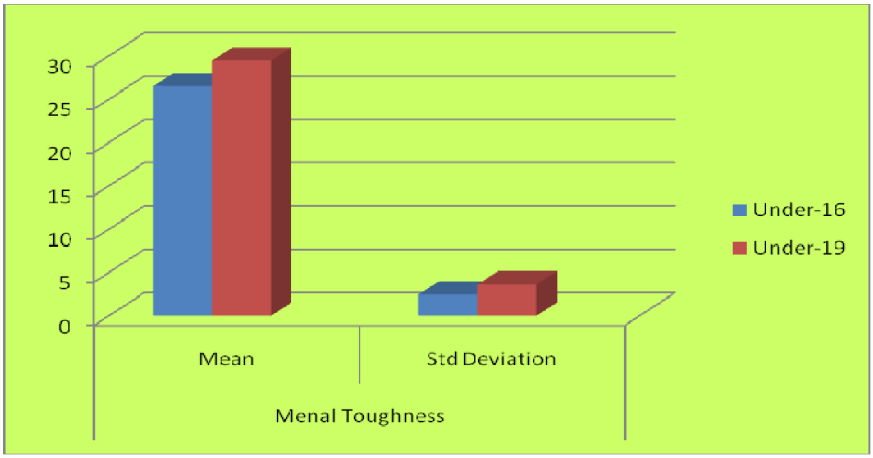

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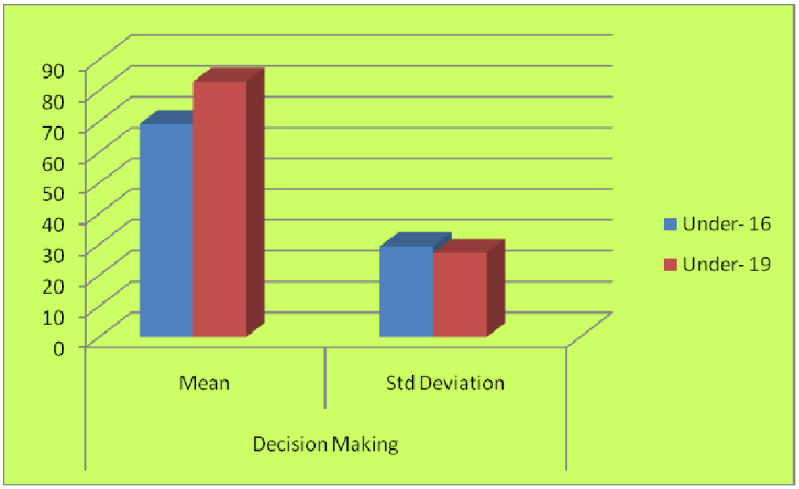
Table - 2
Comparison of mean scores with regard to 'Self- confidence' between Under-16 and under-19 Cricket Players

Group	N	Mean	Std Deviation	Std. Error Mean	t-value	Sig.
Self- Confidence U-16	40	69.13	29.366	4.643	-2.163*	.034
U-19	40	82.83	27.245	4.308		

*Significant at 0.05, table value = 1.98 (df = 78).

Table 1 showed that comparisons on the variable of 'Self- confidence ' between Under-16 and Under-19 Cricket Players. The mean (± standard deviation) values of U-16 and U- 19 Cricket Players were found to be 69.13(±29.366) and 82.83 (±27.245) respectively, the standard error of mean scores came out to be 4.643 and 4.308 respectively. The't' value -2.163 was found to be significant. at 0.05 level of significance with degree of freedom of 78 and while comparing the two mean values it shows that Under-19 cricket players have performed better on the variable 'Self-confidence' than their counterpart Under-16 Cricket Players (Figure 2).



DISCUSSION

It is evident from the above findings that significant differences were found between Under-16 and Under-19 Cricket Players on the variable of Mental Toughness as the obtained sig. value was found lower than the sig. 0.05. The results revealed that Under-19 Cricket Players have better Mental Toughness level as compared to the Under-16 Cricket players. The results might be attributed to their practical environment includes different types of games Strategy. As per the obtained data the difference between Under-16 and Under-19 Cricket Players indicate that the null hypothesis (H0) in regard to Mental Toughness is rejected. Yadav et al. (2009) found that west zone inter-varsity and national volleyball players had non-significant difference in relation to their Mental Toughness. The results with regard to the variable of Self- confidence between Under-16 and Under-19 Cricket players were found statistically significant as the obtained sig. value was found lower than the set sig. value 0.05. The results indicate that Under-19 Cricket Players have high Self- confidence level as compared to their counterpart under- 16. The findings might be as results of pressures of their study and less physical activity in under-16 Cricket Players which might lead them to the low Self- confidence level.

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The obtained value was found significant difference between Under-16 and Under-19 Cricket players indicated that null hypothesis (H0) in regard to Self- confidence is also rejected. Flaming et al. (2010) found that significant difference between Philippines and United States students on the variable Self- confidence.

CONCLUSION

The results revealed significant difference with regard to variable Mental Toughness and Self-confidence between Under-16 and under-19 Cricket players. Under- 19 Cricket Players have better Mental Toughness and Self- confidence level as compared to their counterpart under- 16 Cricket Players.

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IMPACT OF MICRONUTRIENT SUPPLEMENT ON COGNITIVE ABILITIES OF SCHOOL LEVEL PLAYERS

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ABSTRACT
SarvaShikshaAbhiyan and Micronutrients Supplement programs are the top most nationwide flagship social reforming activity in India, related to child development, organised by Ministry of Human Resource and Development and its sub-division, National Rural Health Mission (NRHM). If child is the father of nation, its physical and psychological demands must be fulfilled by the authorised character of the nation. The study was conducted to assess the impact of weekly Iron-folic acid supplementation (WIFS) on cognitive abilities of primary school level male players. The Participants were selected through their earlier participation in different sport. A total of thirty (n=30) students in the age group of 10–11 year were selected and equally assigned (n=15) as an experimental and control group. At two randomly selected schools in which one Experimental school was given IFA tablets (100 mg elemental iron +0.5 mg folic acid) once weekly for one year intermittently and the other was control school. Pre-test and post-test data was collected on the cognitive abilities by using Wechsler Intelligence Scale for Children. Dependent t- test was applied to compare the mean difference between initial and final score with respect to the selected variable. The result of the study indicated that the effect was not seen in experimental group as well as control group. It is suggested that the government should help to improve micronutrients program at regular bases of every rural areas in India.
Keywords: *Micronutrients Supplement, WIFS, Cognitive Abilities, School Level Players.*

INTRODUCTION

Children are come under below poverty line are largely related to rural areas, where no much more facilities as like cities. But they all have natural phenomena to play game or sports for entertainment and competitions. Duringcompetition, sports activities demanded physical and mental fitness both and it depends on adequate nutritious dietalso to perform well. But Due to poor socio economic status the quantity and quality of dietary intakes are inadequate for them. In such deficiencies of several minerals, Anaemia has become very common in poverty areas because of inadequate iron, folate intake.Studies indicate thatIron deficiency affects functional, particularly cognitive (Murray kolb 2007), and physical performance of children (Kanani&Pujara 2000). It has beneficiary impact on physical growth as well as cognitive development of growing school going children (Aditi&J.Kanani 2008). For child development, Indian government (MHRD) helps to all 6-14 years children through several nationwide flagship plans at free of cost like SarvaShikhaAbhiyan, Right to Education act (2010), Mid-Day Meal (1995) and micronutrients supplement health and nutritious plan under NRHM etc.

In micronutrients supplement plan, government envisages supply of adequate quantities of micronutrient such as Iron, Folic Acid, Zinc and another appropriate supplementation depending on common deficiencies fund in the local areas to the target beneficiary group through National Rural Health Mission (NRHM) of the Ministry Of Health And Family Welfare through regular health check-ups and weekly distribution of Iron and Folic Acid tablets (to prevent iron

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deficiency Anaemia) at free of cost.It is regulated by the help of central and state government respectively.

Cognitive abilities are mental processes refer to the thinking, knowing, remembering, judging and problem solving abilities of a person. In sports psychology, a motor learning scientist view cognitive processes in terms of the information processing involved in visual scanning, decision making and reaction to a stimulus, as well as the process involved in learning and retaining the appropriate motor skill.Furthermore, Chelladurai noted that an appropriate recognition of the perceptual and decision-making components is involved in many sports.
We can easily see how awareness and consciousness is a practical aspect of the cognitive process by bringing into mind, what, where, how and when we need to function in the athlete arena, these all come under the umbrella of cognitive abilities. We need to consider the parts of the brain that give us access to movement, stability or balance during athlete participation. The connection must be strong enough to maintain the reliability of the athlete to work mentally and physically. Balance, proprioception, and cognition are all the aspects of the brain ability to perform at high level whilst sitting on the shoulder of speed, power, and endurance. Athlete must be able to make split-second decisions under the pressure of activity or competitions.

METHOD

A total of thirty (n=30) school level male (boys) players was equally divided into fifteen (n=15) each experimental and control group. The study was delimited to individuals between the chronological age 10-11 year male students of class fifth of rural areas primary schools (located around a km. Range of main road) undersarvashikshaabhiyan, Kopaganj, district Mau. The study was further delimited to the student who was selected on the basis of their below poverty line(BPL). The study was further delimited to their earlier participation in different games and sports. The study was further delimited to independent variable, micronutrient supplement (Iron & Folic Acid IFA). The study was further delimited to the dependent variable, cognitive abilities.
Certainvariables related to home, school and social environment which could independently influencedcognitive abilities; such as socioeconomicbackground, child'sIQ level, parents and teacher's education, slum conditions, habits, life style, routine work, diet etc. acted as limitation for the study.

MATERIALS AND PROCEDURE

One school was randomly decidedas Experimental School (ES) and the second was theControl School (CS). The participants in the ES school were given IFA tablets (100 mgelemental iron + 0.5 mg folic acid)under supervision of school in-charge and parents provided by accredited social health workers (ASHA) through (NRHM). A total of thirty (n=30) school level male (boys) players was equally divided into fifteen (n=15) each experimental and control group. One school was randomly decided as experimental school (ES) and the second was the control school (CS). The subject had never taken the doze of any supplement before the study or fresh enrolled in this session. Pre and post-data were collected. Required cognitive abilities of the participants were assessed using Digit span and Mazecognitive test. It was converted from Guajarati to Hindi version,adapted from Wechsler Intelligence Scale forChildren (WISC) by M.C.Bhatt, conducted twice, starting and end of the session, on selected (n=30) subjects.Wechsler viewed intelligence not in terms of capacity, but rather, in terms of performance. The subtest Digit Span assesses short term memory, attention - concentration, and ability to recall the correct sequence, and Maze test assesses visual-motor coordination, speed, and fine motor coordination.

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STATISTICAL ANALYSIS

Dependent t-test was applied to compare the mean difference between initial and final score with respect to the selected psychological variable. The level of significance chosen was 0.05 throughout the study to determine the significance different with 28 degree freedom.

RESULT

The statistical analysis of collected data on the psychological variable has been presented below.

Table-1

Mean Comparison of Experimental and Control Group of Span test

Control factors	Pre test			Post test			t-ratio
	N	Mean	SD	N	Mean	SD	
Experimental	15	19.00	3.72	15	18.73	2.77	.340
Control	15	17.80	3.05	15	18.20	2.67	.382

***Significance at 0.05 level (28, 2) =2.04**

Table I indicates that there was no significance difference between the pre and post test scores of experimental and control group on short term memory, attention - concentration, and ability to recall, since the calculated 't' value of .340 and .382 were lesser than tabulated t- value of 2.04 at 0.05level of significance with 28 degree of freedom.

Table-2

Mean Comparison of Experimental and Control Group of Maze Test

control factors	Pre test			Post test			t-ratio
	N	Mean	SD	N	Mean	SD	
Experimental	15	25.93	8.34	15	26.35	8.81	.321
Control	15	22.73	5.11	15	23.40	5.50	.344

***Significance at 0.05 level (28, 2) =2.04**

Table II indicates that, there was no significance difference between the pre and post test scores of experimental and control group ofvisual-motor coordination, speed, and fine motor coordination. The calculated 't' value of .321 and .344 werelesser than tabulated 't' value of 2.04 at 0.05 level of significance with 28 degree of freedom.

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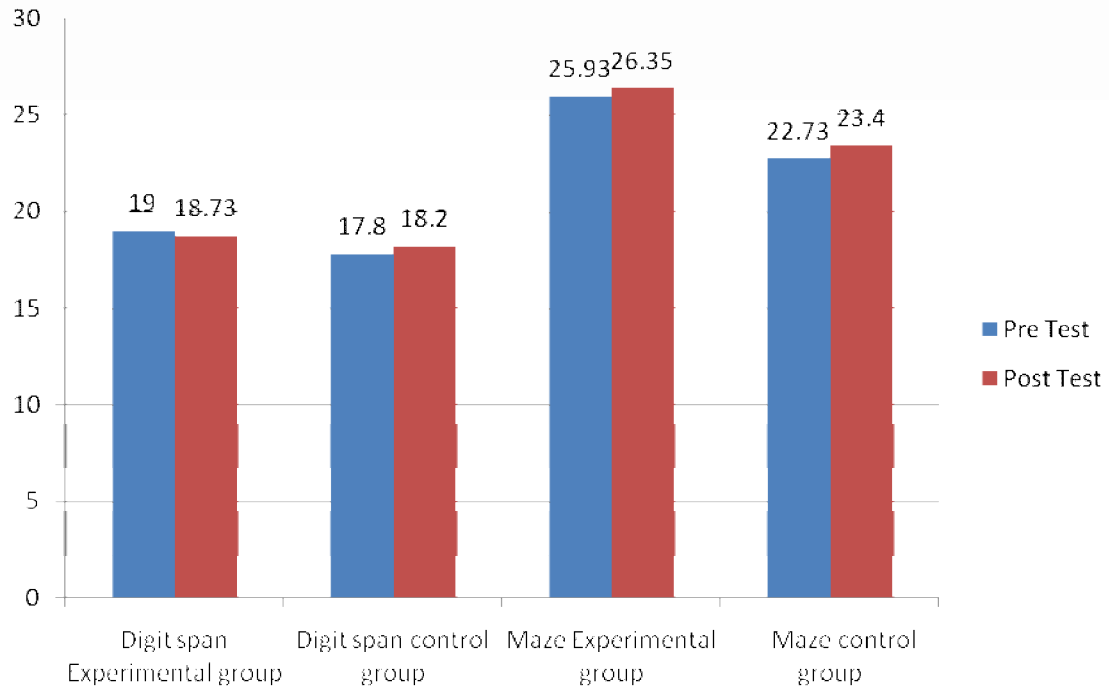
Figure – 1

Graphical Representation of the Impact of Micronutrient Supplement on Cognitive Abilities of School Level Players



FINDINGS AND DISCUSSION

The finding of the study revealed that the subjects had not improved on the selected cognitive abilities tests. After scoring the subtest, raw scores were derived by summing the number of correct items within each subject. These raw scores were converted into scaled scores. The entire subject showed average to borderline condition before and after pre and post-test. Atotal of sixteen days of IFA doze, there were no changes shown in both the tests result of experimental as well as control group. The reasons behind this result could be that the child might have been absent at that particular day. Further, supervisors might not have performed their duties, the parents were unaware and might have fear about the after effects of supplement, local, or expiry medicine might have been distributed. The contractual distributers might have been unable to reach the particular schools at the respected time.

CONCLUSION AND RECOMMENDATION

The study indicates that sixteen days (four month) of weekly iron folic acid supplement doze in an academic session is not sufficient to improve cognitive abilities of school level male players during the sports performance in athlete arena.

It is suggested that the government should help to improve micronutrients (WIFA) program at regular bases of every rural areas in India.

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EFFECT OF 8 WEEKS ANULOM-VILOM PRANAYAM ON VITAL CAPACITY OF FEMALE STUDENTS

Ms. Nutan Beniwal & Mr. Vineet Sharma, L.N.I.P.E, Gwalior

ABSTRACT

The purpose of the study is to examine the effect of 8 weeks Anulom-Vilom (It is the alternate nostril breathing) on vital capacity of adolescent. To serve the purpose of the investigation 20 female students (10 experimental, 10 control group) of 18-25 years of age group were selected randomly. Subjects were selected from the students of Lakshmibai National Institute of Physical education, Gwalior at under graduate level. The dry spirometer was used as instrument for measuring vital capacity of collegiate females. The statistical technique applied in order to examine the hypothesis of the study was descriptive statistic such as mean and standard deviation and comparative statistical technique Analysis of Covariance (ANCOVA) was used. The level of significance was set at 0.05. The results indicated that there is significance difference on vital capacity among collegiate females and it may be because of the training the subjects had given.

Key Words: Anulom-Vilom, Experimental (training group) and Control Groups

INTRODUCTION

AnulomVilom (Alternate Nostril Breathing) is one of the most effective pranayama (breathing exercises) to purify the mind and body. AnulomVilom offers benefits in curing most of the internal body conditions and is very useful in releasing stress and anxiety.

In anulom-vilom pranayam breathing is done only through one nostril which is alternated. During this other nostril is closed by using fingers, the thumb is used to close the right nostril and the ring finger is used to close left nostril.

Yoga is originated in India over thousands of years. Body and mind work perfectly after yoga, physiological changes can be explained by scientifically. It is said to help in increasing longevity and to have a therapeutic and rehabilitative effect. As the age increase the efficiency of respiratory system and ventilation declines due to various factors. In yoga pranayama is well known and has beneficial effects on respiratory efficacy. These exercises help to increase blood circulation and emptying in alveoli, leading to increased development of respiratory musculature, as is recorded in terms of Forced Vital Capacity (FVC).

In view of the above background the present study was conducted to study the effect of 8 weeks of Anulom-Vilom training on pulmonary function (Vital Capacity).

METHODOLOGY

To observe the effect of Anulom-Vilomon vital capacity, the subjects assigned for the study were exposed to practices Anulum-Vilom for several rounds daily for 20 minutes for 8 weeks. Practice Anulum-Vilom is alternative breathing practice is done only through one nostril which is alternated. During this other nostril is closed by using fingers, the thumb is used to close the right nostril and the ring finger is used to close left nostril.

Practice of Anulom-Vilom is undertaking through a simple method, as: Sit in any comfortable meditative Asana, with the head and spine straight and the left hand resting on the knee. Several rounds of Anulom-Vilom for 10 minutes followed by a few deep breathings and another 10 minutes followed by a few deep breathings were performed for 20 minutes five days a week.

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RESULTS

In order to examine the effect of Anulom-Vilom on vital capacity of adolescent, statistical technique Analysis of Covariance (ANCOVA) were employed and level of significance was set at 0.05.

Table 1
Descriptive Statistics for Anulom-Vilom on vital capacity of adolescents

AnulomVilom	Mean	Std. Deviation	N
Experimental Group	2.94	0.272	10
Control Group	2.45	0.303	10
Total	2.695	0.376	20

Table 1 shows the scores of Mean and S.D. of Experimental and Control group on Vital Capacity. The Mean & S.D of Experimental group and Control group for Post testing of Vital Capacity is 2.94±0.272; 2.45±0.303 respectively. The mean for Pre Vital Capacity of the experimental group is larger than that of the control group.

Table 2
ANCOVA table for the post test on vital capacity

Source	Type I Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2.515[a]	2	1.257	122.477	.000
Intercept	145.260	1	145.260	14148.175	.000
Pre_VC	1.557	1	1.557	151.638	.000
Groups	.958	1	.958	93.316	.000
Error	.175	17	.010		
Total	147.950	20			
Corrected Total	2.690	19			
a. R Squared = .935 (Adjusted R Squared = .927)					

Table 2 shows that the p-value for the F- statistic is 0.000 which is less than 0.05, so it is significant. Thus, the null hypothesis of no difference among the adjusted post-means for the data on vital capacity in two treatment groups may be rejected at 5% level.

Table 3
Pair wise Comparison on vital capacity of different groups

(I) Anulom-Vilom	(J) AnulomVilom	Mean Difference (I-J)	Std. Error	Sig.
Experimental Group	**Control Group**	.440	.046	.000
Based on estimated marginal means				

Since F- statistic is significant, post hoc comparison has been made for the adjusted means of both the groups. It may be noted that p-value for the mean difference between Experimental and Control group 0.000. Since this p- value is less than 0.005 and hence is significant at 5% level.

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CONCLUSIONS

There is a significant difference between the adjusted means of the Anulom-Vilomand Control group on the data of Vital Capacityduring post-testing. Hence it may be inferred that Anulom-Vilom is effective in improving the Vital Capacity among the subjects in comparison to that of the Control group.

DISCUSSION & FINDINGS

On the basis of the results of the study, the hypothesis stated that there would be significant difference in Vital Capacity in Experimental and Control group in adolescent. The hypothesis established was found to be true in Vital Capacity, hence it can be concluded that subjects of Experimental group at adolescent level has improves the level of Vital Capacity after the practice of Anulom-Vilomfor 8 weeks. This improvement of Vital Capacity in Experimental group may be because of practice of Anulom-Vilomthey have.

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ANALYSIS OF THE MOTOR FITNESS VARIABLES AMONG ALLAHABAD AND VARANASI CRICKET PLAYERS

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ABSTRACT

The current investigation was aimed to compare the motor fitness variables among the Allahabad and Varanasi Cricket Players. To analyze the critical study, selected twenty each Cricket Players at random in two different cities in Uttar Pradesh. The groups were named Allahabad and the Varanasi (n = 40). The age of the selected students were ranged between 14 to 18 years (16 ± 2). The criterion variables were selected for the study was agility and leg explosive strength. The sergeant jump test was used for leg explosive strength and shuttle run for agility for this study. The independent't' test was used as a statistical technique for the current investigation. The result of the study points that the leg explosive strength of the Allahabad students were better than ($p \leq 0.05$) the Varanasi students. However, there is no significant ($p \geq 0.05$) difference in agility between the two groups.

***Key Words**: Leg explosive strength, sergeant jump, agility.*

INTRODUCTION

Motor fitness is a term that describes an athlete's ability to perform effectively during sports or other physical activity. An athlete's motor fitness is a combination of five different components, each of which is essential for high levels of performance. It is essential for competing at high levels, which is why the concept is seen as an essential part of any athlete's training regime. Alex Paul (2014) generally, agility can be defined by the ability to explosively start, decelerate, change direction, and accelerate again quickly while maintaining body control and minimizing a reduction in speed John and Graham (2013). Leg strength is very essential for sports persons, especially athletes. Leg strength is the capacity of the lower limbs to exert muscular force (Hilfiker *et al*., 2007)). The length and height of the jump will depend to a greater degree upon the force or push the jumpers can generate and his ability to utilize the force as explosive power. The jumpers need greater leg strength and power while jumping (Clarke & Clarke, 1987). In turn, the explosive power mainly depends upon one's leg strength Therefore; there is a need to study the motor development patterns of two different tribal areas in Kerala to compare the influence of their traditional activities and the role of their daily activities in the motor qualities to each other.

MATERIALS and METHODS

The purpose of this study was to compare the motor fitness variables among Allahabad and Varanasi Cricket Players. To analyze the critical study selected twenty each school going students at random in two different cities in Uttar Pradesh. The groups were named Allahabad and the Varanasi (n = 40). The age of the selected Players were ranged between 14 to 18 years. The criterion variables were selected for the study was agility and leg explosive strength. The standard test items were used for the study was shuttle run for agility and the sargent jump test for leg explosive strength. Three chances were given to each subject and noted the best result as a final score. The independent *'t'* test was used as a statistical technique for the this investigation.

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RESULTS and DISCUSSION

Table – 1
Mean, Standard Deviation and 'T' Ratio on Leg Explosive Strength among Allahabad and Varanasi Cricket Players

Group	Mean	SD	t-value
Allahabad Student	36.69	2.13	4.38
Varanasi Student	29.97	1.78	

Significant at 0.05, table value = 2.02 (df = 38).

Table-I showed that the mean values of leg explosive strength among the Allahabad students and the Varanasi students 36.69 and 29.97 respectively. The obtained't' ratio of 4.38 is greater than the table value 2.02 for df 1 and 38 required for significance at 0.05 levels. It was concluded that there was a significant difference occurred in leg explosive strength among the Allahabad students and the Varanasi students.

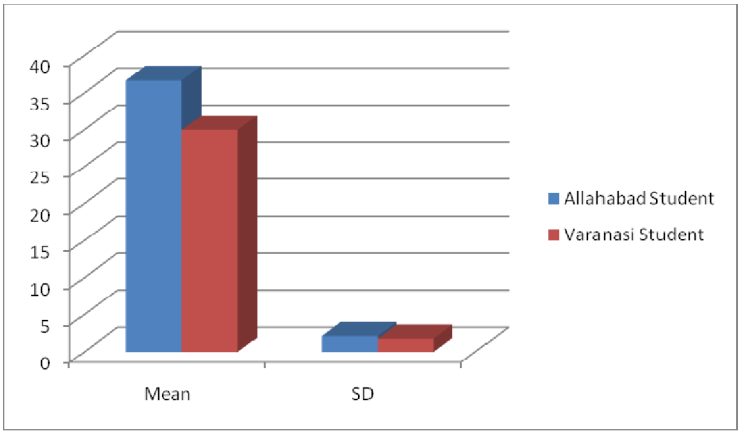

Fig. 1 Graphical presentation of Mean, Standard Deviation on Leg explosive strength among Allahabad and Varanasi Students

Table-2
Mean, Standard Deviation and 'T' Ratio on Agility among Allahabad and Varanasi Students

Group	Mean	SD	t-value
Allahabad Student	10.27	0.81	1.49
Varanasi Student	10.63	0.65	

Significant at 0.05, table value = 2.02 (df = 38).

Table-II showed that the mean values of agility among the Allahabad students and the Varanasi students 10.27 and 10.63 respectively. The obtained 't' ratio of 1.49 is lesser than the table value 2.02 for df 1 and 98 required for significance at 0.05 levels.

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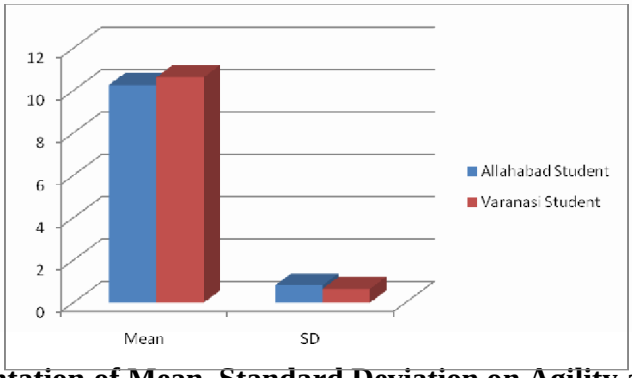

Fig. 2 Graphical presentation of Mean, Standard Deviation on Agility among Allahabad and Varanasi Students

DISCUSSION

It is evident from the above findings that significant differences were found between Allahabad and Varanasi Cricket Playerss on the variable of leg explosive strength as the obtained t-value was found greater than the tabulated value 2.02. The results revealed that Allahabad Cricket Players have better leg explosive strength as compared to the Varanasi Cricket players. The results might be attributed to their practical environment includes different types of practice environment. It was concluded that there was insignificant difference occurred in agility among the Allahabad students and the Varanasi students. The results of the present scenario point out the positive quality of Allahabad Students as compare with the Varanasi Student. The leg explosive strength of Allahabad is better than the Varanasi Students. But there is not that much of difference in agility in between these two groups. Espenschade (1968) observed that the general motor ability of girls did not improve after the age of 14, whereas, body shows steady improvement up to 18 years of age. Berry (1974) concluded in his study that the power performance in boys improves far faster than the same aged rural boys. It was due to basic inborn and acquired qualities of the tribe girl. They were involved in different kinds of movements in their day to day life as compared with others. Anyanwu (1977) and Bennett et al. (1983), also pointing the positive qualities of the tribal peoples in their studies.

CONCLUSION

The motor fitness qualities have a major role in living environment supportive surroundings. Based on the analysis of the study it was concluded that the Allahabad students have better explosive strength than the Varanasi students and in the case of the agility there was no significant difference among the two groups.

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ANALYSIS OF MOVEMENT ANTICIPATION BETWEEN VOLLEYBALL AND BASKETBALL PLAYERS

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ABSTRACT
The purpose of this study was to analyze the Movement anticipation between volleyball and basketball men players. The data was collected from the boys of volleyball and basketball match practice group of DAVV, Indore who have played universities: a total of 16 players, 8 of both the game were selected for the purpose of this study: Subjects were rested for one psychological variable i.e. time/movement anticipation. The result shows that the Volleyball players possess more time movement anticipation. The test data obtained from the study provide a baseline and reference for the further studies. It also enabled strength and weakness of the player so that appropriate training program could be designed to improve their performance.
Keywords: *Movement Anticipation.*

INTRODUCTION

Anticipation is a mental process consisting in foreseeing future events and situations based on shortening the selection stage in the information phase of sensor motor responses. Through anticipation it is possible to program proper technical actions in a sports fight and to correct them depending on the changing conditions of a contest. Anticipation processes make basic influence on athletes' performances and behavior in real competitive situations. It is extremely important in combat sports and team games where athletes are exposed to visual stimuli and time aspects. Through anticipation it is possible to program motor activities which are in line with the expected situations, to adjust them and correct before the occurrence of disturbances.

Anticipation process takes place both in space and time aspects. The first kind of anticipation answers the question what will happen and the second kind (time anticipation) enables the perception of the moment in which the event is going to appear. Usually, the insufficient time is allocated for mental training because of the lack of knowledge in implementing the program, or due to the myth that mental skills cannot be learnt. Everyone is born with specific and psychological strengths and weaknesses, but skills can be learnt and developed. Being a champion requires the mental skills be systematically practiced and integrated with physical abilities. The Vienna test system is a leading computerized psychological assessment tool. VTS the highest possible level of objectivity and precision, including aspects that cannot be measured by traditional paper and pencil tests, the base administrative software: VTS's administration software has a clear user interface from which you can administer tests, score the result and manage clients' data. A wide range of useful function enables you, example, to create test batteries or administer tests (Warsaw, 2008).

METHODOLOGY

For the purpose of this study a total of 16 male players of both the games i.e. Volleyball and Basketball of inter-university level were selected as the subjects on the basis of purposive sampling technique. Subject's age was ranging from 18-23 years. All the subjects in present study were tested on Vienna Test Instrument.

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Criterion Measure

Movement Anticipation: It is ability to imagine the effect of a movement and correctly estimate the movement of objects in space. It is the visualization of a future event or state or the act of looking forward a prior action that takes into account a later action.

Results

Descriptive statistics (mean and standard deviation) was used to analyze the performance of time/movement anticipation on Vienna Test System-

Table – 1

Descriptive Statistics of men Volleyball and Basketball

	Volleyball	Basketball
Mean	2.60	3.26
SD	0.37	0.49

Table 1 represents the mean and S.D. of volleyball and basketball men players in time movement anticipation. The descriptive statistics of volleyball and basketball players were 2.60±0.37 and 3.26±0.49 respectively. Table shows that Basketball player have more time/movement anticipation ability then Volleyball players.

Discussion and Conclusion

The psychological demand of any players can be decisive determinant of success during a match, and if a player wishes to achieve success in competition, improvements in psychological needs to be emphasized.

Based on the finding of this study, the following conclusion have been drawn-

- The findings of the present study strongly indicate that the psychological variable i.e., anticipation ability of volleyball and basketball players were not similar.
- It was revealed that the men basketball players possess more time/movement anticipation ability may be due to their direct contact with ball whereas in volleyball the contact of ball is with equipment.
- This may also be owing to the reason of small sample size in the present study, but if the similar study would be done on large sample Size then it may bring significant changes in the results.

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BODY MASS INDEX BETWEEN SCHEDULE TRIBE GIRLS AND NON - SCHEDULE TRIBE GIRLS, A COMPARATIVE STUDY

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ABSTRACT
The purpose of the study was comparison of body mass index between schedule tribe girls and non schedule tribe girls. For the purpose of study the subjects were one hundred sixty (160), eighty (80) scheduled tribe and eighty (80) non-scheduled tribe school girls from St.Michael's public school, Itki road, Ranchi, Jharkhand, between the age group of 12 to 16 years were selected. Body Mass Index (BMI) was calculated by dividing weight in kilograms by height in meters squared for all the students. The data was analyzed by applying independent t-test. The level of significance was set at 0.05. The results of this study show that there is no significant difference on body mass index between schedule tribe girls and non schedule tribe girls.
Keywords: *Body Mass Index, Schedule Tribe, Non - Schedule Tribe.*

INTRODUCTION

The body mass index (BMI) or Quetelet index is a value derived from the mass (weight) and height of an individual. The BMI is defined as the body mass divided by the square of the body height, and is universally expressed in units of kg/m2, resulting from mass in kilograms and height in meters. The BMI may also be determined using a table or chart which displays BMI as a function of mass and height using contour lines or colors for different BMI categories, and may use two different units of measurement. The BMI is an attempt to quantify the amount of tissue mass (muscle, fat, and bone) in an individual, and then categorize that person as underweight, normal weight, overweight, or obese based on that value. However, there is some debate about where on the BMI scale the dividing lines between categories should be placed. Commonly accepted BMI ranges are underweight: under 18.5, normal weight: 18.5 to 25, overweight: 25 to 30, obese: over 30. BMI is a person's weight in kilograms divided by the square of height in meters. BMI does not measure body fat directly, but research has shown that BMI is moderately correlated with more direct measures of body fat obtained from skin fold thickness measurements, bioelectrical impedance, densitometry (underwater weighing), dual energy x-ray absorptiometry (DXA) and other methods. Furthermore, BMI appears to be as strongly correlated with various metabolic and disease outcome as are these more direct measures of body fatness. In general, BMI is an inexpensive and easy-to-perform method of screening for weight category, for example underweight, normal or healthy weight, overweight, and obesity. A high BMI can be an indicator of high body fatness. BMI can be used as a screening tool but is not diagnostic of the body fatness or health of an individual. To determine if a high BMI is a health risk, a healthcare provider would need to perform further assessments. These assessments might include skin fold thickness measurements, evaluations of diet, physical activity, family history, and other appropriate health screenings. The prevalence of adult BMI greater than or equal to 30 kg/m2 (obese status) has greatly increased since the 1970s. Recently, however, this trend has leveled off, except for older women. Obesity has continued to increase in adult women who are age 60 years and older. BMI can be used for population assessment of overweight and obesity. Because calculation requires only height and weight, it is inexpensive and easy to use for clinicians and for the general public.

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BMI can be used as a screening tool for body fatness but is not diagnostic. Other methods to measure body fatness include skin fold thickness measurements (with calipers), underwater weighing, bioelectrical impedance, dual-energy x-ray absorptiometry (DXA), and isotope dilution. However, these methods are not always readily available, and International Journal of Physical Education, Sports and Health they are either expensive or need to be conducted by highly trained personnel.

Furthermore, many of these methods can be difficult to standardize across observers or machines, complicating comparisons across studies and time periods. BMI is interpreted differently for children and teens, even though it is calculated using the same formula as adult BMI. Children and teen's BMI need to be age and sex-specific because the amount of body fat changes with age and the amount of body fat differs between girls and boys. The CDC BMI-for-age growth charts take into account these differences and visually show BMI as a percentile ranking. These percentiles were determined using representative data of the U.S. population of 2- to 19-year-olds that was collected in various surveys from 1963-65 to 1988-94. Obesity among 2- to 19-year-olds is defined as a BMI at or above the 95th percentile of children of the same age and sex in this 1963 to 1994 reference population. For example, a 10year-old boy of average height (56 inches) who weighs 102 pounds would have a BMI of 22.9 kg/m2. This would place the boy in the 95th percentile for BMI - meaning that his BMI is greater than that of 95% of similarly aged boys in this reference population and he would be considered to have obesity.

METHODOLOGY

One hundred sixty subject, eighty (80) scheduled tribe and eighty (80) non-scheduled tribe school girls from St.Michael's public school, Itki road, Ranchi, Jharkhand, between the age group of 12 to 16 years were selected as subjects for the study. The students were female. Body Mass Index (BMI) was calculated by dividing weight in kilograms by height in meters squared. The collected data was analyzed using independent t test to find out the significant difference between body mass index of schedule tribe girls and non-schedule tribe girls. SPSS statistic software package (SPSS) was used. The level of significance chosen was .05.

RESULTS AND DISCUSSION OF THE FINDINGS

Data was collected and analyzed in order to draw a conclusion about Body Mass Index of schedule tribe girls and non-schedule tribe girls and the scores are given bellow.

Table 1
Mean and Standard Deviation of BMI Scores of Schedule Tribe Girls and Non-Schedule Tribe Girls.

category	N	Mean	Std. deviation
S.T.	80	18.195	2.924
Non- S.T.	80	18.269	3.050

Table 1 clearly shows that mean value of Body Mass Index of schedule tribe girls and non-schedule tribe girls were 18.26 and 18.19 respectively. And standard deviation of schedule tribe girls and non-schedule tribe girls were 2.924 and 3.050 respectively.

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Fig.1 Graphical representation of BMI between ST and Non ST girls

Table 2
Independent Samples T-Test for the Means of BMI of Schedule Tribe Girls and Non-Schedule Tribe Girls

Category	Mean	Std. deviation	Std. Error Mean	T-Value
S.T.	18.26943941	2.924	0.326	
Non- S.T.	18.19569302	3.050	0.341	0.876

*significant at 0.05 level of confidence

Table 2 clearly show that mean value of Body Mass Index of schedule tribe girls and non-schedule tribe girls were 18.26 and 18.19 respectively. The obtained t ratio of body mass index is 0.876, which is less than the required table value for df 158 is 1.975 is insignificant at 0.05 level of confidence.

The results of this study show that the insignificant difference of body mass index between schedule tribe girls and non-schedule tribe girls of Ranchi. These result may be attributed that the schedule tribe girls and non schedule tribe girl are getting physical activity in same manner there after their way of living daily routine and sports practice is similar in such manner and there atmosphere, weather would be in same.

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EFFECT OF SIX WEEK DYNAMIC SURYA NAMASKAR TRAINING ON SELECTED HEMATOLOGICAL VARIABLES OF YOUNG SPORTS MEN

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ABSTRACT
The purpose of the study was to find out the Effect of Six Week Dynamic Surya Namaskar Training on Selected Hematological Variables of Young Sports men. To achieve the purpose ofthis study thirtyYoung sports menwere selected from Department of Physical Education, Banaras Hindu University, Varanasi, U.P., at random and their age ranges from 18 to 22 years and all of them healthy and normal. They were divided in to two groups and designed as Experimental and Control group fifteenYoung sports men each. The experimental group underwent a six weeks of Dynamic SuryaNamaskar training were given. The control groups were not allowed to participate in any of the training programme except their routine Physical Education classes. The collected data were analyzed by using analysis of covariance (ANCOVA). The results of the study showed that Six Week Dynamic Surya namaskar trainingcan be an effective training programme to increase the Selected Hematological Variables of Young sports men.
Keywords: *Dynamic Surya namaskar Training, Selected Hematological Variables, Young sports men.*

INTRODUCTION

Yoga is a system of physical and mental exercise designed to balance and unite the mind, body and spirit. Yoga has simple and effective body movements that strengthen one's back, firm the stomach, and redistribute body weight. Yoga exercise stretch and tone the body muscles. They increases endurance and improve explosive strength. The practice of Yoga meditation has to be seen against the traditional backdrop of Hindu belief and culture. However, Yoga is not a religion. It is a system of psycho-physiological techniques that people can employ for spiritual enfoldment and its history is linked with that of Hinduism, into which it was incorporated by the Brahmins, the Priestly caste and Yoga's whole ration dieter is mystical, its ultimate aim being the experience of the reality underlying all manifest forms. Therefore to understand better yoga's goals, methods, and terminology, one should have some acquaintance with its Hindu and mystical frame reference.
The ideal time of practice Surya Namaskar is at sunrise, the most peaceful time of day. Whenever possible practice in the open air, facing the rising sun. Sunset is also a good time to practice as it stimulates the digestive fire. Surya Namaskar however, may be practiced at any time provided the stomach empty. The basic translation of Surya Namaskar is solution to the sun. It is a very ancient tradition which has been in existence since the Vedic age. The physical basis of the practice link together twelve asanas in a dynamically performed series. These asanas are ordered so that they alternately stretch the spine backwards and forwards .when perform in the usual way, each asana is move into with alternate inhalation and exhalation. A full round of Surya Namaskar is considered to be two sets of the twelve poses with a change in a second set to moving the opposite leg first through the series. With increasing scientific research in yoga, it therapeutic aspect are also being explored Surya namaskar gives more benefits with less expenditure of time.

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It is claimed that Surya namaskar practice improves general health and fitness, hematological variables. It refers to the ability to exert strength or force as rapidly as possible in a given action. Explosive Strength is dependent on Rate of Force Development, which simply stated means the speed at which forces can be produced. There are many benefits of Surya Namaskar on various body parts physical abilities and physiological aspects. It can reduce the risk of heart disease, lung cancer, type 2 diabetes, stroke, and many other sicknesses. Cardio respiratory endurance helps improve the condition of your lungs and heart, hematological variables, and will make you feel strong.

METHODOLOGY

Subjects for the present study were taken from thirty Young sports men were selected from Department of Physical Education, Banaras Hindu University Varanasi, U.P., at random and their age ranges from 18 to 22 years and all of them healthy and normal. The selected subjects were divided into two groups and designed as Experimental group and Control group fifteen Young sports men each. The experimental groups underwent a six week of Dynamic Surya namaskar training. The control group was not allowed to participate in any of the training programme, except their routine physical education classes. A qualified physician examined the subjects medically and declared that they were fit for the study. The duration of the training period was six weeks with five days per week. On every day the training was practiced approximately 40-45 minutes under the instruction and supervision of the investigator. The analysis of covariance (ANCOVA) was applied to find out significant difference if any between experimental and control group. In all cases 0.05 level of confidence was utilized to test the significance.

ANALYSIS OF DATA AND FINDINGS

The statistical analysis of data collected on thirty young sports men age ranged between 18-22 years, who were associated with different sports from Department of Physical Education, Banaras Hindu University, is presented in this chapter. Data were collected two times in the interval of six weeks. Total six weeks of Dynamic Surya namaskar training was conducted. Observations for tests were collected prior to the treatment in the form of pre-test then after six weeks of Dynamic Surya namaskar training; observations for second test was collected in the form of post-test. The data on selected criterion measures for all the groups were collected under similar conditions.

RESULTS OF THE STUDY

The results pertaining to analysis of data between Dependent Variables (selected hematological variables) and Independent Variable (Dynamic Surya namaskar training) Descriptive Statistics and Analysis of Co-Variance (ANCOVA) was used. The data pertaining to the results of analysis of Young sports men have been presented through the table No. II - V.

Table - 1

Descriptive Statistics of Experimental Groups and Control Group of Pre-Test & Post-Test in relation to Red Blood Cell

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Red Blood Cell Pre Test	Control	15	4.133	0.268	0.069	3.76	4.54
	Experimental	15	4.273	0.311	0.080	3.76	4.77
	Total	30	4.203	0.294	0.053	3.76	4.77
Red Blood Cell Post Test	Control	15	4.150	0.277	0.071	3.75	4.61
	Experimental	15	4.496	0.281	0.072	3.89	4.87
	Total	30	4.323	0.326	0.059	3.75	4.87

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Table -1 reveal that the mean and standard deviation of Red Blood Cell of Pre Test (Experimental Group4.27 ± 0.31, control Group 4.13 ± 0.26), Post Test (Experimental Group 4.49 ±0.28, control Group 4.15 ±0.27).

Table - 2

Analysis of Co-Variance of the Means of Experimental Groups and the Control Group in Relation to Red Blood Cell

S. V.	Group			d.f.	Sum of square	Mean square	F ratio	P - value
	Control	Experimental						
Pre Test	4.13	4.27	B	1	0.147	0.147	1.741	.198
			W	28	2.364	0.084		
Post test	4.15	4.49	B	1	0.898	0.898	11.522 *	.002
			W	28	2.182	0.078		
Adjusted post mean	4.20	4.40	B	1	0.384	0.384	15.999 *	.000
			W	27	0.648	0.024		

* Significant at 0.05 level of significance, f = ratio needed for significance at 0.05 level of significance = df (1, 28) = 4.20, df (1, 27) = 4.21

The analysis of co-variance for red blood cell indicated that the resultant f-ratio of 1.741 was insignificant in case of pre-test means from which it is clear that the pre-test mean does not differ significantly and that the random assignment of subjects to the experimental groups was quite successful. The post-test means of all the two groups yielded an f-ratio of 11.522 which was significant at level of significance 0.05. The f-ratio needed for significance with 1, 28 degree of freedom is 4.20 at level of significance 0.05. The difference between the adjusted posts means was found significant as the obtained f-ratio was 15.999 the f-ratio needed for significance at level of significance 0.05 was 4.21. Thus, mean significant difference exits between experimental and control group in relation to red blood cell.

Table - 3

Descriptive statistics of Experimental Groups and Control Group of Pre-test & Post-test in Relation to White Blood cell

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
white blood cell pre test	Control	15	8.0200	1.16822	0.30163	6.12	9.62
	Experimental	15	8.0866	1.26038	0.32543	6.12	10.12
	Total	30	8.0533	1.19452	0.21809	6.12	10.12
white blood cell post test	Control	15	7.9193	1.11893	0.28890	6.23	9.49
	Experimental	15	8.2380	1.02516	0.26469	6.58	9.89
	Total	30	8.1386	1.07775	0.19677	6.23	9.89

Table -3 reveal that the mean and standard deviation of white blood cell of pre-test (experimental group 8.08± 1.26, control group 8.02± 1.16), post- test (experimental group 8.23 ± 1.02, control group 7.91±1.11).

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Table- 4
Analysis of co-variance of the means of experimental groups and the control group in relation to White blood cell

S. V.	Group			D.f.	Sum of square	Mean square	F ratio	P - value
	Control	Experimental						
Pre test	8.02	8.08	B	1	0.033	0.033	0.023	.881
			W	28	41.346	1.476		
Post test	7.91	8.23	B	1	1.443	1.443	1.253	.272
			W	28	32.241	1.151		
Adjusted post mean	7.94	8.28	B	1	1.090	1.090	3.840	.104
			W	27	1.859	0.068		

* Significant at 0.05 level of significance, f = ratio needed for significance at 0.05 level of significance = df (1, 28) = 4.20, df (1, 27) = 4.21

The analysis of co-variance for white blood cell indicated that the resultant f-ratio of 0.023 was insignificant in case of pre-test means from which it is clear that the pre-test mean does not differ significantly and that the random assignment of subjects to the experimental groups was quite successful. The post-test means of all the two groups yielded an f-ratio of 1.253 which was insignificant at level of significance 0.05. The f-ratio needed for significance with 1, 28 degree of freedom is 4.20 at level of significance 0.05. The difference between the adjusted posts means was found insignificant as the obtained f-ratio was 3.840 the f-ratio needed for insignificance at level of significance 0.05 was 4.21. Thus, mean insignificant difference exits between experimental and control group in relation to white blood cell.

DISCUSSION OF FINDINGS

Results of this study have shown that there was mean significant difference exits between experimental and control group in relation to selected hematological variables. Results of the presented study are completely supported by other similar studies.

Similar study conducted by **Sunil kumar Yadav and Anil Kumar (2015**), The purpose of the study was to find out the effect of yogasana on selected haematological variables of female college students. To achieve the purpose of these studies thirty female college students were divided in to two groups and designed as Experimental and Control group fifteen female college students each. The experimental groups underwent an Eight weeks of yogasana training was given. The control group was not allowed to participate in any of the training program except their routine. The collected data were analyzed by using analysis of covariance (ANCOVA). The results of the study showed that yogasana can be an effective training program to increase the selected hematological variables of female college students. The results of the study have revealed significant differences between control & Experimental Groups in relation to Hemoglobin but in case of Platelets insignificant difference was found between control & Experimental Groups of female college students.

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CONCLUSIONS

In the light of the findings, it is concluded that, there is significant difference in the Red Blood Cell of Young sports men due to the six weeks dynamic surya namaskar training.

In the light of the findings, it is concluded that, there is insignificant difference in the White Blood Cell of Young sports men due to the six weeks dynamic surya namaskar training.

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EFFECT OF KAPALBHATI ON BREATH HOLDING CAPACITY AT COLLEGIATE LEVEL

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ABSTRACT

The purpose of the study is to examine the effect of kapalbhati on Breath Holding Capacity at collegiate level. The Breath Holding Capacity is the duration of time through which one can hold his breath without inhaling and exhaling. Similarly it is termed negative when breath is hold after exhaling in the air forcefully. It is the expression of effort by the respiratory muscles and the state of the bronchial tree. To serve the purpose of the investigation 20 subjects (10 experimental,10 control group) with the age group of 18-25 years, were selected randomly from the yoga match practice group of Lakshmibai National Institute of Physical Education, Gwalior. The Breath Holding Capacity of an individual measured with the help of stop watch. The statistical technique applied in order to examine the hypothesis of the study was analysis of co-variance (ANCOVA) to determine the significant difference and the level of significant was set at the level of 0.05. The result indicated that there is significant difference in Breath Holding Capacity among the subjects at collegiate level and showed improvement in lung capacity, it may be because the training given to the subjects.

Key Words: *Kapalbhati, Breath Holding Capacity, Experimental (training group) and Control Groups*

INTRODUTION

Perform exhalation and inhalation rapidly like the bellows (of a blacksmith). This is called kapalbhati(Hatha Yoga Pradipika; 2:35). Kapalabhati (pronounced KAH-pah-lah-BAH-tee), is an important part ofShatkarma (sometimes known asShatkriya), the yogic system of body cleansing techniques. The word kapalbhati is made up of two words: kapal meaning 'skull' (here skull includes all the organs in and under the skull too) and bhati meaning 'shining, illuminating.' Due to the process, the organs in and under the skull mainly the brain, small brain and any of the spaces inside the head that are connected to the back of the nose (sinus) are influenced in a good manner. Kapalbhati is a pranayama technique which invigorates the entire brain and awakens the dormant centres which are responsible for subtle perception. In English it is referred to as the 'frontal brain purification' technique. It is a similar practice to bhastrika pranayama except that exhalation is emphasised and inhalation is the result of forcing the air out. Normal breathing is characterised by active contraction of only the inspiratory muscles, such as the diaphragm and external intercostals. Expiration occurs passively on the cessation of this contraction of the internal intercostals. Kapalbhati reverses this process -exhalation is active while inhalation is passive. This induces a reversal in the flow of the nerve impulses to and from the brain bringing about stimulation and awakening of the brain centers.

Yogic practice particularly Pranayama like NadiShodhan and other breathing techniques like Kapalbhati aim to improve the pranic (vital) energy in the body. Immunity is the only factor through which one can prevent himself from any common disorders. Yogic – breathing – exercises not only improve the lung functions only, it also improves the vitality of the practitioner. For a healthy functioning of all the tissues and organs as well as for a healthy mind functioning Indian yogis have provided few wonderful techniques of Yoga.

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NadiSodhanandKapalbhatihave a great place in Hatha Yoga Prdipikaand it has been explained as follows:

Malākalāsunādīs_uāmrutonaivamadhyagah_ |
Katham_syādunmanībhāvah_ākryasiddhih_katham_bhavet ||
Śuddhametiyadāsarvam_āndīcakram_ malākulam |
Tadaivajāyateyogīprānasam_grahaneks_amah_ ||
Hatha Yoga Pradipika (2/4,5)

Meaning: The Vital Air does not pass in the middle chanel because the Nadis are full of impurities. So how can the state of unmani arise and how can perfection or Siddhi come about? When all the Nadisand Chakras which are full of impurities are purified, then the Yogi is able to retain prana.

Bhastrāvallohakārasyarecapūrausasambhramau |
Kapālabhātirvikhyātākaphados_avišos_anī||
Atkarmanirgatasthaulyakaphados_amalādikah |
Prānāyāmam_ tatah_ kuryādanāyāsenasiddhyati ||
Prānāyāmairevasarvepraśus_yantimalāiti |
Ācāryānām_ tukes_ā_mcidanyatkarmanasam_matam ||
Hatha Yoga Pradipika (2/35, 36 & 37)

Meaning: Perform exhalation and inhalation rapidly like the bellows (of the blacksmith). This is called Kapalbhati and it destroys all mucous disorders. By the Shatkarma (six cleansing processes of Hath Yoga) one become free from excess of the Doshas. Then Pranayama is practiced and success is achieved without strain. According to some of the masters of Hatha Yoga, Pranayama alone removes impurities and therefore they hold Pranayama in esteem and not the other techniques (Muktibodhananda Swami, Hatha Yoga Pradipika, Yoga publication Trust Munger, Bihar, India, 2000).

Various researches have been done in the related area. Effect of Yogic practices improves the flexibility and respiratory measure of vital capacity and breath holding time (Robson Moses, 1973). One of the studies found no significant difference between inspiratory volume and Kumbhaka period/duration of Pranayama (Mestan J &Bhole MV, 1979). Another study found that slightincre ase in pick flow rate due to practice of Anulom-Vilom Pranayama (Gore MM, 1981).

METHODOLOGY

To observe the effect of Kapalbhati on Breath holding capacity, the subjects assigned for the study were exposed to practices Kapalbhati daily for 30 minutes for 8 weeks. Practice of Kapalabhati is undertaking through a simple method, as: Sit in any comfortable meditative Asana, with the head and spine straight and thehands resting on the knees. Inhale deeply through both nostril expanding the abdomen, and exhale forcefully with contraction of the abdominal muscles. The next inhalation takes place by passively allowing the abdominal muscles to expand. Inhalation should be a spontaneous. Twenty strokes of Kapalbhati followed by a deep breathing and another twenty strokes followed by a deep breathing technique were performed for 20 minutes five days a week.

To serve the purpose of the investigation 20 healthy subjects after the informed and written consent from all the participants(10 experimental, 10 control group) with the age group of 18-25 years, were selected randomly from the yoga match practice group of Lakshmibai National Institute of Physical Education, Gwalior.

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RESULTS

In order to examine the effect of kapalbhati on Breath Holding Capacity at collegiate level, statistical technique Analysis of Covariance (ANCOVA) were employed and level of significance was set at 0.05.

Table - 1
Descriptive Statistics for Kapalbhati on Breath Holding Time

Descriptive Statistics			
Dependent Variable: BHC Post Data			
Kapalbhati	**Mean**	**Std. Deviation**	**N**
Experimental	49.600	4.719	10
Control Group	48.200	6.443	10
Total	48.900	5.543	20

Table 1 shows the scores of Mean and S.D. of Experimental and Control group on breath holding capacity. The Mean & S.D of Experimental group and Control group for Post testingof Breath Holding Capacity is 49.6±4.719; 48.2±6.443 respectively. The mean for Pre Vital Capacity of the experimental group is larger than that of the control group.

Table - 2
ANCOVA Table for the Post Test on Vital Capacity

Tests of Between-Subjects Effects					
Dependent Variable: -ve BHC Post Data					
Source	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Corrected Model	567.431[a]	2	283.716	294.655	.000
Intercept	47824.200	1	47824.200	49668.254	.000
BHC_Pre	554.659	1	554.659	576.047	.000
Treatment Group	12.772	1	12.772	13.264	.002
Error	16.369	17	.963		
Total	48408.000	20			
Corrected Total	583.800	19			
a. R Squared = .972 (Adjusted R Squared = .969)					

Table 2 shows that the p-value for the F- statistic is 0.02 which is less than 0.05, so it is significant. Thus, the null hypothesis of no difference among the adjusted post-means for the data on breath holding capacity in two treatment groups may be rejected at 5% level.

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Table – 3
Pair wise Comparison on vital capacity of different groups

Pair wise Comparisons				
Dependent Variable: BHC Post Data				
(I) Kapalbhati	**(J) Kapalbhati**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**
Experimental	**Control Group**	1.599*	.439	.002
Based on estimated marginal means				
*. The mean difference is significant at the .05 level.				

Since F- statistic is insignificant, post hoc comparison has been made for the adjusted means of both the groups. It may be noted that p-value for the mean difference between Experimental and Control group 0.002. Since this p- value is less than 0.005 and hence is significant at 5% level.

CONCLUSIONS

There is a significant difference between the adjusted means of the Kapalbhati and Control group on the data of breath holding capacityduring post-testing.

Hence it may be inferred that Kapalbhati is effective in improving the breath holding capacity among the subjects in comparison to that of the Control group.

DISCUSSION & FINDINGS

On the basis of the results of the study, the hypothesis stated that there would be significant difference in Breath Holding Capacity in Experimental and Control group at collegiate level. The hypothesis established was found to be true inBreath Holding Capacity, hence it can be concluded that subjects of Experimental group at collegiate level has improves the level of Breath Holding Capacity after the practice of Kapalbhati for 8 weeks.

This improvement of Breath Holding Capacityin Experimental group may be because of practice of Kapalbhati they have.

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ESTIMATION OF ALL-ROUNDERS PERFORMANCE IN KABADDI ON THE BASIS OF ANTHROPOMETRIC CHARACTERISTICS

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ABSTRACT

The objective of the study was to establish regression equation for predicting Dependent Variable (All-Rounders performance) on the basis of Independent Variables (selected anthropometric characteristics).The subjects for this study were selected from Madhya Pradesh State. A total of 30 male Kabaddi Players were selected who played as corners. Age of the subjects was ranging from 17 to 26 years. All-Rounders performance in kabaddi was considered as dependent variable and Standing Height, Body Weight, Arm Length, Fore Arm Length, Upper Arm Length, Upper Arm Girths, Hand Length, Leg Length, Thigh Length, Lower Leg Length, Thigh Girth and Calf Girth were considered as independent variables. For predicting Dependent Variable (All-Rounders performance in kabaddi) on the basis of Independent Variables (Selected Anthropometric Characteristics), Multiple regression analysis was used and two regression equations (models) were established. The established regression models are: ***Model I:*** *All-Rounders Performance =.72+.35* Fore arm length,* ***Model II:*** *All-Rounders Performance = 1.23+.35* Fore arm length-.01* Thigh girth.*

Keywords: All-Rounders, Anthropometric Characteristics

INTRODUCTION

In the game Kabaddi, players play on different playing positions. Some are specialized of offensive skills and some are specialized of defensive skills. Raiders are specialized in offensive skills and on the other hand Corners and Blockers are specialized in defensive skills. All-Rounders are specialized in both the types of expertise i. e. offensive and defensive. At different playing positions, different abilities are required. Estimation/prediction studies are present day need for this game.

OBJECTIVE OF THE STUDY

To establish regression equation for predicting Dependent Variable (All-Rounders performance) on the basis of Independent Variables (selected anthropometric characteristics).

METHODOLOGY

The subjects for this study were selected from Madhya Pradesh State. A total of 30 male Kabaddi Players were selected who played as All-Rounders. Age of the subjects was ranging from 17 to 26 years. All-Rounders performance in kabaddi was considered as dependent variable and following anthropometric characteristics were selected as independent variables: Standing Height, Body Weight, Arm Length, Fore Arm Length, Upper Arm Length, Upper Arm Girths, Hand Length, Leg Length, Thigh Length, Lower Leg Length, Thigh Girth, Calf Girth

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ANALYSIS

Table-1
Descriptive Statistics of All-Rounders Performance and Anthropometric Variables

Measures	Mean		Standard Deviation	Skewness		Kurtosis	
	Statistic	Standard Error	Statistic	Statistic	Standard Error	Statistic	Standard Error
All-Rounders performance	17.90	.32642	1.78	.00	.42	-1.27	.83
Standing height	169.83	1.12	6.14	.15	.42	-1.67	.83
Body weight	71.41	1.17	6.42	-.32	.42	-1.44	.83
Arm length	84.66	1.72	9.43	-.57	.42	-1.77	.83
Fore arm length	48.40	.91	5.02	-.04	.42	-1.13	.83
Upper arm length	36.51	.77	4.27	-.13	.42	-2.04	.83
Upper arm girth	31.74	.18	1.02	-.46	.42	-.83	.83
Hand length	19.46	.26	1.43	-.19	.42	-.91	.83
Leg length	169.83	1.12	6.14	.15	.42	-1.67	.83
Thigh length	71.41	1.17	6.42	-.32	.42	-1.44	.83
Lower leg length	84.66	1.72	9.43	-.57	.42	-1.77	.83
Thigh girth	48.15	1.11	6.11	-.18	.42	-1.36	.83
Calf girth	36.51	.77	4.27	-.13	.42	-2.04	.83

Table-1 shows the descriptive statistics of All-Rounders performance and Anthropometric variables.

In All-Rounders performance obtained mean, standard error of mean, standard deviation, skewness, standard error skewness, kurtosis and standard error of kurtosis were 17.90,.32, 1.78, .00, .42,-1.27 and .83 respectively.

In Standing height obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 169.83, 1.12,6.14, .15, .42, -1.67 and .83 respectively.

In Body weight obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 71.41, 1.17., 6.42, -.32, .42, -1.44 and .83 respectively.

In Arm length obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 84.66, 1.72, 9.43, -.57, .42, -1.77 and .83 respectively.

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In Fore arm length obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 48.40, .91, 5.02, -.04, .42, -1.13 and .83 respectively.
In Upper arm length obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 36.51, .77, 4.27,-.13, .42, -2.04 and .83 respectively.
In Upper arm girth obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 31.74, .18, 1.02, - .46, .42, -.83 and .83 respectively.
In Hand length obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 19.46, .26, 1.43,-.19, .42, -.91 and .83 respectively.
In Leg length obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 169.83, 1.12, 6.14,.15, .42, -1.67 and .83 respectively.
In Thigh length obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 71.41, 1.17, 6.42, - .32, .42, -1.44 and .83 respectively.
In Lower leg length obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 84.66, 1.72, 9.43,-.57, .42, -1.77 and .83 respectively.
In Thigh girth obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 48.15, .77, 4.27, - .13, .42, -2.04 and .83 respectively.
In Calf girth obtained mean, Standard error of mean, standard deviation, skewness, standard error of skewness, kurtosis and standard error of kurtosis were 36.51, .77, 4.27,-.13, .42, -2.04 and .83 respectively.

Table-2
Model Summary Related to Estimating All-Rounders Performance on the Basis of Anthropometric Variables

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
1	.998[a]	.99	.99	.11	2.19
2	.999[b]	.99	.99	.09	
a. Predictors: (Constant), Fore Arm Length					
b. Predictors: (Constant), Fore Arm Length, Thigh Girth					
c. Dependent Variable: All-Rounders Performance					

Table-2 shows the model summary for estimating All-Rounders Performance on the basis of Anthropometric variables. Two models were established by multiple regression analysis.

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In first model, R of .99 is the relationship between independent variables (Fore arm length) and dependent variable (All-Rounders Performance). Adjusted R square of .99 justify that 99% of All-Rounders Performance in explained by Fore Arm Length.
In second model, R of .99 is the relationship between independent variables (Fore arm length, thigh girth) and dependent variable (All-Rounders Performance). Adjusted R square of .99 justify that 99% of All-Rounders Performance in explained by Fore Arm Length and Thigh Girth.

Table- 3
ANOVA Table for Estimating All-Rounders Performance on the Basis of Anthropometric Variables

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	**Regression**	92.34	1	92.34	7191.62	.000[a]
	Residual	.36	28	.013		
	Total	92.70	29			
2	**Regression**	92.44	2	46.22	4861.60	.000[b]
	Residual	.25	27	.010		
	Total	92.70	29			
a. Predictors: (Constant), Fore Arm Length						
b. Predictors: (Constant), Fore Arm Length, Thigh Girth						
c. Dependent Variable: All-Rounders Performance						

Table- 3 of ANOVA is related to the utility of two established models. In model one, F. Value of 7191.62 is significant at .05 level, this model is found effective is estimating All-Rounders Performance on the basis of Fore Arm Length. In model two, F. Value of 4861.60 is significant at .05 level, this model is found effective is estimating All-Rounders Performance on the basis of Fore Arm Length, Thigh Girth.

Table- 4
Coefficients of Regression Model for Estimating All-Rounders Performance on the Basis of Anthropometric Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Standard Error	Beta		
1	**(Constant)**	.72	.20		3.55	.00
	Fore arm length	.35	.00	.99	84.80	.00
2	**(Constant)**	1.23	.23		5.27	.00
	Fore arm length	.35	.00	.99	98.13	.00
	Thigh girth	-.01	.00	-.03	-3.28	.00
a. Dependent Variable: All-Rounders Performance						

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Table- 4 shows the coefficients of regression model for estimating All-Rounders Performance on the basis of Anthropometric variables**.** On The basis of table 4 established models are:

Model I: All-Rounders Performance =.72+.35* Fore Arm Length

Model II: All-Rounders Performance = 1.23+.35* Fore Arm Length-.01* Thigh Girth

Table- 5

Details of Excluded Variables for Estimating All-Rounders Performance on the Basis of Anthropometric Variables

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
1	Standing Height	-.024[a]	-2.12	.04	-.37	.97
	Body Weight	-.016[a]	-1.40	.17	-.26	.99
	Arm Length	-.030[a]	-2.88	.00	-.48	.99
	Upper Arm Length	-.019[a]	-1.66	.10	-.30	.98
	Upper Arm Girth	.004[a]	.32	.74	.06	.96
	Hand Length	-.008[a]	-.65	.51	-.12	.99
	Leg Length	-.024[a]	-2.12	.04	-.37	.97
	High Length	-.016[a]	-1.40	.17	-.26	.99
	Lower Leg Length	-.030[a]	-2.88	.00	-.48	.99
	High Girth	-.033[a]	-3.28	.00	-.53	.99
	Calf Girth	-.019[a]	-1.66	.10	-.30	.98
2	Standing Height	-.004[b]	-.29	.77	-.05	.58
	Body Weight	.013[b]	.90	.37	.17	.52
	Arm Length	.009[b]	.28	.77	.05	.11
	Upper Arm Length	.004[b]	.28	.77	.05	.58
	Upper Arm Girth	.018[b]	1.65	.11	.30	.85
	Hand Length	.012[b]	1.05	.30	.20	.739
	Leg Length	-.004[b]	-.29	.77	-.05	.580
	High Length	.013[b]	.90	.37	.17	.527
	Lower Leg Length	.009[b]	.28	.77	.05	.119
	Calf Girth	.004[b]	.28	.77	.05	.583

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a. Predictors in the Model: (Constant), Fore Arm Length
b. Predictors in the Model: (Constant), Fore Arm Length, Thigh Girth
c. Dependent Variable: All-Rounders Performance

Table- 5 shows the details of excluded variables for estimating All-Rounders Performance on the basis of Anthropometric Variables.
In model one, eleven Anthropometric variables were excluded (Standing Height, Body Weight, Arm Length, Upper Arm Length, Upper Arm Girth, Hand Length, Leg Length, Thigh Length, Lower Leg Length, Thigh Girth & Calf Girth).
In model two, ten Anthropometric variables were excluded (Standing Height, Body Weight, Arm Length, Upper Arm Length, Upper Arm Girth, Hand Length, Leg Length, Thigh Length, Lower Leg Length,& Calf Girth).

Table-6
Residual Statistics for All-Rounders Performance in Anthropometric Variables

	Minimum	Maximum	Mean	Standard Deviation	N
Predicted Value	14.8293	21.2034	17.9000	1.78541	30
Residual	-.20338	.17066	.00000	.09408	30
Standardized Predicted Value	-1.720	1.850	.000	1.000	30
Standardized Residual	-2.086	1.750	.000	.965	30
a. Dependent Variable: All-Rounders performance					

Table-6 shows the residual statistics for estimating All-Rounders Performance on the basis of Anthropometric Variables.
In this standardized residual ranges from-2.086 to 1.75.This falls in the expected range, so there is no outliers in this study. In table-20, Durbin Watson value of 2.19 justify that there is independence in data point (.965).

Table-6 shows the residual statistics for estimating All-Rounders Performance on the basis of Anthropometric Variables.
In this standardized residual ranges from-2.086 to 1.75.This falls in the expected range, so there is no outliers in this study. In table-20, Durbin Watson value of 2.19 justify that there is independence in data point (.965).

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Figure-1
Histogram and Normal probability Plot of Residuals for Estimating All-Rounders Performance on the Basis of Anthropometric Variables

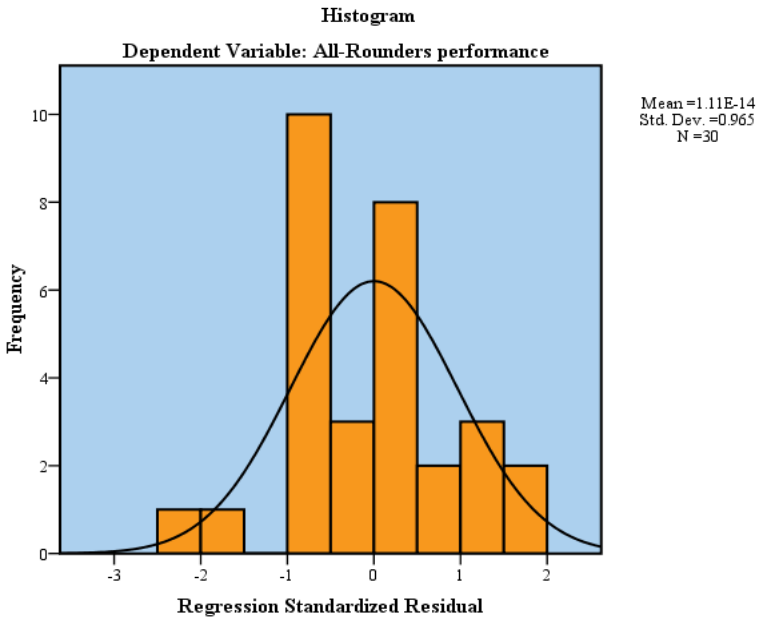

Figure-1 shows the histogram and normal probability plot of residuals for estimating All-Rounders Performance on the basis of Anthropometric variables. Figure shows that normality is present regarding the residuals with mean near to zero and standard deviation near to one.\

Figure-2
P-P Plot of residuals for Estimating All-Rounders Performance on the Basis of Anthropometric Variables

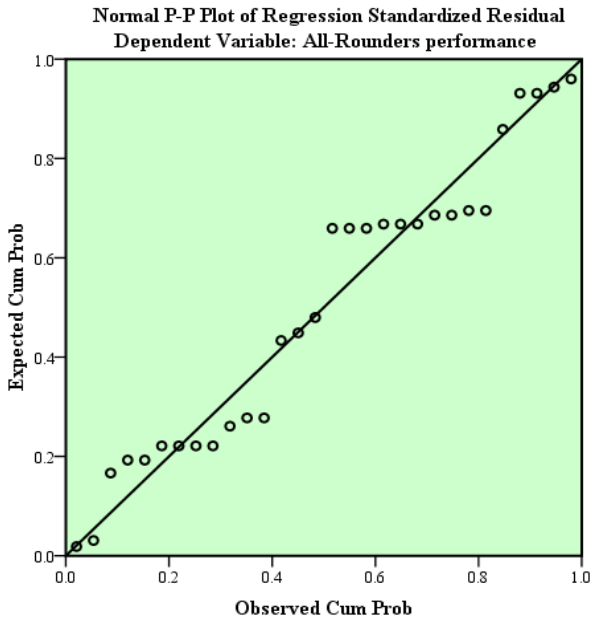

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Figure-2 Shows the P-P plots of residuals for estimating All-Rounders Performance on the basis of Anthropometric Variables.
Figure shows that observed plots are near to expected standard line to extend. This shows that distribution of residuals is near to normal.

Figure-3
Scatter Plot for Estimating All-Rounders Performance on the Basis of Anthropometric Variables for Constant Variance

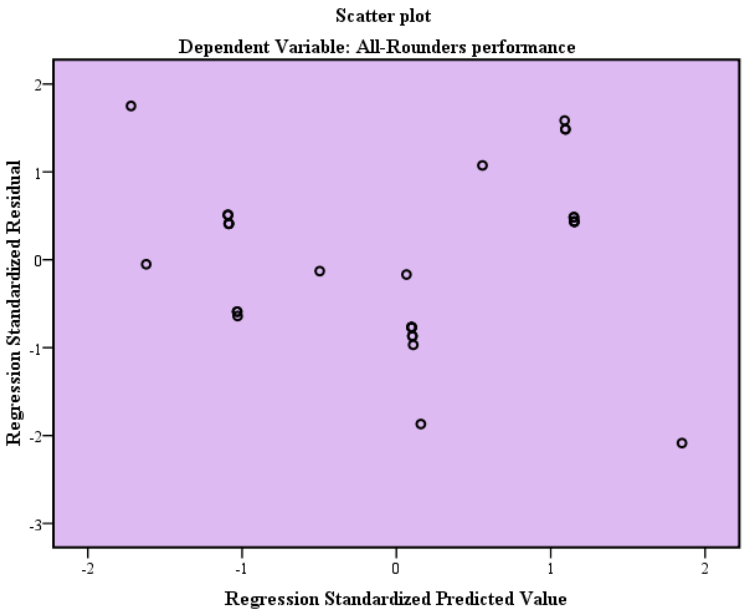

Figure-3 shows scatter plot for estimating All-Rounders Performance on the basis of Anthropometric Variables. Figure shows the constant variance to a desirable extend.
Since all the assumptions more or less are fulfilled to apply multiple regression model, established models may be generalized to estimate All-Rounders Performance on the basis of Anthropometric Variables.

Discussion

There are four playing positions in Kabaddi i.e. Raiders, Blockers, Corners and All-Rounder's. Special pre requisites are required at each playing position. So, different multiple regression equation models are required for different playing positions by taking different variables.
Earlier also different studies have been published of the same nature by taking different playing positions and additional attempt to the series of earlier publications.
Mishra, M. K. & Choudhary, R. (2015) conducted a study on the title "Estimation of Raider's Performance on the basis of Reaction Ability in Kabaddi" to establish a regression equation to estimate Raider's Performance in Kabaddi on the basis of Reaction Ability.
The established model was**:**
RP=66.978-.435X
Where: RP=Raider's Performance in Kabaddi & X=Reaction Ability

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Mishra, M. K. & Choudhary, R. (2015) conducted a study on the title "Estimation of Raider's Performance in Kabaddi on the basis of Anthropometric Characteristics" to establish a regression equation for predicting Raider's Performance in Kabaddi on the basis of selected Anthropometric Characteristics.

The established model was**:**

Model I: Raider's Performance=.78+.47*Upper Arm Length

Model II: Raider's Performance=.17+.43*Upper Arm Length+.03*Arm Length

Mishra, M. K. & Choudhary, R. (2015) conducted a study on the title "Estimation of Raider's Performance in Kabaddi on the basis of Coordinative Abilities" to establish a regression equation for predicting Raider's Performance in Kabaddi on the basis of selected Coordinative Abilities.

The established model was**:**

Model I: Raider's Performance=27.93-7.32*Rhythmic Ability

Model II: Raider's Performance=37.21-4.57* Rhythmic Ability-1.40*Balance Ability

Model III: Raider's Performance=31.31-4.57* Rhythmic Ability-1.10*Balance Ability+.22*Differentiation Ability

Mishra, M. K., Patel, R. K. & Choudhary, R. (2015) conducted a study on the title "Estimation of Corners Performance in Kabaddi on the basis of Coordinative Abilities" to establish a regression equation for predicting Corners Performance in Kabaddi on the basis of selected Coordinative Abilities.

The established model was**:**

Model: Corners Performance=34.05-12.35*Rhythmic Ability

Mishra, M. K., Chandrashekhar, B. & Choudhary, R. (2016) conducted a study on the title "Estimation of Corners Performance in Kabaddi on the basis of Anthropometric Characteristics (Part Four)" to establish a regression equation for predicting Corners Performance in Kabaddi on the basis of selected Anthropometric Characteristics.

The established model was**:**

Model: Corners Performance=29.37-.18*Lower Leg Length

OUTCOME OF THE STUDY

In this study multiple regression models has been established to estimate the performance of All-Rounder in Kabaddi on the basis of Anthropometric Characteristics.

This model may be very useful for physical education teachers, coaches and trainers.

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RELATIONSHIP OF ANTHROPOMETRIC MEASUREMENTS TO PLAYING ABILITY OF BASKETBALL PLAYERS

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ABSTRACT

The purpose of this study was to find out relationship of selected anthropometric variables to the basketball playing ability.

Twenty male (20) basketball players from Institute of Professional Studies, Gwalior (M.P.) were randomly selected as subjects for the study. The age of the subjects were 18 to 24 years. The research scholar made sincere efforts to review the related literature and listed down the important anthropometric characteristics, which are desirable for better performance in basketball. The experts in the field of basketball were consulted and detailed discussions were held pertaining to the performance requisites of basketball. So on the basis of review of literature expert`s opinion and scholar's own understanding of the game the following variables were selected for the purpose of the study: Standing Height, Leg Length and Body Weight. Standing height was measured by stadiometer and recorded to nearest centimeters. Leg length was measured through measuring tape and recorded in centimeters. Body weight was measured by weighing machine and recorded in kilogram. Basketball playing ability was measured by Johnson's Basketball Test. To find out the relationship between dependent variable (basketball performance) and independent variables (anthropometric measurements) was established by computing Karl Pearson's Product Moment method of correlation (r). For testing the hypothesis the level of significance was set at 0.05 level of significance. The statistical findings of the present study revealed that the selected anthropometric variables are not significantly related to basketball playing ability

Keywords*: Standing Height, Leg Length and Body Weight*

INTRODUCTION

Sports and games are no longer just sports games. They are big business all over the world. The boom in Prize Money and the practice of internationally renowned sportsmen signing on the product has made sports, big business. Sports lover shall over the world are happy that reputed sportsmen are no longer obliged to follow a regime of high thinking and low living. Today , sports have become a part and parcel of our culture. It is being influenced and does influence all our social institutions including education, economics, art, politics, law, mass communication and even international diplomacy. Today, anthropometry plays an important role in industrial design, clothing design, ergonomics and architecture where statistical data about the distribution of body dimensions in the population are used to optimize products. Changes in life styles, nutrition and ethnic composition of populations lead to changes in the distribution of body dimensions (e.g. the obesity epidemic), and require regular updating of anthropometric data collections. Tests of anthropometry include measurements of body size, structure, and composition. It is important to be aware of the effects of changes to these factors, and to be able to measure them. For most sports body size is an important factor in success, whether it is advantageous to be short, tall, heavy or light. The body composition, such as the amount of body fat and muscle mass, can also significantly affect sporting performance. A measure which utilizes both body composition and body size measurements is somatotype.

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We study the relationship between the size and shape of the human body and sports performance. We use internationally standardized techniques to measure athletes and use calculations of body composition, dimensions, proportion and ratio to help improve sport performance.

METHODOLOGY

Twenty male (20) basketball players from Institute of Professional Studies, Gwalior (M.P.) were randomly selected as subjects for the study. The age of the subjects were 18 to 24 years. The research scholar made sincere efforts to review the related literature and listed down the important anthropometric characteristics, which are desirable for better performance in basketball. The experts in the field of basketball were consulted and detailed discussions were held pertaining to the performance requisites of basketball. So on the basis of review of literature expert`s opinion and scholar's own understanding of the game the following variables were selected for the purpose of the study: Standing Height, Leg Length and Body Weight. Standing height was measured by stadiometer and recorded to nearest centimeters. Leg length was measured through measuring tape and recorded in centimeters. Body weight was measured by weighing machine and recorded in kilogram. Basketball playing ability was measured by Johnson's Basketball Test. To find out the relationship between dependent variable (basketball performance) and independent variables (anthropometric measurements) was established by computing Karl Pearson's Product Moment method of correlation (r). For testing the hypothesis the level of significance was set at 0.05 level of significance.

FINDING

In order to determine the relationship of anthropometric measurements to basketball playing ability among basketball players, Karl Pearson's Product Movement correlation method was used and the variables such as standing height, leg length and body weight were considered as independent variables, where as the Jonson's basketball test was considered as dependent variables.

Table - 1
Descriptive Analysis of Selected Anthropometric Measurements of Basketball Players

S. No.	Variables	Mean	Std. Deviation	Minimum	Maximum	Range
1.	**Standing Height**	171.35	4.25	164	180	16
2.	**Leg Length**	89.05	1.82	85	92	7
3.	**Body Weight**	63.75	4.50	57	72	15

Table no. 1 Indicates descriptive analysis of anthropometric variables of basketball players. In case of standing height mean, standard deviation, minimum, maximum and range are 171.35, 4.25, 164, 180 and 16 respectively. Descriptive analysis of leg length of basketball players where mean, standard deviation, minimum, maximum and range are 89.05, 1.82, 85, 92 and 7 respectively. Descriptive analysis of body weight of basketball players where mean, standard deviation,

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minimum, maximum and range are 63.75, 4.50, 57, 72 and 15 respectively.

Table - 2
Relationship of Anthropometric Measurements to Playing Ability of Basketball Players

S. No.	Variables	Correlation Coefficient (r)
1.	**Standing Height and Playing Ability**	-0.202
2.	**Leg Length and Playing Ability**	-0.272
3.	**Body Weight and Playing Ability**	0.190

*Significant at 0.05 level of significance $r_{0.05\,(20)} = 0.444$

Table no. 2 reveals there is no significant relationship between standing height and playing ability (r=-0.202), leg length and playing ability (r=-0.272) and body weight and playing ability (r=0.190) as the critical value (0.444) is higher than calculated value in all the cases. Graphical representation of correlation coefficient was given in figure no.1.

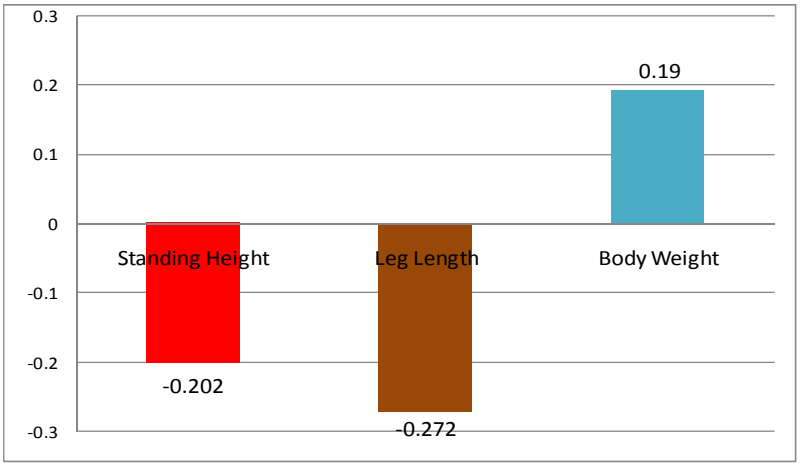

Figure -1: Correlation Coefficient of Anthropometric Measurements to Playing Ability of Basketball Players

DISCUSSIONS OF FINDINGS

The statistical findings of the present study revealed that the selected anthropometric variables are not significantly related to basketball playing ability there might be so many reason for it but as per my understanding and after discussion with experts and supervisor we come to the conclusion that its skill which is more important than any other thing.

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RELATIONSHIP BETWEEN STRUCTURAL AND FUNCTIONAL ABILITY OF VOLLEYBALL PLAYERS

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ABSTRACT

The aim of the study was analysis the relationship between structural and functional ability of volleyball players. For the purpose of the study twenty (20) subjects were selected randomly from different colleges of Gwalior, (M.P.) all the subjects were state level players who have participated in various state level Volleyball competitions. The Modified Brady Wall Volley test was used to analyze volleyball playing ability. To find out the relationship of selected structural and functional variable, the Karl Pearson product moment Correlation was used to test the hypothesis and level of significant was set at 0.05. Within the limitations of the present study it is concluded that only one structural variable i.e. height found significantly correlated with volleyball playing ability where as remaining structural variables was not found significantly correlated with Volleyball playing ability.

Keyword: structural, functional and volleyball players

INTRODUCTION

Physical activity is an inherent trait of human being. It develops its own in a natural way. It becomes all the way imperative to identity the nature and the degree of this natural talent and nature modify and refine it to get the cherished outcome. The children perform a lot of activities such as running Jumping, Throwing, Catching, Kicking, Striking etc. these activities are known as natural or universal skills because they seem common to all the people all over the globe irrespective of geographical, regional, national or racial barriers. These natural abilities ultimately develop into more and more complex and specific sports' skills. The acquisition, modification and perfection of these skills due to the increased capabilities of the individual that come with grow and development. The extent or the degree of these natural traits differs from person.

This skill combines together and develops into complex forms of highly specific movement obtained through rigorous and strenuous practice and special training. They lay foundations for the fundamental skill and the ultimate complex sports technique. Modern sports are the outcome of long and concerted efforts through improvement, modification and refinement of this simplest form over the ages.

Competition is a product of modern times. It is a challenge which motivate, stimulates and inspire the individual to run faster, jump higher and through farther and to strive to do better than before and to exhibit greater strength, endurance and skill to dominate others. In the modern world of sports, the competition attach greater significant to winning as the philosophy of participation in the field of games and sports has undergone a notable change.

Volleyball which is an excellent all-around team sports has been widely accepted as highly competitive as well as a recreational games, throughout the world. It is now recognized as one of the most breath tacking and dramatic sports of the Olympics both of the players and spectators view of point. The game provide the vide opportunity for the development of the strength, speed, endurance, agility, neuromuscular skill and co-ordination of all part of the part body by the various action involved in it. Such as Running, Jumping, Bending, starching and other movement which call for balance and poise. As a sports volleyball has immense recreational and carry over value and thus it meet all the requirement of all excellence form of physical activity.

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The said concept seems to be very much applied in the games of volleyball where lot of importance is given on the selection of the players based on the structural and functional measures. One of the recent trend in the game of Volleyball is the emphasis on "block "and in relation to that selecting the players above tow meter average height which further necessaries on the part of the spikers to have the similar physical characteristics as well as tremendous amount of jumping ability to outclass the blockers in the actual games situations.

Sally Tester and Charles Franzein are of the opinion that power and strength of leg muscles. Abdominal and back muscles and muscles of the arm and shoulder griddle play vital role in the performance of the Volleyball players.

Besides strength and power, quickness combined with ability and flexibility is the main components of specific fitness required in Volleyball. The development of these components should be related to the specific conditions of the game as they play an important role in achieving significant results in various techniques of offence and defense.

METHODOLOGY

For the purpose of the study twenty (20) subjects were selected randomly from different colleges of Gwalior, (M.P.) all the subjects were state level players who have participated in various state level Volleyball competitions. The age group of the subjects ranged between 18 to 28 years. The Modified Brady Wall Valley Test was used to analyze volleyball playing ability because it was found to be most reliable and have been used very often in the field of physical education and sports. Under this test following criteria were measured standing height, weight, Arm Ratio, Speed, Strength, Endurance and playing ability of the subjects. The data pertaining to standing height, weight, arm and Upper Arm Ratio and Strength Speed and Endurance was measured by using AAHPERD physical fitness test . To ensure that data collected were reliable, two trails were given to each subjects. To find out the relationship of selected structural and functional variables to the Volleyball playing ability single Shot research design was applied. To find out the relationship of selected structural and functional variable, the Karl Pearson product moment Correlation was used to test the hypothesis and level of significant was set at 0.05.

RESULTS

In order to determine the relationship between structural and functional ability of Volleyball players, Karl Pearson's product moment correlation method was used and the variable such as standing Height, Weight, Arm ratio, Speed, Strength and Endurance was considered as independent variables, where as the Brady Wall Valley test was considered as dependent variables.

Table - 1
Descriptive Analysis of Structural Variable of Male Volleyball Players

S.No.	Descriptive statistics	Height	Weight	Arm Ratio
1	Mean	168	63.00	1.29
2	Standard deviation	8.08	3.74	0.15
3	Minimum	154	52	1.14
4	Maximum	181.00	67	1.83
5	Range	27.00	15.00	0.69

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Table no. 1 indicate that descriptive analysis of height of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 168, 808, 154.0, 181.00 and 27.00 respectively. Above table also indicate descriptive analysis of weight for male Volleyball players where mean, standard deviation, minimum, maximum, range and values of weight factors are 63, 3.74, 52, 67 and 15 respectively. Above table also indicate descriptive analysis of force arm and upper Arm Ratio for male Volleyball players where mean, standard deviation, minimum, maximum, range 1.29, 0.15, 1.14, 1.83, and 0.69 respectively.

Table - 2
Descriptive Analysis Of Functional Variable Of Male Volleyball Players

S.No.	Descriptive statistics	Speed	Strength	Endurance
1	Mean	7.22	7.25	2.04
2	Standard deviation	0.85	2.35	0.20
3	Minimum	6.40	4.00	1.26
4	Maximum	9.30	12.00	2.37
5	Range	2.90	8.00	1.11

Table no. 2 indicate descriptive analysis of Speed (50 meter Dash) of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 7.22, 0.85, 6.40, 9.30 and 2.90 respectively

Above table indicate descriptive analysis of Strength (Pull Ups) of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 7.25, 2.35, 4.00, 12.00 and 8.00 respectively.

Above table indicate descriptive analysis of Endurance (600 meter) of male Volleyball players where mean, standers deviation, minimum, maximum and range, the values are 2.04, 0.20, 1.26, 2.37 and 1.11 respectively.

Table - 3
Relationship of Structural Variables to Playing Ability of Male Volleyball Players

S.No.	Variables	Correlation Coefficient
1	Height and playing ability	0.53
2	Weight and playing ability	0.16
3	Fore Arm and Upper Arm Ratio and Playing ability	-0.16

*****Significant at 0.05 level of significance r 0.05r (18)= .444

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Table no. 3 revealed significance relationship between height and playing ability (r=-0.53) and no significant relationship between weight and playing ability (r=0.16,) Arm ratio and playing ability (r=-0.16).

TABLE - 4
Relationship of Functional Variables to Playing Ability to Male Volleyball Players

S. No.	Variables	Correlation Coefficient
1	Speed playing ability	-0.44
2	Strength and playing ability	0.29
3	Endurance and playing ability	-0.97

*Significant at 0.05 level of significance r 0.05r (18)= .444

Table no. 4 revealed significance relationship between Speed and playing ability (r=-0.44) and no significant relationship between strength and playing ability (r=0.29) and Endurance playing ability (r=-0.97).

FINDING

It is found that there is no significance relationship exist between two structural variables i.e. Weight and For and Upper Arm ratio with Volleyball playing ability. There may be so many reasons for it but one of the main reason for it is variation in body structure of selected subjects and in in case of height there is significant relationship exist with Volleyball playing ability as we all know that height is one of the key factor for a good Volleyball player. I.e. it is found significantly correlated with Volleyball playing ability.

Finding of this study also show that none of selected functional variable is correlated with Volleyball playing ability. Their might a significant role played by these functional variables in performance in Volleyball playing but here it's not show. It may be due to sampling error or wrong selection of test.

CONCLUSION

• One the basis of this study following conclusion may be made that:

• Only one structural variable i.e. height found significantly correlated with volleyball playing ability where as remaining structural variables was not found significantly correlated with Volleyball playing ability.

• None of functional variable is found significantly correlated with Volleyball playing ability.

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COMPARISON OF SELECTED MOTOR ABILITIIES AMONG COLLEGE LEVEL VOLLEYBALL AND BASKETBALL PLAYERS

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ABSTRACT

The aim of study was to find out the Comparison of Selected Motor Abilitiies Among College Level Volleyball and Basketball Player. This study twenty male volleyball player and twenty male Basketball players of Pandit Kamalpati tripathi Govt. PG College, Chandauli was selected as subjects at random. Age ranged from 18 to 25 years. Speed and Agility were selected as a variable for investigation of present study. The data for the purpose of this study was collected at the field of Pandit Kamalpati tripathi Govt. PG College, Chandauli by administering the speed and agility. Volleyball and basketball player was not found statistically difference with regard to speed. There was significant difference was found in agility of volleyball and basketball player. The basketball player more agile. Insignificant difference has been found between speed variable of volleyball and basketball player. Significant difference has been found between agility variable of volleyball and basketball player.
Keywords: *- Motor ability, Volleyball, Basketball.*

INTRODUCTION

Volleyball is a popular sport that is played professionally, as well as in recreational leagues, on school teams, in backyards, sandlots, or beaches. Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team's court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964

The first rules, written down by William G Morgan, called for a net 6 ft 6 in (1.98 m) high, a 25 ft × 50 ft (7.6 m × 15.2 m) court, and any number of players. A match was composed of nine innings with three serves for each team in each inning, and no limit to the number of ball contacts for each team before sending the ball to the opponents' court. In case of a serving error, a second try was allowed. Hitting the ball into the net was considered a foul (with loss of the point or a side-out)—except in the case of the first-try serve.

After an observer, Alfred Halstead, noticed the volleying nature of the game at its first exhibition match in 1896, played at the International YMCA Training School (now called Springfield College), the game quickly became known as volleyball (it was originally spelled as two words: "volley ball"). Volleyball rules were slightly modified by the International YMCA Training School and the game spread around the country to various YMCA. Basketball is a sport played by two teams of five players on a rectangular court.

The objective is to shoot a ball through a hoop 18 inches (46 cm) in diameter and 10 feet (3.0 m) high mounted to a backboard at each end. Basketball is one of the world's most popular and widely viewed sports

Basketball is a team game played on a court. Each five-person team attempts to throw or dunk an inflated ball into the opponent's basket, which is mounted on a backboard that is ten feet above the floor .Basketball was originally played with a soccer ball.

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The first balls made specifically for basketball were brown, and it was only in the late 1950s that Tony Hinkle, searching for a ball that would be more visible to players and spectators alike, introduced the orange ball that is now in common use. Dribbling was not part of the original game except for the "bounce pass" to teammates. Passing the ball was the primary means of ball movement. Dribbling was eventually introduced but limited by the asymmetric shape of early alls. Dribbling only became a major part of the game around the 1950s, as manufacturing improved the ball shape.

The peach baskets were used until 1906 when they were finally replaced by metal hoops with backboards. A further change was soon made, so the ball merely passed through. Whenever a person got the ball in the basket, his team would gain a point. Whichever team got the most points won the game. The baskets were originally nailed to the mezzanine balcony of the playing court, but this proved impractical when spectators on the balcony began to interfere with shots. The backboard was introduced to prevent this interference; it had the additional effect of allowing rebound shots. Naismith's handwritten diaries, discovered by his granddaughter in early 2006, indicate that he was nervous about the new game he had invented, which incorporated rules from a children's game called "Duck on a Rock", as many had failed before it. Naismith called the new game "Basket Ball". The first official game was played in the YMCA gymnasium in Albany, New York on January 20, 1892 with nine players. The game ended at 1–0; the shot was made from 25 feet (7.6 m), on a court just half the size of a present-day Street ball or National Basketball Association (NBA) court. By 1897–1898 teams of five became standard.

MATERIAL AND METHODS

In this study twenty male Volleyball and twenty male Basketball players of Pandit Kamalpati tripathi Govt. PG College, Chandauli, was selected as subjects at random. Age ranged from 18 to 25 years. The age of the above selected male player was verified from their respective age records in the college. Speed and Agility were selected as a variable for investigation of present study. The data for the purpose of this study was collected at the field of Pandit Kamalpati tripathi Govt. PG College, Chandauli by administering the speed and agility test. The speed was measured by 50 meters dash and agility was measured by shuttle run.

Table- 1

Comparison of Mean between Volleyball and Basketball Male Player in Relation to Speed

Group	Mean	S.D	Standard Error	t-value
Volleyball	84.90	4.56	1.02	
Basketball	88.55	8.46	1.89	-1.73

Significant at .05, $t_{0.05}(38) = 2.024$

Table -1 reveals that insignificant difference was found in Volleyball and Basketball Male Players in relation to Speed because calculated “t” value (1.73) was less than tabulated value (2.02) at.05 level of significance. Mean and SD of volleyball and basketball players was 84.90, 88.55, and 4.56, 8.46 respectively. Basketball players were having greater mean (88.55) in comparison to volleyball players

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Graphical Representation of Mean and S.D. between Volleyball and Basketball Male Player on Speed

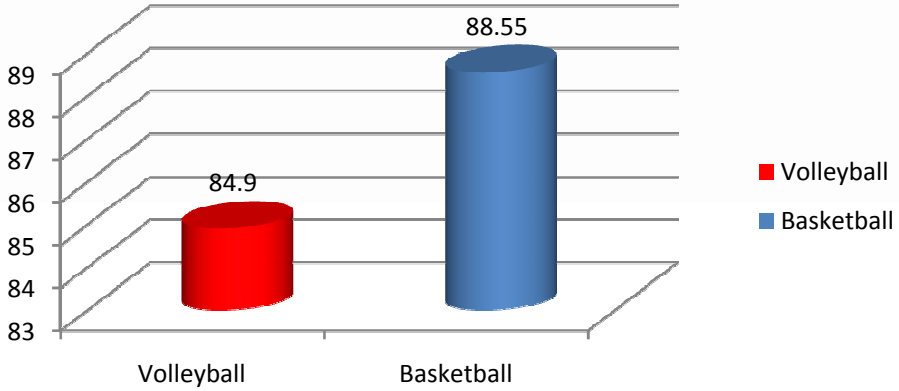


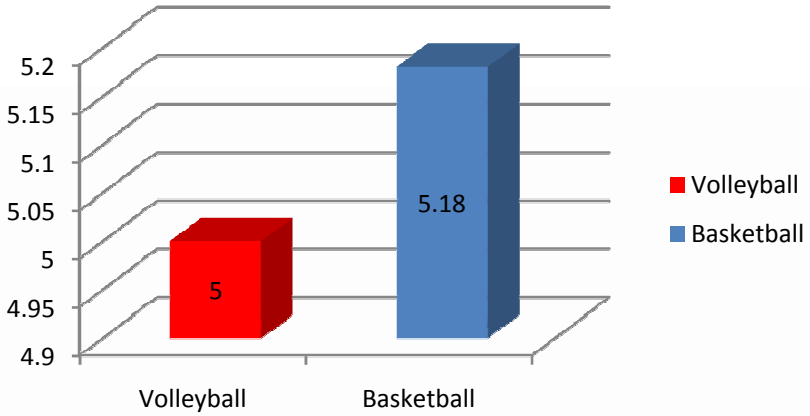
Table-2
Comparison of Mean between Volleyball and Basketball Male Player in Relation to Agility

Group	Mean	S.D	Standard Error	t-value
Volleyball	5	0.59	0.13	
Basketball	5.18	0.61	0.14	-5.15

Significant at .05, $t_{0.05}(38) = 2.024$

Table -2 reveals that significant difference was found Volleyball and Basketball Male Players in relation to Agility because calculated "t" value (5.15) was greater than tabulated value (2.02) at.05 level of significance. Mean and SD of volleyball and basketball players was 5.0, 5.18 and .59, .61 respectively. Basketball players were having greater mean (5.18) in comparison to volleyball players (5.00).

Graphical Representation of Mean and S.D. between Volleyball and Basketball Male Player on Agility



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DISCUSSION OF FINDING

From the finding of this study it may be concluded that the performance of volleyball and basketball player was not found statistically difference with regard to speed, since both volleyball and basketball player require all these component of motor ability in equal measure in their game. However, the mean difference performance of volleyball and basketball players in the speed variable not found statistically difference because the nature of their respective game. There was significant difference was found in agility of volleyball and basketball player.

CONCLUSION

Insignificant difference was found between volleyball and basketball player in relation to speed. Significant difference was found between volleyball and basketball player in relation to agility.

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RELATIONSHIP OF BODY MASS INDEX WITH AGILITY AND SPEED OF PHYSICAL EDUCATION STUDENTS

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ABSTRACT

Aim: -*The aim of this study was to investigate the relationships of height, weight and BMI with agility and speed of male physical education students.* ***Methodology: -*** *Total 45 male students were selected as subjects from Department of Physical Education, G.G.V, Bilaspur, Chhattisgarh. Age of the subjects ranged between 20 to 25 years. Selected Variables for the study were Height, Weight, BMI, Agility and Speed. Standardized test or tools like stediometer, weighing machine, 4x10mt. Shuttle run test, 50 yard dash test etc. were used to collect the data for selected variables. To find out relationship between selected variables, descriptive statistics and the Pearson's Product Moment Correlation was used.* ***Findings:-*** *There exists a significant relationship between Weight and Agility (r=.570, p<0.05), weight and speed (r=.538, p<0.05), BMI and Agility (r=.543, p<0.05) and BMI and Speed (r=.552, p<0.05). There were no significant correlation found between Height and Agility (r=.174, p>0.05) and Height and Speed (r=.085, p>0.05).*

Key Words: *Height, Weight, BMI, Agility and Speed.*

INTRODUCTION

Today, we see that in order to improve the performance of their athletes, exercise educators and teachers evaluate them in terms of healthcare, physical and movement as well as skills fitness according to a timetable. Given the nature and variety of athletic skills, stamina and player movement, as well as having some anthropometric characteristics and appropriate physical capacity, it is considered as one of the success factors in the sports scene. In addition, factors such as the size and performance indicators of motor skills in the tendency of people to a specific sport play an important role.

Motion capabilities such as speed, agility, balance, which the concept of movement has been considered have a wide range in different sports and play an important role in implementing excellent motor skills (Zapartdis et al., 2009). Motion speed is considered a required physical capability for high levels of performance in many sports. Speed is the amount of movement or the distance by one of the body limbs or the whole body. Most coaches in primaries tend to be aware that whether the athletes in sprinting or other activities are faster or not (Markovic et al., 2005). Velocity component include reaction time, acceleration, maximum speed, endurance in speed and movement time that speed test in this research relates to movement time (Gal et al., 2008). Agility factor is very important factor in most sports. The athlete should be able to have great maneuverability. The ability of individuals to change fast moving, with balance and understanding of the position indicates one's high agility (Kazemei et al., 2006).

All the components of physical fitness and motor fitness can be realized by different body actions. In this manner the physique of a person especially Height and Body Weight plays very important role in his motor fitness status. The puberty phase of human life is found to be most productive one for developing base for different motor abilities. It is believed that motor fitness is trainable factor but the influence of one's physique and body composition seem to play a great role in its determination as achievement of high level performance is only possible in an individual with adequate genetic predisposition and under optimal environment condition. India is vast country with unique cultural, social, geographical, ethnic and climatic differences.

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It is believed that motor fitness is trainable factor but the influence of one's physique and body composition seem to play a great role in its determination as achievement of high level performance is only possible in an individual with adequate genetic predisposition and under optimal environment condition. India is vast country with unique cultural, social, geographical, ethnic and climatic differences. The motor fitness of Indian male varies according to regional variations of the country. The B.M.I. also varies from one region to another which ultimately affects growth and development. Sodhi, Padhmanathan and Prakash (2007) have reported that the regional variation of morphological characteristics of Indian children occur due to socio-economic, climatic and genetic variations.

Through body measurement, sports scientists will be able to gain the necessary information about the physical form, physical fitness and physical condition of athletes (Zapartdis et al., 2009). Many accurate predictions about individual and team performance over the past two decades have been solely based on height and body mass. According to many experts, anthropometric indices or physical and size dimensions is of the determining factors in the exercise and has dramatically been included in the new talent finding (Kazemei et al., 2006).

OBJECTIVES OF THE STUDY

•To find out the relationship of Height with speed and agility of male physical education students.
•To find out the relationship of Weight with speed and agility of male physical education students.
•To find out the relationship of BMI with speed and agility of male physical education students.

METHODOLOGY

A total of 45 male students were selected from the Department of Physical Education, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh. Age of the subjects was ranging between 20 to 25 years. Keeping the feasibility criterion in mind, the researcher selected the following variables for the present study:

•Height
•Weight
•BMI
•Speed
•Agility

Criterion Measures

•BMI was calculated as weight in kilograms divided by the square of height in meters.
•Speed was measured by 50mt. dash, recorded in seconds.
•Agility was measured by 4x10mt. Shuttle Run Test, recorded in seconds.

STATISTICAL ANALYSIS

For determining the relationships of selected variables, descriptive statistics and the Pearson's Product Moment Correlation were used, the data analyzed with the help of SPSS (16.0 version) software and the level of significance was set at 0.05 level of confidence.

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RESULT AND FINDINGS OF THE STUDY

Table - 1
Descriptive Statistics of Selected Variables of Male Physical Education Students

Variables	N	Mean	Std. Deviation
Height	45	166.922	5.769
Weight	45	60.146	7.728
BMI	45	21.576	2.437
Agility	45	10.849	.788
Speed	45	7.136	.729

Table 1 depicts that the mean and SD of height (166.922 ± 5.769), weight (60.146± 7.728), BMI (21.576 ± 2.437), Agility (10.849 ± .788) and Speed (7.136 ± .729).

Table 2
Relationship Among Selected Variables of Male Physical Education Students

Variables 1	Variables 2	Coefficient of correlation (r)	Sig.
Height	Agility	.174	.254
	Speed	.085	.579
Weight	Agility	.570*	.000
	Speed	.538*	.000
BMI	Agility	.543*	.000
	Speed	.552*	.000

*** Correlation is significant at the 0.05 level (2-tailed).**

According to Table 2 it can be seen that there are significant correlation between Weight and Agility (r=.570, p<0.05), weight and speed (r=.538, p<0.05), BMI and Agility (r=.543, p<0.05) and BMI and Speed (r=.552, p<0.05). Another hand there are no significant correlation between Height and Agility (r=.174, p>0.05) and Height and Speed (r=.085, p>0.05).

DISCUSSION OF THE FINDINGS

Taghinejad (2013) reviewed the relationship between anthropometric measurements and physical fitness factors of female students in Shiraz and explained the inverse significant relationship between weight and body mass index with speed that is quire consistent with the results of this study. Shafizadeh (2010) reviewed the relationship between anthropometric parameters among youth at football schools with their individual skills. This study investigated the relationship between heights, weight and body mass index of teenagers with their individual skills. Results associated with this assumption indicated the significant inverse relationship between weight and running skill among 10 and 11 year olds that is consistent with the results of the second and third hypothesis.

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Based on the results obtained and the reliability of the results of this study, it is concluded that BMI factor has a significant negative correlation with recorded running speed. In fact, the running speed record is damaged with a high body mass index. Speed factor is of important physical fitness factors in most sports. BMI is also a standard indicator for identifying overweight, underweight, ideal weight and obesity and is directly related to one's weight. Most research in this area indicates that higher body mass index has a weak sport performance (Taghinejad, 2013). The results indicate that there is an inverse significant correlation between BMI and agility record.

Bahpour and colleagues (2002), reviewed the relationship between body type and body composition and performance in the basic movement patterns and components of soccer basic skills. The obtained results showed that increased endomorph and increased weight in subjects causes weakening their performance in certain subjects such as dribbling and agility test that is consistent with our results. Also, it is consistent with the research results of Rahmaninia (2009). In addition Moghadasi and colleagues (2011), reviewed the prevalence of overweight and obesity and fitness levels among adolescents at Shiraz city in 2010 and finally obtained a significant inverse relationship between the factors of physical fitness and body fat percentage and body mass index which was consistent with the current research results.

Agility is also very important factors for physical fitness and sport. One reason for agility enhancement can be attributed to the weight to be shifted easily in exercises. Because BMI is directly related with weight, and the results according to specified standards lose weight, overweight, normal weight and obesity can be estimated, and as previously mentioned; too much weight will cause the athlete to carry the extra load during process, causing poor performance and ultimately reduce the agility of a person.

CONCLUSIONS

On the basis of the result of the study, it can be concluded that there were significant relationship found between Weight and Agility ($r=.570$, $p<0.05$), weight and speed ($r=.538$, $p<0.05$), BMI and Agility ($r=.543$, $p<0.05$) and BMI and Speed ($r=.552$, $p<0.05$). There were no significant correlation found between Height and Agility ($r=.174$, $p>0.05$) and Height and Speed ($r=.085$, $p>0.05$).

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EFFECT OF SPEED TRAINING ON SPRINTING PERFORMANCE OF ATHLETES

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ABSTRACT
Background: *The purpose of the study was to investigate the effect of speed training on sprinting performance of athletes.* ***Methods:*** *For the present study the subjects were 16 male students of BHU participating in state level/university level Championships conducted by the UPAA/AIU. Age of subject was ranging between 18 to 27 yrs. They were selected randomly for the purpose of the study. For the present study pre test – post test randomized group design which consists of control group and experimental group for each level, was used to find out effect of speed training on sprinting performance of athletes. Equal numbers (eight) of subjects were assigned randomly to both the groups. The data was collected before, after six weeks of training. All above mentioned drill tests were administered to collect data. The subjects were consulted personally and the subjects volunteered to take part in the experiment and agreed to cooperate in the Speed drills training programme to the best of their abilities. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) Technique to find out the effect of speed training on sprinting performance of athletes. The level of significance was set at 0.05.* ***Results:*** *The findings of the present study have strongly indicates that Results of this study have shown that there was mean significant difference exits between experimental and control group in relation to Speed.* ***Conclusion:*** *It is concluded that, there is significant difference in the Speed of male players due to the six weeks Speed training.*

Key words: *Athletics, Speed, Sprint.*

INTRODUCTION

Athletics is an exclusive collection of sporting events that involve competitive running, jumping, throwing, and walking. The most common types of athletics competitions are track and field, road running, cross country running, and race walking. The simplicity of the competitions, and the lack of a need for expensive equipment, makes athletics one of the most commonly competed sports in the world. Athletics is mostly an individual sport, with the exception of relay races and competitions which combine athletes' performances for a team score, An Athletic competition was included in the first modern Olympic Games in 1896 and it has been as one of the foremost competitions at the quadrennial multi-sport event ever since. Originally for men only, the 1928 Olympics saw the introduction of women's events in the athletics program. Athletics is part of the Paralympics Games since the inaugural Games in 1960. Athletics has a very high profile during major championships, especially the Olympics, but otherwise is less popular. An international governing body, the International Amateur Athletics Federation (IAAF), was founded in 1912; it adopted its current name, the International Association of Athletics Federations, in 2001. The IAAF established separate outdoor World Championships in 1983. In modern times, athletes can receive money for racing, putting an end to the so-called "amateurism" that existed before such as cross country.

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A variety of running events are held on the tracks which fall into three broad distance categories: sprints, middle-distance, and long-distance track events. Relay races feature teams comprising four runners each, who must pass a baton to their team-mate after a specified distance with the aim of being the first team to finish. Hurdling events and the steeplechase are a variation upon the flat running theme in that athletes must clear obstacles on the track during the race. The field events come in two types – jumping and throwing competitions. In throwing events, athletes are measured by how far they hurl an implement, with the common events being the shot put, discus, javelin, and hammer throw. There are four common jumping events: the long jump and triple jump are contests measuring the horizontal distance an athlete can jump, while the high jump and pole vault are decided on the height achieved.Combined events, which include the decathlon (typically competed by men) and heptathlon (typically competed by women), are competitions where athletes compete in a number of different track and field events, with each performance going toward a final points tally.

Sprint

A short period of running or going very fast.
A race over a short distance at a very fast speed.
The competitive athletics sport of running distance of 400 meter or less.

OBJECTIVE OF THE STUDY

The purpose of the study is to investigate the effect of speed training on sprinting performance of athletes. It is hypothesized that there would be significant effect of speed training on sprinting ability of athletes.

METHODOLOGY

For the present study the subjects were 16 male students of BHU participating in state level/university level Championships conducted by the UPAA/AIU. Age of subject was ranging between 18 to 27 yrs. They were selected randomly for the purpose of the study. For the present study pre test – post test randomized group design which consists of control group and experimental group for each level, was used to find out effect of speed training on sprinting performance of athletes. Equal numbers (eight) of subjects were assigned randomly to both the groups. The data was collected before, after six weeks of training. All above mentioned drill tests were administered to collect data. The subjects were consulted personally and the subjects volunteered to take part in the experiment and agreed to cooperate in the Speed drills training programme to the best of their abilities. The data was analyzed by applying Analysis of Co-Variance (ANCOVA) Technique to find out the effect of speed training on sprinting performance of athletes. The level of significance was set at 0.05.

RESULTS OF THE STUDY

The results pertaining to analysis of data between Dependent Variables (speed) and Independent Variable (speed training) Descriptive Statistics and Analysis of Co-Variance (ANCOVA) was used. The data pertaining to the results of analysis of students have been presented through the table No. 1 and 2

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Table -1
Descriptive Statistics of Speed for Experimental and Control Group of Male Players

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Speed Pre Test	Control Group	8	13.1125	.90277	.31918	12.00	14.38
	Experimental Group	8	13.0938	.56165	.19857	12.19	13.78
	Total	16	13.1031	.72639	.18160	12.00	14.38
Speed Post Test	Control Group	8	13.0938	.98226	.34728	12.08	14.80
	Experimental Group	8	12.5650	.53554	.18934	11.87	13.14
	Total	16	12.8294	.81157	.20289	11.87	14.80

Table -I reveals that, the mean and standard deviation of Speed of Pre Test (Experimental Group 13.09± .56, control Group 13.11 ± .90), Post Test (Experimental Group 12.56 ± .53, control Group 13.09 ± .98).

Figure -1
Graphical Representation of the Descriptive Statistics of Speed for Experimental and Control Group of Male Players

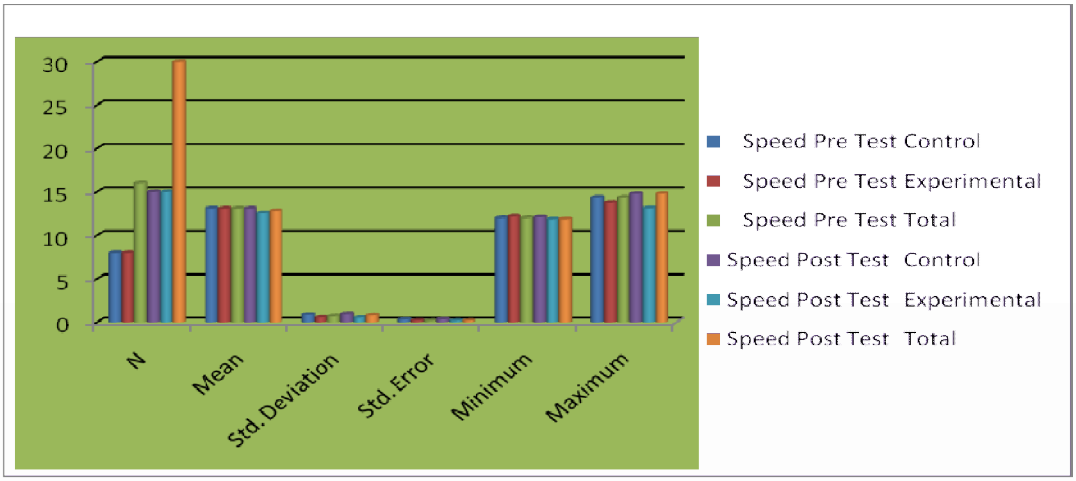

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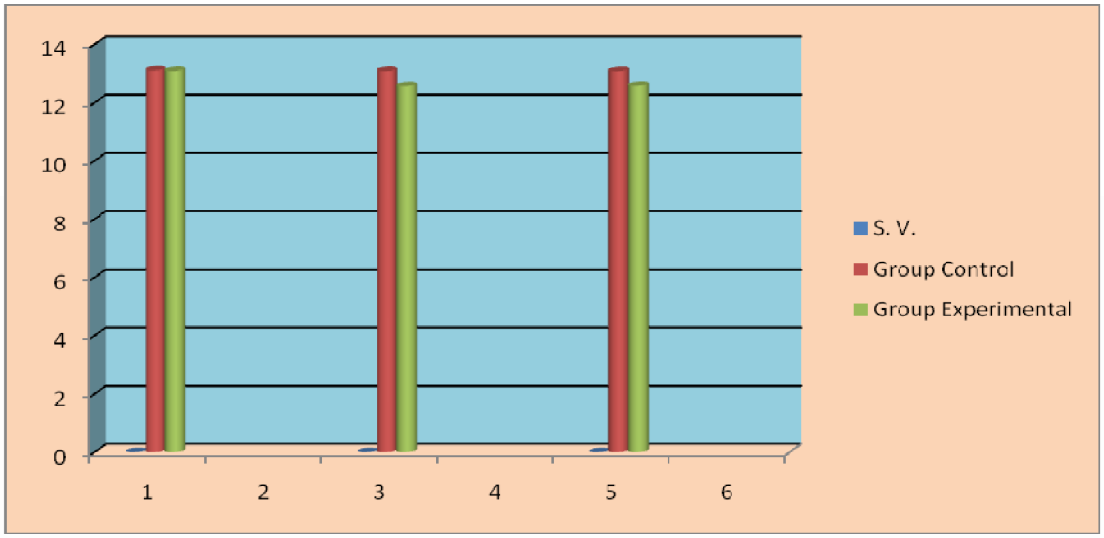
Table-2
Analysis of Co-Variance of the Means of Experimental Group and the Control Group in relation to Speed

S. V.	Group			d.f.	Sum of square	Mean square	F ratio	Sig.
	Control	Experimental						
Pre Test	13.11	13.09	B	1	.001	.001	.002	.961
			W	14	7.913	.565		
Post Test	13.09	12.56	B	1	1.118	1.118	1.787	.203
			W	14	8.761	.626		
Adjusted Post mean	13.086	12.573	B	1	1.050	1.050	4.954	.044
			W	13	2.755	.212		

* Significant at 0.05 level of significance, F = Ratio needed for significance at 0.05 level of significance = df (1, 14) = 4.60, df (1, 13) = 4.67

The analysis of co-variance for Speed indicated that the resultant F-ratio of .002 was insignificant in case of pre-test means from which it is clear that the pre-test mean does not differ significantly and that the random assignment of subjects to the experimental groups was quite successful. The post-test means of all the two groups yielded an F-ratio of 1.787 which was insignificant at 0.05 level of confidence. The F-ratio needed for insignificance with 1, 14 degree of freedom is 4.60 at 0.05 level of confidence. The difference between the adjusted posts means was found significant as the obtained F-ratio was 4.954. The F-ratio needed for significance at 0.05 level of confidence was 4.67. Thus, mean significant difference exits between experimental and control group in relation to Speed.

Figure -2
Graphical Representation of the Comparison of the Analysis of Co-Variance of the Means of Experimental Group and the Control Group in relation to Speed



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CONCLUSIONS

On the basis of findings and within the limitations of the study the following conclusions were drawn: there is significant difference in the Speed of male players due to the six weeks Speed training.

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YOGA FOR COMMUNITY HEALTH

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"Listen to the principles of Yoga by practicing these, you can break through the bonds of Karma"

ABSTRACT

Human beings are made up of three components — Body, Mind and Soul. Correspondence to these are three needs that must be satisfied for a contented life the physical need is health, the psychological need is knowledge and spiritual need is inner peace. When all three are present there is harmony. Yoga at the physical level gives relief from countless ailments. The practice of the postures (Asanas) strengthens the body and creates a feeling of well-being. From the psychological viewpoint, Yoga sharpens the intellect and aids in concentration. It studies the emotions and encourages a caring concern for others. The practice of breathing technique (Pranayam) calms the mind. In the realm of the spiritual, Yoga brings awareness and the ability to be still through meditation, inner peace is experienced. Thus, Yoga is a practical philosophy involving every aspect of a persons being. It teaches the evolution of the individual by the development of self discipline and self awareness. Anyone irrespective of age, health, circumstances of life and religion can practice Yoga. Yoga helps to discipline our sense of power, with the power of our own sense.

Keywords: *Components, Spiritual, Sense.*

INTRODUCTION

If we peep into the benefits of Yoga, they are numerous, including improved physical fitness, stress control, general well- being mental clarity, and greater self-understanding. People of all ages can do Yoga, and it can also be adapted for people with disabilities or special needs. The *asanas* enhance muscle strength, coordination, flexibility, and can help in the cure of backache. Regular practice of Yoga helps to keep our body fit, controls cholesterol level, reduces weight, normalizes blood pressure and improves cardiovascular performance. Apart from these, when people active, seek to reduce the stress in their lives by consoling the mind the body often works to heal itself. In this sense, Yoga can be seen not only as a way to get into shape on several levels, but also as a tool for self-healing.

In today's word of information and inter—planetary voyages most of the people find it difficult to devote time towards their health and fitness. This has led to drastic increase in health problems and health related stresses — the number one killer in modern days. Unlike the early part of the century when infectious diseases were the leading killers, today's health problems are mostly related to life style. Cardiovascular disease, heart disease, stroke and arteriosclerosis, chronic lung disease, diabetes mellitus, cirrhosis of the liver, suicide and several forms of cancer are all related to unhealthy life style and behaviour. At one point of time or the other, a doctor comes into the scene in every individual's life. Yoga is simultaneously self-diagnosis, healing, prevention and maintenance. Although it is not a replacement for one's doctor, yet it has been developed and practiced safely and successfully by millions of people who never had doctors, for thousands of years. With the help of Yoga, the doctor and the individual can both monitor the progress and the doctor will definitely learn from the individual how beneficial Yoga really is!

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In the context of "self-diagnosis", Yoga postures and exercises can be easily done and that too, with minimal possible effort. The magic of Yoga is that as we begin the basic stretches, we can immediately discover where out deficiencies are. If we are really up to it, then we should not be discouraged by this. Our body will adopt itself as perfectly as possible to all the things that we have done with it over the course of our entire life up until now. With a modest amount of care and patience, Yoga will trigger our body's natural adaptive and rejuvenating powers. Unless we use it, we will lose it and if we start using it again, we can get most of it back. Some people even claim that Yoga gave them more vitality than they ever had in their lives. 'Even those who began later in life also benefited from its practice.

As for athletes or sportspersons, Yoga can be a powerful enhancement regular training exercises. Adding Yoga in a routine training programme helps develop strength, flexibility, range of motion, concentration, cardiovascular health, and reduces stress, tension and tightness. The most significant benefit of adding Yoga to a training programme is its effect on performance. It allows an athlete to train harder and at a higher level because range of motion is greater and the fear of injury has lessened.

Some people think it is divine, others find it positively addictive and a powerfully effective substitute for negative habits. In challenging those muscles to remodel themselves, we are literally clearing out lots of junk from our tissues - metabolites generated by the exertion as well as toxins that have accumulated over the years because of poor circulation associated with sedentary life style.

CONCLUSION

The essence of Yoga is to make the process as efficient and enjoyable as possible. In the beginning, it is essential that we learn not only what the stretches are, but also how to stretch, how to relax, how to breathe, etc. Then we will really to ready to work out safely! Yoga does not bring away the qualities of genuinity, wholesomeness, compassion, but rather instills them within us. The effects are immediate and the results keep becoming more apparent the longer and more often we engage in the pure self-indulgent healing art of Yoga. Yoga is no less magical than the power of life itself. Unlocking life's wonder is the miracle that this "harness" (Yoga means "yoke" in English) unleashes. Through this art, everyone can strap himself/herself into the Divine and enjoy the ecstasy of freedom from pain and ignorance apart from other gracious rewards like longevity and happiness! It has taken time for us to wind ourselves up in a knot. Naturally, it takes time to unravel! If we are still breathing, it is never too soon, or too late to start!

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A COMPARATIVE STUDY ON SELECTED PHYSIOLOGICAL VARIABLE OF FOOTBALL PLAYERS AT THEIR PRE COMPETITIVE AND POST COMPETITIVE STATE

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ABSTRACT

The purpose of the study was to compare the selected physiological variables of inter university football players of Lakshmibai National University of Physical Education at their pre competitive and post competitive state. the subject for this study were total of sixteen soccer players , aged 20-25 years ,the selected physical variable considered for this study Vital Capacity and Breath Holding Capacity. The data was collected after employing standard test and measurement procedure. The data was subjected to paired t test. In the variable vital capacity the mean and standard deviation score of pre competitive state of football players (4.12±.657) was found to a greater than that of the post competitive vital capacity (3.48±.451). In the variable breath holding capacity the mean and standard deviation score of pre competitive state of football players (29.24±6.81) was found to a greater than that of the post competitive breath holding capacity (27.33±6.71).

INTRODUCTION

1930s Soccer is one of the most popular sports in Europe and the Americas. It has a vivid and interesting history in the world of sports. Early evidence of soccer being played as a sport finds occurrence in China during the 2nd and 3rd centuries BC.

In 1815, a major development took place that made soccer popular in Universities, Colleges and Schools. The popular English School and Eton College came forth with a set of rules, known as the Cambridge Rules.

Firmly establishing the foundation of soccer in 1869, the Football Association strictly banned any kind of handling of the ball. Soccer's popularity spread rapidly during the 1800s as British sailors, traders and soldiers introduced the sport to different parts of the globe. Italians, Austrians and Germans drew to Europe, while Argentina, Uruguay and Brazil adopted the sport in South America. FIFA was established in the year 1904 and by early, different leagues were operating from various countries. FIFA is credited with organizing the first world cup in Uruguay. The history of soccer is rich with events, development and its growing craze all over the world.

Association football, commonly known as football or soccer, is a sport played between two teams of typically eleven players, though other variations in player numbers such as 5 and 7 are also played, with a spherical ball.

METHDOLOGY

Selection of the subject: - Sixteen soccer players were selected for present study. The soccer players selected from Lakshmibai National University of Physical Education (Gwalior).all players were informed precisely regarding the purpose and the procedure of data collection. The age group of the subjects ranged from 20-25 years.

Selection of variable: - The researcher had been selected the following variables for present study: physiological variables: i.e. vital capacity and breath holding capacity.

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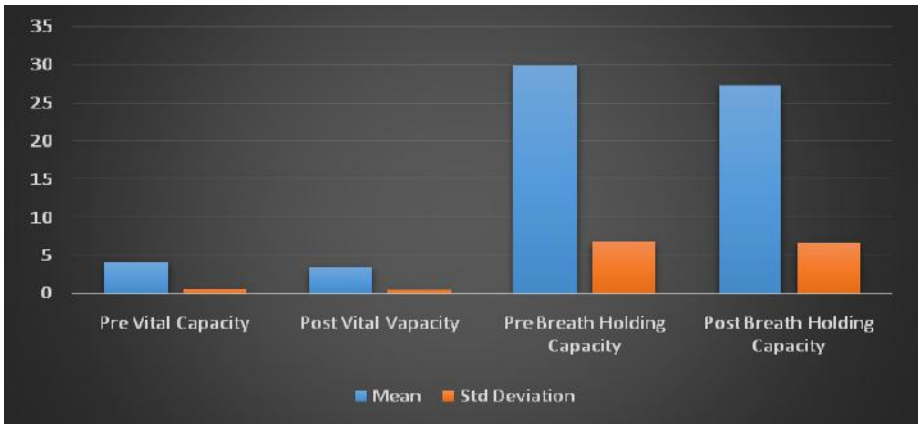
STATISTICAL ANALYSIS

Table- 1
Descriptive Statistics of Selected Physiological Variables of Football Players

Variables	Mean	Std.Deviation
Pre Vital Capacity	4.12	0.657
Post Vital Capacity	3.48	0.451
Pre Breath Holding Capacity	29.94	6.81
Post Breath Holding Capacity	27.33	6.71

Table 1 reveals the descriptive statistics (mean and standard deviation) of selected physical parameters of football players, before and after competition. In the variable vital capacity the mean and standard deviation score of pre competitive state of football players (4.12±.657) was found to a greater than that of the post competitive vital capacity (3.48±.451). In the variable breath holding capacity the mean and standard deviation score of pre competitive state of football players (29.24±6.81) was found to a greater than that of the post competitive breath holding capacity (27.33±6.71).

FIGURE- 1
Graphical Representation of Mean Value of Selected Physiological Variables of Football Players



DISCUSSION/CONCLUTIONS

Exercise increases vital capacity because the lungs need more oxygen to supply the muscles with vital nutrients and the tougher the exercise the more nutrients needed. The lungs expand during this to account for the extra need hence increasing the vital capacity. In the vital capacity also the pre and post competition scores of football players varied significantly. After seeing the mean scores it was understood that the pre competition vital capacity was better than that of the post competition. Though this is a very unusual outcome, this can be attributed to the duration after the cessation of the competition phase. May be the researcher could have reduced the duration when the post data were collected.

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While there was no significant difference found in other variable breath holding capacity before and after competition, the reason of insignificant may be that these variables require more time to show the changes and in the present study all the test were administered in a one month of gap and another reason for insignificant may be of less sample size. Research showed that physiological variable require more duration to change in the functioning.

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EFFECT OF TEAM BUILDING EXERCISES DURING RETREAT ON DEVELOPING PEER RELATIONSHIP

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ABSTRACT

The purpose of this study was to collect information on properties of a groupto check the effect of team building exercise given during retreat program formembers in group. The sample of 20 male and female physical education teacher of a school was taken from physical education department of Delhi public school Allahabad. Their age ranged between 25 to 50 year. The idea was to find out the properties of cohesiveness in a group and the overall best factor among all. The data was analyzed by using the GEQ (Group Environmental questionnaire) including four factors to do a survey after giving a team building program of four days and to know that which factor have high value in group. Data collected before 15 days of retreat program and then after 15 day from the day when the team building program is finished. The purpose of this survey was to check theeffect of team building exercise on subject and then deal in future and modify the program according to the need of improvement where team member are lacking.

INTRODUCTION

Activity of a person makes difference positive or negative to represent a team. Group environmental questionnaire (GEQ) is helpful to measure the properties of team members who represent themselves as team.GEQ help to collect data for a team or a individual who is in a team to get information about that person or about whole team that how much cohesive the individual is or the team member are for each other and hoe much positive or negative they think about the team. There are eighteen aspects in questionnaire which measures general aspect of cohesiveness. Theseaspect are divided in four main factors named as

Attraction of group task -ATGT
Attraction of group social -ATGS
Group integration task -GIT
Group integration social -GIS

These four factor are described by Carron conceptual model where group cohesion is divide in two parts group integration and individual attraction and further sub divide in social aspect and task aspect of cohesion.ATGT Helps to measure the individual's team members feeling about their personal involvement with the group task.ATGS help to measure the individual's team member feeling about personal involvement desire to expected and social attraction with the group.

MATERIAL AND METHODS

The study was conducted on 20 male and female physical education teachers with the age of subjects in between 25 to 50 year, and these subjects were taken from of D.P.S Allahabad School, who took part in school retreat program, conducted every year from the school side, for all teacher. All the factors of group cohesion were measured using below mentioned questionnaire-

GEQ (Group Environment Questionnaire With four important factors of a group.

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Psychological variable to be measured	Tool of Measurement
ATGT ATGS GIT GIS	**Group Environmental Questionnaire**

To determine the effect of team building exercise for peer relationship paired‘t’ test was used using SPSS version 20. Findings pertaining to team building exercises pre and posttest male and female physical education teacher were subject to paired sample statics is used and mean has been given in Table 1.

TABLE-1 Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRE_ATGS	30.40	20	4.80570	1.07459
	POST_ATGS	34.80	20	4.99052	1.11591
Pair 2	PRE_ATGT	25.95	20	3.25212	.72720
	POST_ATGT	30.45	20	3.60519	.80614
Pair 3	PRE_GIT	30.15	20	3.01357	.67385
	POST_GIT	35.10	20	3.90546	.87329
Pair 4	PRE_GIS	20.85	20	4.53379	1.01379
	POST_GIS	24.15	20	6.14110	1.37319

Table 1 Show the mean and standard deviation of male and female physical education teacher’s pre and post test result among four factors of group cohession. In ATGS pre data was 30.40 and post data was 34.80. In ATGT pre data was 25.95 and post data was 30.45. In GIT pre data was 30.15 and post data was 35.10. In GIS pre data was 20.85 and post data was 24.15. Paired Sample statics of factors shows that all the factors increased after giving team building exercises.

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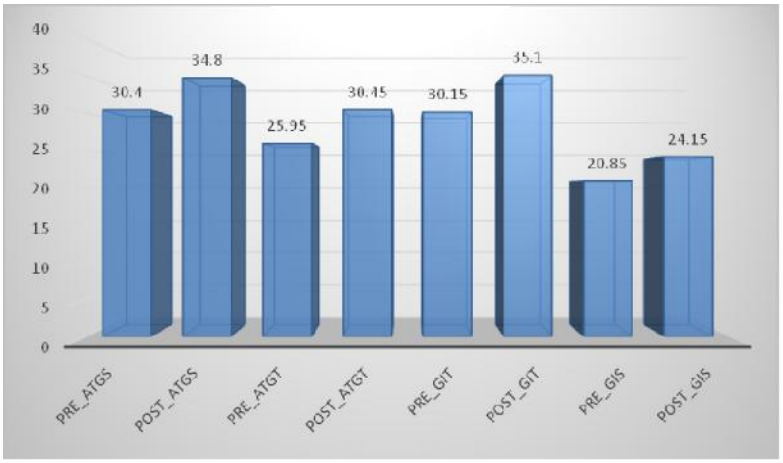
Table-2 Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRE_ATGS - POST_ATGS	-4.40000	2.98064	.66649	-5.79498	-3.00502	-6.602	19	.000
Pair 2	PRE_ATGT - POST_ATGT	-4.50000	2.80038	.62618	-5.81062	-3.18938	-7.186	19	.000
Pair 3	PRE_GIT - POST_GIT	-4.95000	3.36350	.75210	-6.52417	-3.37583	-6.582	19	.000
Pair 4	PRE_GIS - POST_GIS	-3.30000	3.27832	.73305	-4.83430	-1.76570	-4.502	19	.000

Table 2 shows the Paired‘t’ test ratio and mean difference. In ATGS variables the value of t-statistics is -6.602, In ATGT the value of t-statistics is -7.186, In GIT variables the value of t-statistics is -6.582,In GIS variables the value of t-statistics is -4.502and theP-value is 0.00 in all 4 variable which is less than .005, which was found to be significant.

Figure-1
Graphical Representation of Mean Values



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DISCUSSION AND CONCLUSION

The analysis of data revealed that the team building exercises during retreat found to be significant on all four factor of group environmental questionnaire. As the calculated t-value and chart show continues improvement in all factors.

It may be due to the reason that much of the improvement in pear relationship in term of supporting and giving equal chance to each team member after giving the team building game and exercises. The other reason could be that games give a lot of feelings which develop mind in broad aspect of life in social and emotional behavior. On the basis of results we can say that team building games effectively work in improving a group to develop self courage, value of an individual in group,bonding among members and then making trust with all. It's totally depended on the activity or exercises which we are giving to group. And in this sample, exercises and game of team building helped with positive effect.

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