EFFECT OF STEP UP TRAINING AND SAND RUNNING TRAINING ON SELECTED STRENGTH VARIABLES OF BASKETBALL PLAYERS

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ABSTRACT

The study was to find out the effect of step up training and sand running training on selected strength variables. Randomly selected 30 (N = 30) basketball players from various Colleges in Andhra Pradesh were randomly selected and their age group was between 19 to 22 years. They were divided into three groups (n = 10) as Group I, Group II and Group III, in which Group I underwent step up training and Group II underwent sand dune running for a period of six weeks and Group III acted as control group. Step up exercise group after a warm up for 5 minutes underwent 5 different step up exercises with weights such as, step ups, front squats, dead-lift, unilateral leg extension, standing calf raises and finished each session with cool down exercises. Sand Dune running group, after a warm up for 5 minutes underwent climbing sand dune with vertical height of 4 meters and elevation at 45^{o} with variation of slow, medium, high, medium and slow speed running alternatively and finished each session with cool down exercises and the sessions lasted for 40 minutes in each day, on alternate days, forming three days a week. .The investigator selected leg strength and back strength as the strength variables, The collected data from three groups prior to and after completion of the experimental period on selected variables were statistically examined by applying Analysis of Covariance (ANCOVA). The results presented proved that the adjusted mean differences among the groups, step up training, sand dune running and control was significant $P<0.05$ and the results on back strength showed significant improvement at $P<0.05$. The post hoc analysis proved that step up training significantly improved both the strength variables, leg strength and back strength and sand dune running significantly improved back strength. It was concluded that step up training exercises can be better utilized for improving strength variables leg strength and back strength as the same is found to better than sand dune running among basketball players.

Key Words: Step up Training, Sand Running Training, Leg Strength, Back Strength,\

Basketball players.

INTRODUCTION:

The progress of one country depends mainly on the degree of physical fitness of the people. According to Willgoose(1961) "Physical Fitness provides capacity for doing all types of activities". Currently there is wide interest to identify the most effective methods of

training for strength and endurance development and this is of special significance for physical education programmes in schools and colleges. Training is usually defined as systematic process of repetitive, progressive exercise or work involving the learning process and acclimatization. (Lawrence Gray Kumar, 2002). Evidences show the difference between the trained and untrained individuals that the former is able to increase the cardiac output and transport oxygen to the working muscles at a higher rate than the latter.(Clark and Albert, 1952) "Training programme which have been used to improve sprinting speed include weight training, wind sprint stairs sprinting. Such programmes are designed to develop leg strength, leg speed, speed endurance and explosive power. (Miller, 1974)

The Step-up training is influenced by different factors such as height of step, weight bearing etcetera. However, the factors need to be considered is the height of the step. The basic exercise works the hips and thighs, and the step height adjusts things in favour of the quadriceps or hamstrings. A higher step works the hamstrings harder, a lower step targets the quads (Spassov, and Todd,2010) . In addition to the step height, speed and number of reps both play crucial roles in determining the effectiveness of this exercise. The usual rules apply - in general the reps will be lower and the breaks longer when training for maximum strength, and the reps higher/breaks shorter for hypertrophy goals. The starting/finishing distance of the feet from the step also makes a difference, with a larger gap emphasising the Gluteus Maximus and a smaller gap emphasizing quadriceps. And the target muscle group is usually the quadriceps, though the weighting of this can be adjusted by altering the step height and gap as indicated above.

Baschung Pfister P et al. (2013) tested the role of motivation and the effect and feasibility of a training programme. And found 3-month step-up jogging programme is a feasible and effective exercise intervention for physically inactive, middle-aged female. Ko M et al. (2014) assessed the outcomes of a repeated step-up and -down treatment, initiating with the paretic limb, on functional mobility, endurance and found hip flexion on the paretic limb was improved from 11° to 18°, which indicates the normal range of hip motion during the initial swing phase in post-test. Impellizzeri FM et.al. (2008) compared the effects of plyometric training on sand versus a grass surface on muscle soreness, vertical jump height and sprinting ability and found Plyometric training on sand improved both jumping and sprinting ability and induced less muscle soreness. A grass surface seems to be superior in enhancing counter movement jump performance while the sand surface showed a greater improvement in squat jump. Therefore, plyometric training on different surfaces may be associated with different training-induced effects on some neuromuscular factors related to

the efficiency of the stretch-shortening cycle. The reviews proved that there was further scope for research in finding out the influence of step up training and sand running training on selected strength variables of athletes.

METHODOLOGY

To achieve the purpose pre and post test random group research design was adapted and thirty basketball players from different colleges from Hydrabad, were randomly selected and their age group was between 19 to 22 years. The were divided into three groups (n = 10) as Group I, Group II and Group III, in which Group I underwent step up training and Group II underwent sand dune running for a period of six weeks and Group III acted as control group. Step up exercise group after a warm up for 5 minutes underwent 5 different step up exercises with weights such as, step ups, front squats, dead-lift, unilateral leg extension, standing calf raises and finished each session with cool down exercises. Sand Dune running group, after a warm up for 5 minutes underwent climbing sand dune with vertical height of 4 meters and elevation at 45^{o} with variation of slow, medium, high, medium and slow speed running alternatively and finished each session with cool down exercises and the sessions lasted for 40 minutes in each day, on alternate days, forming three days a week. .

The investigator selected leg strength and back strength as the strength variables, The collected data from three groups prior to and after completion of the experimental period on selected variables were statistically examined by applying Analysis of Covariance (ANCOVA). In all the cases to test the significance, 0.05 level of confidence was fixed. Since three groups were involved, whenever significant results were found, Scheffe's post-hoc test was used to find out the significant difference between the paired means of groups.

RESULTS: Tab 1: Results on Calculation of Analysis of Covariance on Strength
(Scores in Kg)

Calculation of Analysis of Covariance on Leg Strength								
	Step up Exercises Group	Sand Dune Running Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre Test Mean	120.70	120.60	120.20	Between	1.4	2	0.70	0.02
				Within	962.1	27	35.63	
Post Test Mean	127.70	125.00	122.00	Between	162.6	2	81.30	2.31
				Within	952.1	27	35.26	
Adjusted Post Test Mean	127.52	124.91	122.26	Between	138.2	2	69.10	8.56*
				Within	209.8	26	8.07	
Mean Diff	7.00	4.40	1.80					

Calculation of Analysis of Covariance on Back Strength								
Pre Test Mean	50.40	48.60	48.30	Between	25.8	2	12.90	1.61
				Within	216.9	27	8.03	
Post Test Mean	54.10	53.10	49.30	Between	128.3	2	64.13	11.87*
				Within	145.9	27	5.40	
Adjusted Post Test Mean	53.22	53.44	49.84	Between	78.5	2	39.25	22.12*
				Within	46.1	26	1.77	
Mean Diff	3.70	4.50	1.00					

Required $F_{(0.05)\,(2,27)} = 3.354$, $F_{(0.05),\,(2,26)} = 3.369$ *Significant

Tab 2: Scheffe's Post Hoc Analysis Results

Post Hoc Analysis for Leg Strength				
Step up Exercise Group	Sand Dune Running Group	Control Group	Mean Difference	Reqd. C.I
127.52	124.91		2.61	3.30
127.52		122.26	5.26*	3.30
	124.91	122.26	2.65	3.30
Post Hoc Analysis for Back Strength				
53.22	53.44		0.22	1.55
53.22		49.84	3.38*	1.55
	53.44	49.84	3.60*	1.55

*Significant

DISCUSSIONS: The results presented in Tables 1 and 2 on leg strength proved that there was significant differences among the treatment groups and control groups as the obtained F value was significant P<0.05. The post hoc analysis proved that adjusted mean differences among the groups, step up training was significantly better than control group and there was no significant difference between sand running group and control group. However, the results on back strength showed that the obtained F value on adjusted means was 17.3 which was significant at P<0.05. The Scheffe's post hoc analysis proved that though the both the experimental treatments significantly improved back strength comparing to control group, there was no significant difference between the treatment groups. Which proved that step up exercises and sand dune running exercises were good for improving back strength of the basketball.

The findings of the study were in agreement with the findings of Ko M et al. (2014) who found hip flexion on the paretic limb was improved and Baschung Pfister P et al. (2013) who found feasibility of a step up training programme to improve strength. Since step up training improved the leg strength and back strength, sand running exercises could only improve back strength of the back strength of the basketball players.

CONCLUSIONS:

It was concluded that step up training exercises can be better utilized for improving strength variables leg strength and back strength as the same is found to better than sand running training among basketball.

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Performance Review and Comparative Study of Breath Holding Time of Selected Players of Kaloji Health University

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Abstract

The purpose of this study was to find out there is any significance difference among sport players with respect to breath holding time of volleyball, Soccer and Basket ball players. Only 120 men volleyball players were selected as subjects at random from Kaloji Health University, Warangal, Telangana India. The selected subjects were divided into three groups according to their performance in three sports namely volleyball, Soccer and Basketball of forty each. The age of the subjects ranged from 19 to 22 years. During the survey Breath holding test was conducted in addition to their regular course of study. The data collected from all three sports on 40 players. The study analyzed by using the analysis of variance (ANOVA), Scheffe's Post-Hoc Test and it revealed that the statistically significant differences were found among three sports. Volleyball and Basketball players have significantly less breath holding time compare with Soccer Players.

Key words: Breath holding time, ANOVA, Post Hoc tests.

I. Introduction

Breath-holding time it has been consider as one of the measure of physical fitness of a player or an Athlete. Breath-holding time (BHT) has been studied at sea level by several authors, and the average breath holding time was found to be around 70 s. The simplest objective measure of breath-holding is its duration. The breath-holding test is simple and rapid.

In this analysis for better understanding of the health- related parameters such as breath holding time have been considered to test the significance among the players. All study subjects were volunteers who gave informed consent for the study procedures. The detailed work is

organized as follows. In section II, materials and methods are given. Results and discussions in section III and in section IV, some conclusions are given.

II. Materials and Methods:

Study group consisted of 120 individual players who are healthy, students studying in first and second year MBBS with age group of 18-21 years. It was a voluntary participation and written consent was taken. Even Students diagnosed who were suffering from any medical disorder were excluded from the study. The data was collected on field. Explanation on the relevance of the study to the players was given before they filled the questionnaire. The identity of respondents was kept anonymous. The study was performed according to accepted practice concerning safety and ethics of human experimentation, according to the standards and guidelines. The procedures were approved by a local ethics committee. All study subjects were volunteers who gave informed consent for the study procedures. The breath-holding technique was used.

Statistical Analysis

The data were analyzed using One-way ANOVA and with Scheffe's Post-Hoc Test. Statistical analysis was carried out using SPSS version 20.0. Student t-test was used to compare the variables under study. The difference was considered significant if the p-value was < 0.05 & highly significant if the p-value was <0.001. The procedure of testing the hypothesis was ended fitness by accepting the hypothesis of rejecting it (the hypothesis). In accordance with the results obtained is relation to the level of confidence, 0.05 level of confidence was considered sufficient for this study. If the obtained value was greater than the table value the null hypothesis was rejected. If the obtained value was less than the table value, the null hypothesis was accepted. The data was analyzed and valid conclusions were drawn.

III. Results and Discussions

The section deals with results and discussions. The result pertaining to the hypotheses about breath holding time and their discussions were presented.

Table-I: reveals the Mean ± SD comparative analysis of lung capacity (breath holding time) of volley ball, soccer and basket ball players. The obtained F-ratio value is 5.39, which is higher than

the table value with 0 .05 level. It indicates that there was significant difference among the groups. To find out significant difference between paired groups, the Scheffe's post-hoc test was applied and the results are presented in Table-II. It is very clear that the mean values of Volley ball, Soccer and Basket ball groups were 40.80, 40.97 and 37.43 respectively. The mean difference between volley ball and Soccer, volley ball and basket ball, Soccer and basket ball were 0.17, 3.37 and 3.53 displayed in Table-III. The confidence interval (CI) value is less than the mean differences of all the three groups. Hence Volleyball and Basketball players have significantly less breath holding time compare with Soccer.

TABLE-1: COMPARATIVE ANALYSIS OF LUNG CAPACITY (BREATH HOLDING TIME) OF VOLLEY BALL, SOCCER AND BASKET BALL PLAYERS

Groups	**Count**	**Sum**	**Mean**	**SD**
Volley ball	60	2458	40.80	7.32
Soccer	60	2448	40.97	5.89
Basket ball	60	2246	37.43	6.67

TABLE – 2 ANALYSIS OF VARIANCE AMONG GROUPS SINGLE FACTOR

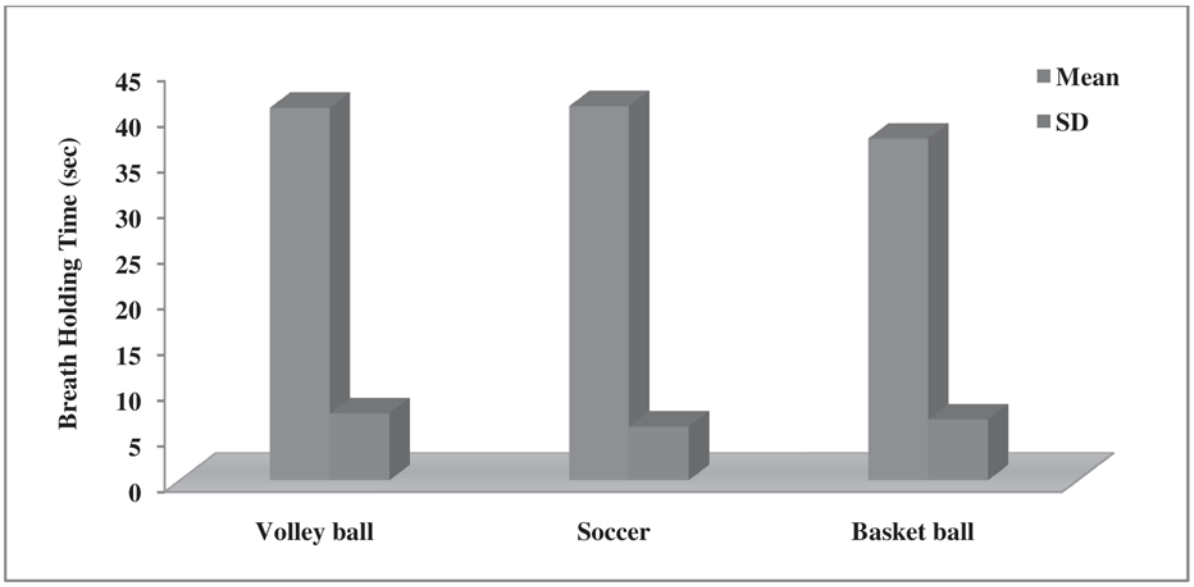
Source of Variation	*SS*	*Df*	*MS*	*F*	*P-value*	*Result*
Between the Groups	476.93	2	238.47	5.39	0.0025*	Significant
Within Groups	7828.27	177	44.23			
Total	8305.2	179				

*Significant at 0.05 level

TABLE -3 SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE POST TEST PAIRED MEANS OF BREATH HOLDING TIME

Parameter	*Volleyball*	*Soccer*	*Basket ball*	*mean difference*	*CI*
Breath Holding Time (in Sec)	40.80	40.97	---	0.17	2.40
	40.80	--	37.43	3.37	
	--	40.97	37.43	3.53	

GRAPH SHOWING THE MEAN, SD LEVEL OF LUNG CAPACITY (BREATH HOLDING TIME) OF VOLLEY BALL, SOCCER AND BASKET BALL PLAYERS OF UNIVERSITY



IV. Conclusion: The results of the study indicate that there is a significant difference in on Breath holding time between the players in three different spots. In the paper, finally we conclude that there is significant change in performance among all Volleyball, Soccer and Basketball players. Also we emphasis that the modern statistical tools play a vital and significant role in validation of results in research and the study of performance analysis of players in various sports, Physical education. Therefore it is necessary to have an idea about few important statistical tools.

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Comparison of agility & speed between female kabaddi & kho-kho players

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INTRODUCTION

Speed: speed is the quickness of movement of limb whether this is the legs of a runner. Speed is an integral part of every sport and can be expressed as one of the combination of the following: maximum speed, elastic strength (power) & speed endurance. Physical fitness refers to the capacity of any athlete to meet the varied physical demands of their sport without reducing the athlete to a fatigued state. Physical fitness has been defined as asset of attributes of characteristics that people have or achieve that relates to the ability to perform physical activity. Physical fitness can also prevent or treat many chronic health condition brought on by unhealthy lifestyle or aging. To say healthy it is important to engage in physical activity.

HYPOTHESIS: It was hypothesized that the kho-kho players may have better agility and speed than kabaddi players.

DELIMITATION: The subjects were selected at random from sri Krishna college of physical education (Bped) nalgonda. The test administrated for on ten kho-kho players and kabaddi players with in the age group of 19-24.

METHODOLOGY: The purpose of the study was to comparison selection of physical fitness comparison of college level kho-kho players and kabaddi players in order to achieve this purpose. Ten kho-kho players and ten kabaddi players from sri Krishna college of physical education (B. P.Ed.) Nalgonda.

EXPERIMENTAL DESIGN: For this study, the subject by selected at random, independently drawn from ten kho-kho players and ten kabaddi players who actively participated in the inter-collegiate tournament in their respective game. Hence the design of the subjects chosen for the study was based on independently random group design.

Agility of players

Speed of player

TEST ADMINISTRATION

s.no	Variable	Facilities
1	Speed	50 yard run
2	Agility	Shuttle run

50yard run: At the whistle subjects is made to run from the starting point to the finish and the time taken to make the run is noted down.

Shuttle run: at the whistle subjects stands at one of the lines at the 2blocks at the other line. on the signal to start , the students runs to the blocks, taken on, and returns to the starting line, and places the blocks behind that line, then returns to the second blocks which is carried across the starting line on the way back. Two trail are permitted statistical techniques. The following statistical procedures were followed to find out selected physical fitness components between the kho-kho and kabaddi players among sri Krishna college of physical education . the research scholar t-ratio calculate the significance.

PRESENTATION AND INTERPRETATION OF DATA: The test conducted by selecting ten kho-kho players for SKCPE Nalgonda college and kabaddi players from SKCPE Nalgonda. The data was collected by conducting speed and agility test. The collected data were subjected to the t-ratio test of analyses for significance.

RESULTS & DISCUSSION

Table-1

50 YARD RUN TEST

THE MEAN STANDARD DEVIATION OF THE MEAN AND T-RATIO OF KHO-KHO AND KABADDI PLAYERS AMONG SRI KRISHNA COLLEGE OF PHYSICAL EDUCATION NALGONDA.

TEAM	VARIABLE	NUMBER OF STUDENTS	MEAN	DIFFERENCE BETWEEN MEAN	STANDARD DEVIATION	t-ratio
KHO-KHO	Speed	10	19	1.30	1.17	2.05
KABADDI	Speed	10	20.3	1.30	1.26	2.05

0.05 level significance

The table 1 shows that the difference between the mean in the bating kho-kho players and kabaddi players. The standard deviation difference between the wars the mean difference between the wars the calculation of t-ratio was found to be significance at 0.05 level of confidence the hypothesis was accepted.

TABLE-2

SHUTTLE RUN

THE MEAN STANDARD DEVIATION ,STANDARD ERROR OF THE MEAN & T-RATIO OF KHO-KHO AND KABADDI PLAYERS AMONG SRI KRISHNA COLLEGE OF PHYSICAL EDUCATION NALGONDA.

TEAM	VARIABLE	NUM.OF STUDENTS	MEAN	DEFFERENCE BETWEEN MEAN	STANDARD DEVIATION	DEFFERENCE BETWEEN ERROR OF SD	t-ratio
KHO-KHO	Agility	10	8.38	1.02	0.35	----	7.29
KABADDI	Agility	10	9.40	1.02	0.33	-----	7.29

0.05 significance

The table2 shows that the difference between the mean in bating kho-kho players and kabaddi players. When were the standard deviation difference between the wars the mean difference between the war of calculation of t-ratio was found to be significance at 0.05 level of confidence the hypothesis was accepted.

CONCLUSIONS

The following conclusions were made on comparing speed and agility, between ten kho-kho and kabaddi players. It was found out the kho-kho players had better speed and agility then kabaddi players in SKCPE college.

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Comparatives study of selected Physical variable of Men player of small area and large area games.

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Abstract:

The purpose of this study to compare selected physical variables between small area and large area games players. Results were statically analysed in all cases the 0.5 levels of confidence fixed the test the level of significance which was considered as an appropriate.

Introduction:

Physical fitness can be defined as a general state of health and well-being or more specifically as the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise, hygene and rest. It is a set of attributes or characteristic seen in people and which related to the ability to perform a given set of physical activities.

Fitness is a multifaceted characteristic that encompasses several physiologically independent components. These components are muscular strength, muscular endurance, anaerobic power, cardio respiratory endurance, flexibility. Fitness can be developed with conditioning program that combine proper individual exercise techniques in a manner that is consistent with several established principles of training.

Methodology:

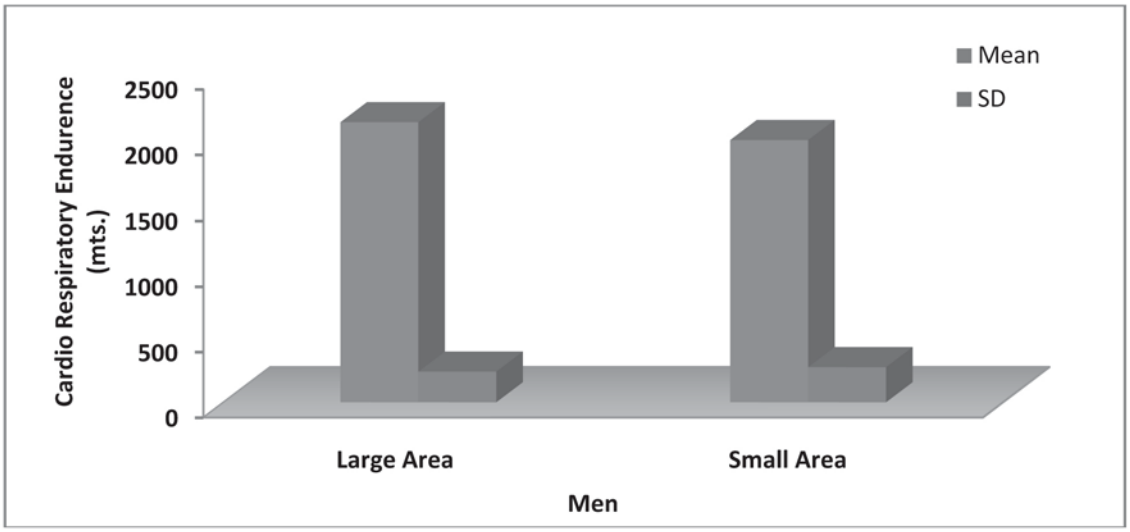
The purpose of study to compare the selected physical varial such as speed, agility and cordio respirary endurance. To achieve the purpose 50 men players of large are and 50 men of small area games studying in college of Physical Education Kakatiya University, Warangal ranged area between 18-24 were selected as subjects. ie., test speed, 50 meters Run (sprint) to test cardio respiratory endurance. Cooper 12 miters run (men) and shuttle run (4 x 10 yards) to test the agility was administered. Experimental design used for this study was random group design. The purpose of this study to compare selected physical variables between small area and large area games players. Results were statically analysed in all cases the 0.5 levels of confidence fixed the test the level of significance which was considered as an appropriate. This entire statistical analysis were done by Vring SPSS-20.0, minitab and graph pad (PRISM-0).

Dimensions:

A COMPARATIVE ANALYSIS OF CARDIO RESPIRATORY ENDURANCE (mts.) IN MEN BETWEEN LARGE AREA AND SMALL AREA GAMES

Table-1

Men	Cardio Respiratory Endurance (mts.)	
	Large Area	Small Area
Mean	2133.4	1997.2
SD	234.24	268.33
Minimum	1710	1500
Maximum	2570	2450
Mean difference	136.2	



Results-1

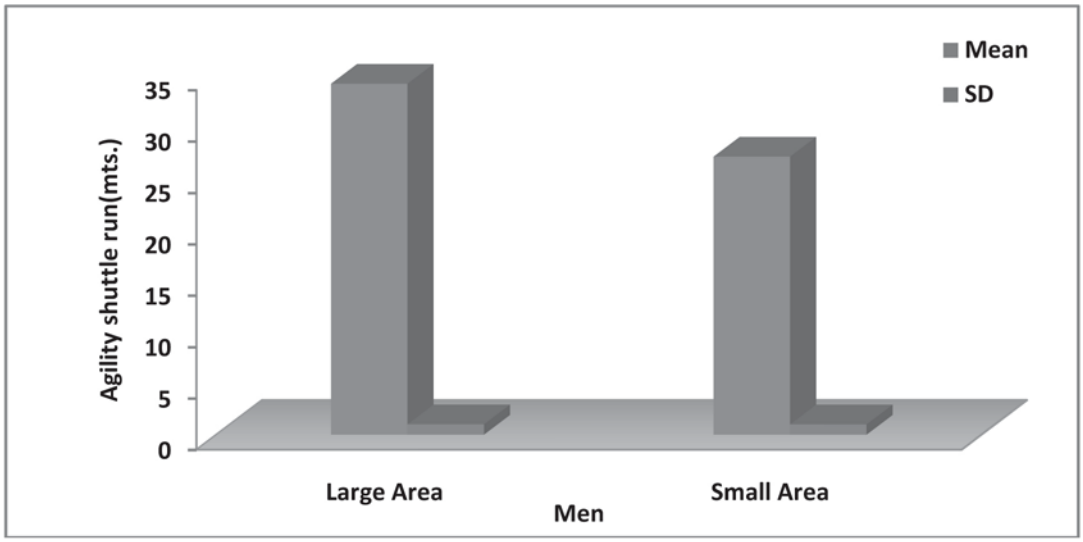
The Table – 1 reveals the mean and standard deviation values of cardio respiratory endurance (mts.) in men between large area and small area games are 2133.4 ± 234.24, 1997.2 ± 268.33 respectively. In each area the maximum and minimum endurance performance were found to be 2570, 1710 and 2450, 1500 respectively.

From the above table and graph it is observed that there is a mean difference of 136.2mt. between large area and small area games. Thus it can be inferred that the mean endurance of men in large area games is more than mean endurance of men in small area games.

A COMPARATIVE ANALYSIS OF AGILITY SHUTTLE RUN (MTS.) IN MEN BETWEEN LARGE AREA AND SMALL AREA GAMES

Table-2

Men	Agility shuttle run(mts.)	
	Large Area	Small Area
Mean	34.16	27.07
SD	1.01	1.00
Minimum	31.2	24.33
Maximum	36.1	28.82
Mean difference	7.09	



Results -2:

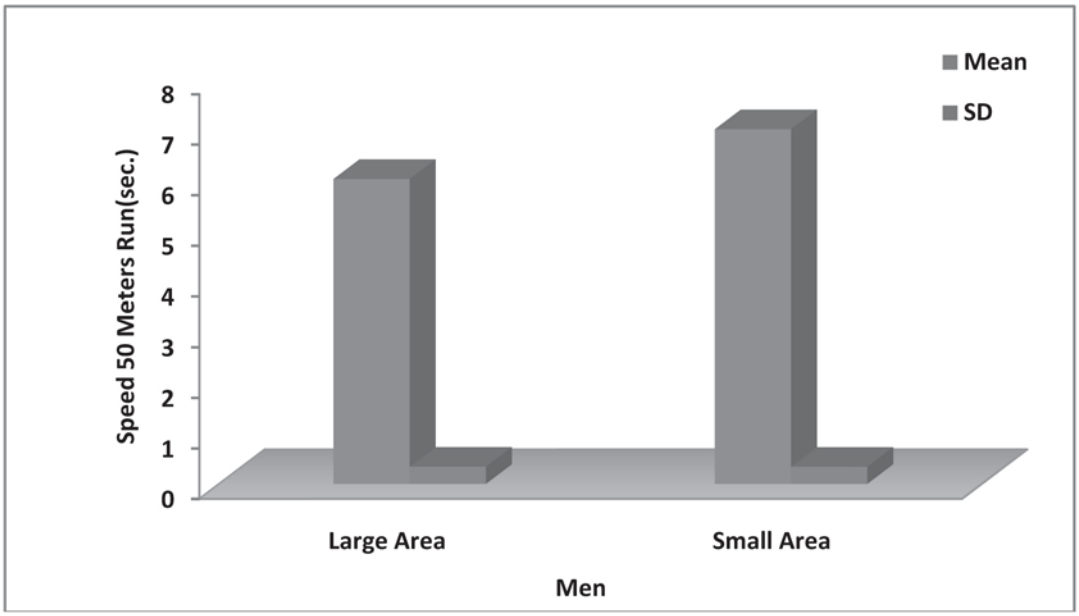
The Table – 2 reveals the mean and standard deviation values of agility shuttle run (mts.) in men between large area and small area games are 34.16 ± 1.01, 27.07 ± 1.00 respectively. In each area the maximum and minimum agility shuttle run were found to be 36.1, 31.2, and 28.82, 24.33 respectively.

From the above table and graph it is observed that there is a mean difference of 7.09 mt. between large area and small area games. Thus it can be inferred that the mean agility shuttle run in men from large area is more than mean agility shuttle run in small area game.

A COMPARATIVE ANALYSIS OF SPEED 50 METERS RUN (SEC.) IN MEN BETWEEN LARGE AREA AND SMALL AREA GAMES

Table-3

Men	Speed 50 Meters Run(sec.)	
	Large Area	Small Area
Mean	6.02	7.01
SD	0.34	0.34
Minimum	5.48	6.53
Maximum	6.5	7.7
Mean difference	1.2	



Results -3:

The Table –3reveals the mean and standard deviation values of speed 50 meters run(sec.) in men between large area and small area games are 6.02 ± 0.34, 7.01 ± 0.34 respectively. In each area the maximum and minimum speed 50 meters run were found to be 6.5, 5.48 and 7.7, 6.53 respectively.

From the above table and graph it is observed that there is a mean difference of 1.2 sec. between large area and small area games. Thus it can be inferred that the mean speed 50 meters run in men from large area is more than mean speed 50 meters run in small area game.

Results - 4

Results is "there is no significant difference in Cardio Respiratory Endurance (mts.) of men players between large area and small area games.

Table-4

	Cardio Respiratory Endurance (mts.)	
	Large Area	Small Area
Mean	2133.4	1997.2
SD	234.24	268.33
d.f	98	
t-value	2.70	
t-table	1.96	
p-value	0.008	
Result	Significant	

Results -5

Table 4 shows the Mean values, SD, D.F, t value and p-value in cardio respiratory endurance (mts.) of men players between large area and small area games in relation to their performance.

The mean, SD values of men players between large area and small area games were 2133.4, 234.24 and 1997.2, 268.33 respectively. The observed and table (critical) values of t-test respectively, 2.70, 1.96 and p-value is 0.008.

The observed values from the above table indicate significant difference in Cardio Respiratory Endurance (mts.) of men players between large area and small area games since the obtained p value is <0.001. Thus the result indicates cardio respiratory endurance of men in large area games is significantly better than small area games. Hence, the hypothesis is rejected.

Results -6

Results is "there is no significant difference in agility shuttle run (mts.) of men players between large area and small area games.

Table-5

Men	**Agility shuttle run(mts.)**	
	Large Area	**Small Area**
Mean	34.16	27.07
SD	1.01	1.00
d.f	98	
t-value	35.18	
t-table	1.96	

p-value	0.00002
Result	Significant

Results -7

Table 5 shows the Mean values, SD, D.F, t value and p-value in agility shuttle run (mts.) of men players between large area and small area games in relation to their performance.

The mean, SD t-values of men players in between large area and small area games were 34.16, 1.01 and 127.07, 1.00 respectively. The observed and table (critical) values of t-test respectively, 35.18, 1.96 and p-value is 0.00002.

The observed values from the above table indicate significant difference in agility shuttle run (mts.) of men players between large area and small area games since the obtained p value is <0.001. Thus the result indicates cardio agility shuttle run of men in large area games is significantly better than small area games. Hence, the hypothesis is rejected.

Results -8

A result is "there is no significant difference in speed 50 meters run (sec.) of men players between large area and small area games.

Table-6

Men	Speed 50 Meters Run(sec.)	
	Large Area	**Small Area**
Mean	6.02	7.01
SD	0.34	0.34
d.f	98	
t-value	14.52	
t-table	1.96	
p-value	0.00	
Result	Significant	

Results-9

Table 6 shows the Mean values, SD, D.F, t value and p-value in speed 50 meters run (sec.) of men players between large area and small area games in relation to their performance.

The mean, SD t-values of men players in between large area and small area games were 6.02, 0.34 and 7.01, 0.34 respectively. The observed and table (critical) values of t-test respectively, 14.52, 1.96 and p-value is 0.00.

The observed values from the above table indicate significant difference in speed 50 meters run (sec.) of men players between large area and small area games since the obtained p value is <0.001. Thus the result indicates speed 50 meters run

(sec.) of men in large area games is significantly better than small area games. Hence, the hypothesis is rejected.

CONCLUSION:

- Comparative study of physical fitness variables such as cardio respiratory endurance (mts.) it was observed that the mean endurance of men in large area games is higher than mean endurance of men in small area games.

- In comparative analysis of physical fitness variables such as agility shuttle run (mts.) in men between large area and small area games it can be inferred that the mean agility shuttle run in men from large area is significantly higher than mean agility shuttle run in small area game.

- Physical fitness variables such as speed 50 meters run (sec.) in men between large area and small area games. It can be inferred that the mean speed 50 meters run in men from large area is significantly higher than mean speed 50 meters run in small area game.

DIFFERENCES IN PLAYING REVERSAL BALLS ON MATCHES OF THE FINALISTS ON THE FOOTBALL WORLD CHAMPIONSHIP - 2010

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Abstract

The reversal ball is one of technical and tactical element which is performed in the attack phase of football game in all three zones of the field. The work represents an attempt of deeper understanding the structure of competitive activity in football game, what can have practical value in efficient programming in the preparation of football players. In the work are evidenced frequency of playing reversal balls per 7 games (total of 14) played by the Representation of Spain and the Netherlands on this Championship. Here were represented the results related to playing of reversal balls with one touch i.e. „playing from the first". In the processing of the data collected is applied the statistical software SPSS 15. For comparison of the evidenced frequencies received by observation of the matches of the two Representations recorded on DVD is applied the nonparametric Man Witni U test technique. On 14 observed games were in total observed 693 played reversal balls with one touch. Of this number the Representation of Spain played 398, and the Representation of the Netherlands 295. From six observed variables statistically significant differences were observed by two variables. And that when were played reversal balls with one touch to the same player from which the ball is received, and that in the zone of attack organization. Z value is – 1.994, and the significance level 0,046. The second variable by which is determined statistically significant difference is by playing of reversal balls with one touch to the same player from which the ball is received and that in the zone of final attack. Keywords: reversal ball, FIFA World Cup 2010, the zone field

Introduction

The reversal ball is one of technical and tactical element which is performed in the attack phase of football game in all three zones of the field. As reversal ball are evidenced all balls that ranged in the opposite direction in relation to the opponent's goal, respectively the balls directed towards goals of the attacking team. In the literature and on Internet site dedicated to football topics can be fined also others names such as reverse pass or backward

pass. The work represents the attempt of deeper introduction of the structure of the competitive activity of football game, what can have a practical value for efficacious programming football player preparation. During a game players perform about 1100 different activities as: transition from standing in jogging, ball passing, changing of directions, jump, etc. (Milanović, 2007) . In the work are evidenced frequency of playing reversal balls per 7 games (total of 14) played by the Representation of Spain and the Netherlands on this Championship. As on the occasion of different ways of playing the ball and the reversal ball can beplayed with one touch so-called ''playing from the first ball '' , with two, three, four and more ball touches. In the work are represented the results which are related to playing reversal balls '' from the first ball ''. The usual field division in three zones is used : defense zone, organized attack zone and final attack zone. Average hit of the Barcelona football player Messi on the observed games of the Champions League in the season 2008/2009 was 3.10 per ball possession. The reversal ball is played to the football player from which is the ball received or to third player in the imaginary triangle which consists of the player who starts the ball , the player who played the return ball and the player who receives the ball. In a previous study was found that those two teams have significant differences in the method of corner kicks. In modern football every 1.8 to 2.2 second occurs a ball action, and on a football game are played 2.500 to 3.000 actions '' related to the ball'' (Birman, 2011). In a previous study on the sample of 2.112 situations of handover ball on the matches on World Championship 2010 was found that the highest precision of ball passing in football is in case of passing the ball with three touches (ball reception, one guidance and ball passing),

Methodology:

In this work the research focus is on tracking the frequency of technical- tactical assets of the reversal balls played with one touch so-called from the first ball“. This technical -tactical element is used in the football attack phaze. – The first variable is represented by reversal balls played in the defense zone to the same football player from which is the ball received – The second variable is represented by reversal balls played in the defence zone to third football player in imaginery triangle constituting by football player from which the ball is started , football player who played the reversal ball and the football player who accepts such played ball. The third variable is represented by reversal balls played to the same football player from who the ball is received in the organized attack zone – The fourth

variable is represented by reversal balls played to the third football player in the organized attack zone (tp1toaz). – The fifth variable is represented by reversal balls played to the same player from who the ball is received in the final attack zone. The sixth variable is represented by reversal balls played to third player in the final attack zone. Processing of collected data is published with Statistical Software SPSS 15. For comparison of obtained frequencies on the observed recorded matched of the two National teams is applied the nonparametric Mann-Whitney technique U test.

Results

In a total of 14 observed games are evidenced 693 reversal balls with one ball touch i.e. 'playing from the first ball'. From this number the National team of Spain played 398 and the Netherlands 295. The player of the National team of Spain performed 115 reversal balls to the player from whom the ball is received, and 283 reversal balls are played to third player in imaginery triangle constituting by football player from which the ball is started , football player who played the reversal ball and the football player who accepts such played ball.

The player of National team of the Netherlands played 58 reversal balls to the player from whom the ball is received, and 237 reversal balls were played to third player. In the defense zone is in total played 56 reversal balls with one touch. From this number the football player of National team of Spain played 22, and the National team of the Netherlands 34 reversal balls with one touch. In the organized attack zone is in total played 591 reversal balls with one touch. The player of National team of Spain played 341, and the player of National team of the Netherlands 250. In the final attack zone is in total played 46 reversal balls with one touch. From this number the National team of Spain played 35, and the National team of the Netherlands 11. For the first variable Z valued is -0.071, with level significance of 0.943. Probability value (p) is not less or equal to 0.05, so that this result (z) is not significant. This means that there is no statistical significant differences between the National teams of Spain and the Netherlands in playing reversal balls with one touch to the same player from whom the ball is received, and that in the defense zone. For the second variable Z valued is -1.488, with level significance of 0.137. Probability value (p) is not less or equal to 0.05, so that this result (z) is not significant. This means that there are no statistical significant differences between the National teams of Spain and the Netherlands in playing reversal balls with one touch to third player in the defense zone.

Table No. 1 Z valued, Middle rank and Level of significance

Variable	z value	Middle rank	Level of significance
Same player 1 touch	-0.071	7.43	0.943
defense zone		7.57	
Third player 1 touch	-1.488	5.86	0.137
defense zone		9.14	
Same player 1 touch	-1.994	9.71	0.046
zone of organized attack		5.29	
Third player 1 touch	-1.342	9.00	0.180
zone of organized attack		6.00	
Variable	z value	Middle rank	Level of significance
Same player 1 touch	-2.622	10.00	0.009
final attack zone		5.00	
Third player 1 touch	-1.716	9.29	0.086
final attack zone		5.71	

For the third variable Z valued is -1.994, with level significance of 0.046. Probability value (p) is equal to 0.05, so that result (z) is significant. This means that there are statistical significant differences between the National teams of Spain and the Netherlands in playing reversal balls with one touch to the same player from whom the ball is received in the organized attack zone. For the fourth variable Z valued is -1.342, with level significance of 0.180. Probability value (p) is not less or equal to 0.05 so that this result (z) is not significant. This means that there are no statistical significant differences between the National teams of Spain and the Netherlands in playing reversal balls with one touch to third player in organized attack zone. For the fifth variable Z valued is -2.622, with level significance of 0.009. Probability value (p) is less than 0.05, so that result (z) is significant. This means that there are statistical significant differences between the National teams of Spain and the Netherlands in playing reversal balls with one touch to the same player from whom the ball is received in the final attack zone.

For the sixth variable Z valued is -1.716, with level significance of 0.086. Probability value (p) is not less or equal to 0.05 so that this result (z) is not significant. This means that there is no statistical significant differences between the National teams of Spain and the Netherlands in playing reversal balls with one touch to third player in in the final attack zone.

Discussion

This study revealed significant differences in the application of technical –tactical element in playing reversal ball by the National team of Spain and the Netherlands in case of playing ‘’from the first ball’’ to the same player from whom the ball is received in the organized attack zone, and in case of playing to the same player ‘’ from the first ball’’ in the final attack zone. Playing of reversal balls in all zones is one of the characteristics of modern’s football game which is the best representative the World and European Champion National team of Spain. The differences can be explained by the fact that the National team of Spain has a higher percentage of ball possession than their opponents and during this period appears this difference in number of playing technical-tactical element of reversal ball. In the final game against the National team of the Netherlands the relationship of ball possession was 56 % to 44 % in favor of the National team of Spain. Assumption is that there is a difference in the application of other technical-tactical elements in the game of the two National teams and this could be the target of future researches. For the theory and practice of football game would be interesting to investigate whether there were statistically significant differences in the game of the two National teams, related to playing of reversal balls with two, three, four and more ball touches.

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A COMPARATIVE STUDY ON SELECTED PHYSICAL FITNESS COMPONENTS OF KABADDI AND KHO-KHO PLAYERS

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INTRODUCTION

Kabaddi is a game of speed, strength, strategy, and most importantly lung power. First you will need twenty-four people split into two teams of twelve. Only seven players per team are on the play in field at the same time the remaining teammates are reserves that can 'sub in' later. The two teams go to opposite sides of the field, which is divided into two equal sections. Flip to see who goes first. That team starts out on offence and the two teams alternate offence/defense each turn until the game is over. Today the game is played worldwide (yes, there an American kabaddi team) their even an official kabaddi organization, the kabaddi federation of India (KFI) founded in 1950 that regulates play and rules and keeps a bunch of records and stuff. Not ready for the big leagues? Try the amateur kabaddi federation (AKFI). Physical fitness is the fundamental necessity for any sporting activity. Motor qualities such a speed, strength, endurance, and flexibility along with physical fitness are essential for excellence in sports. Sports trainers and coaches are emphasizing on improving the physical fitness and motor qualities of the players, which is also known as conditioning. A good conditioning program is the back-bone of the over-all training of the sports persons. Physical fitness is categorized into general and specific fitness. General fitness refers to the motor qualities required in any sports persons Irrespective of the sports discipline. Such as speed, strength, flexibility, endurance and co-ordination. Each and every sport demands certain motor qualities above the ordinary. Specific fitness is the intensified level of motor qualities achieved by the sports persons that is required by the specific sport.

OBJICTIVES OF THE STUDY: To find out the different between physical fitness components of kabaddi and KHO-KHO players such as speed, explosive strength, cardiovascular endurance, coordinative ability, and flexibility.

HYPOTHESIS OF THE STUDY: There will no significant difference in physical fitness factors of kabaddi and KHO-KHO players.

DELIMITATIONS OF THE STUDY

The study will be delimited to purposively selected 100 female subjects age ranking from 19 to 23 years of Kakatiya University Warangal, participated at inter-colligate Kabaddi and KHO-KHO competition.

In Dependent variable

Physical fitness components

1. Speed
2. Explosive strength
3. Cardiovascular endurance
4. Flexibility

Test Administration

Speed	30m. sprint
Explosive strength	Standing broad jump
Cardiovascular strength	12 min. run/walk test
Flexibility	Sit/bend and reach test

METHODOLOGY: For the purpose of the study one hundred players – 50 from the game of kabaddi and 50 from the KHO-KHO has been selected on purposively and randomly basis. All the subjects were regularly practicing and competing in their respective sports competition. Health and physical education is defined and the process by which individuals and groups of people learn to behave in a manner conductive to the promotion, maintenance or restoration of health. It is a continuing process of promoting environmental and life style changes to facilitate their objective.

In this modern area of competition the psychological preparation of team is as much important as teaching the different skills of a game on the scientific lines. The tern is prepared not any to play the games also to win the games it is not the proficiency in the skills which gives victory but more important is the spirit of the players, with which they play and perform their best in the competition.

RESULTS:

The following variables were found significant at both 0.05 and 0.01 level of confident such as

variable	test	T ratio
Speed	30m dash	**5.86**
Explosive strength	Standing broad jump	**4.21**
Cardiovascular endurance	12 min. run/walk	**4.86**
Flexibility	Sit/bend and reach test	**5.51**

DISCUSSION

- The significant difference was found in the speed ability -30m sprint test the KHO-KHO players group had better speed in comparison to the kabaddi players group.
- The significant group was found in the standing broad jump a test of explosive strength in relation to the kabaddi and KHO-KHO players. The kabaddi player group had high explosive strength, showing greater jumping ability then the KHO-KHO player group.
- The significant difference was found in the sit and reach test in the KHO-KHO players group had better hips and legs flexibility in comparison to the kabaddi players groups.
- The significant difference was found in the 12 min run/walk test in the KHO-KHO layers group had better cardiovascular endurance in comparison to the kabaddi player group

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AN ANAYLSIS OF REGISTRANCE TRAINING AND PLYOMETRIC TRAINING IN SERIES AND PARALLEL ON MOTOR FITNESS COMPONENTS

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Abstract: *Physical fitness is to the human body what fine-tuning is to an engine. Fitness is the state which characterize the degree to which the person is able to function. Sports training is a pedagogical process, based on scientific principles aiming at preparing sportsmen for higher performance in sports competitions. Sport training is done for improving sports performance.*

Introduction:

Physical fitness is to the human body what fine-tuning is to an engine. Fitness is the state which characterize the degree to which the person is able to function. Sports training is a pedagogical process, based on scientific principales aiming at preparing sportsmen for higher performance in sports competitions. Sports traiing is done for improving sports performance. The aim of sports training is to improve rapidly the sports performance of a sportsperson particularly in sports competitions which is mainly based on his physical, psychological, intellectual and technical capacities and capabilities.

Resistance training can prudence the desired by many individuals. Plyometrics is a popular training used by many coaches today. It has been routed as a way to bridge the gap between sheer strength and power. The term plyometrics can be used to describe any exercise that allows the athletes to take advantage of the stretch shortening cycle to produce an explosive movement. Although plymetric training has been around for many years, there is still debate on its effectiveness and safety.

Plyometrics is a common training methodology used by competitive athletes to develop speed and power. Resistance training is the ideal counterpart of plyometric training for, it helps prepare the muscles for the rapid impact loading of plyometric exercise. In resistance training one works to develop the eccentric phase of muscle contraction by first lowering the body or weight and then overcoming the weight using a concentric contraction.

Methodology: The purpose of study was to find out the effect of of resistance training and plyometric training in series and parallel. On selected motor fitness components. To achieve

this purpose, forty five women students studying bachelor's degree during the academic year 2012-2015 in the department of physical education and sports sciences, Annamalai University, Annamalai Nagar, Tamil Nadu, India were selected as subjects. As per the records, their age ranged from 18 to 22 years. The selected subjects were divided into three equal groups and each group consisted of fifteen subjects. Group I acted as control who did not participate in any special training apart from their regular physical education programme in the curriculum. Group II underwent series training of resistance and plyometric training (resistance training for first six weeks and plyometric training for remaining six weeks), Group III underwent parallel training of resistance and plyometric training (resistance and plyometric trainings in alternate days and alternate weeks). Groups II and Group III underwent their respective training programme for four days per week for twelve weeks.

Flexibility is an absolute necessity for optimum performance. Hence, flexibility was selected as one of the criterion variables. Strength is the key to success in modern athletics. Hence, strength was selected as one of the criterion variables.

The present study was undertaken to assess the effects of resistance training and plyometric training in series and parallel on selected motor fitness components such as flexibility & strength.

Table-1: The selected Criterion variables and their Standardize Tests:

Sl. No.	Variables	Tests
1	Flexibility	Sit and Reach
2	Strength	Push- ups

Table-2: Intra Class Co-Efficient of Correlation Values on Selected Criterion Variables:

Sl. No.	Variables	"R" Value
1	Flexibility	0.85
2	Strength	0.52

Significant at .01 level of confidence.

(The table value required for significant at .01 level of confidence is 0.767)

Experimental Design and Statistical Procedures: The pre and psot test random group design was used as experimental design. The purpose of the study was to find out the effects of resistance training and plyometric training in series and parallel on selected motor fitness components. Achieve the purpose of the study, forty five women students studying bachelor's

degree in the Department of Physical Education and Sports and Sciences, Yogi Vemana University were selected as subjects at random and were divided into three equal groups each group consisted of fifteen subjects. Group I acted as control, who did not participate in any special training. Group II underwent series training (resistance training programmes for four days per week for twelve weeks.

The following motor fitness variables such as flexibility and strength in terms of vertical distance and explosive power in terms of horizontal distance were selected criterion variables prior to and immediately after the training programme as pre and post test respectively. The analysis of convince was used to find out the significant difference differences, if any, among the groups on selected criterion variables separately. Since three groups were involved, whenever the "F" ratio for adjusted post test mean was found to be significant, the Scheffe's test was applied as post HOC test to find out the paired mean differences, if any. In all cases, 05 level of confidence was fixed to test the significance, which was considered appropriate.

Flexibility: The analysis of covariance for the pre and post tests data on flexibility of control group, series training group and parallel training groups were analysed and are presented in Table-1

Table-1
Analysis of Covariance for the Pre and Post Tests Data on Flexibility of Control, Series Training and Parallel Training Groups

Test	Control Group	Series Training Group	Parallel Training Group	Source of Variance	Sum of Squares	DF	Mean Squares	'F' Ratio
Pre Test								
Mean	22.27	23.80	21.47	Between	42.17	2	21.09	0.71
S.D	1.67	1.48	1.54	Within	1245.07	42	29.64	
Post Test								
Mean	22.47	31.90	33.41	Between	933.91	2	466.96	20.39
S.D	1.64	1.49	1.42	Within	962.00	42	22.90	
Adjusted Post Test				Between	961.31	2	480.66	
Mean	22.42	30.72	33.21	Within	3933.86	41	95.95	5.01*

* significant at .05 level of confidence.

[The table values required for significance at .05 level of confidence for 2 and 42 and 2 and 41 are 3.22 and 3.23 respectively]. The table 4.5 shows that the pre test mean values of control, series training and parallel training groups on flexibility are 22.27, 23.80 and 21.47 respectively. The obtained -F" ratio of 0.71 for pre test scores is less than the required table value of 3.22 for significance with df 2 and 42 at 105 level of confidence. The post test mean values of control, series training and parallel training groups on flexibility are 22.47, 31.90 and 33.41 respectively. The obtained "F" ratio of 20.39 for post test scores is greater than the required table value of 3.22 for significance with df 2 and 42 at .05 level of confidence. The adjusted post test mean values of control. series training and parallel training groups on flexibility are 22.42, 30.72 and 33.21 respectively. The obtained "' ratio of 5.01 for adjusted post test scores is greater than the required table value of 3.23 for significance with df 2 and 41 at .05 level of confidence. The results of the study indicates that there is a significant difference, among control. series training and parallel training groups on flexibility. To determine which of the three paired means had significant difference. The Scheffe's test was applied as post hoc test and the results are presented in Table -2.

Table —2

The Scheefe's test for Differences Between the Adjusted post test Paired Means on Flexibility.

Adjusted post Test Means			**Mean difference**	**Confidence intent**
Control group	Series Training group	Parallel training group		
22.42	30.72	--	8.30*	2.41
2/.42	—	33.21	10.79*	2.41
--	30.72	33.21	2.49*	2.41

• Significant at .05 level of confidence

Table 2 shows that the man difference values on flexibility between control group and series training group. Control group and parallel training group and series training group and parallel training group are 8.30, 10.79 and 2.49 respectively which are greater than the confidence interval value of 2.41. the results of the study shows that significant difference exist between control

group and series training group, control group and parallel training group however, the improvement of flexibility was significantly higher for the parallel training group than the series training group. It may be concluded that parallel training is better than the series training in improving the flexibility. Strength

The analysis of covariance for the pre and post tests data on strength of control group, series training group and parallel training group were analysed and are presented in Table -3.

Table - 3
Analysis of Covariance for the Pre and Post Tests Data on Strength of Control, Series Training and Parallel Training Groups

Test	Control Group	Series Training Group	Parallel Training Group	Source of Variance	Sum of Squares	DF	Mean Squares	Ratio
Pre Test								
Mean	17.31	18.12	19.46	Between	36.58	2	18.29	
								2.16
S.D	1.92	1.89	1.76	Within	354.33	42	8.44	
Post								
Test								
Mean	17.92	23.49	26.17	Between	134.18	2	67.09	
								9.01*
S.D	1.91	1.74	1.66	Within	312.8	42	7.45	
Adjusted								
Post				Between	130.82	2	65.41	56.39•

The table - 3 shows that the pre test mean values of control series training and parallel training groups on strength are 17.31, 18.12 and 19.46 respectively. The obtained *7' ratio of 2.16 for pre test scores is less than the required table value of 3.22 for significance with df 2 and 42 at .05 level of confidence. The post test mean values of control, series training and parallel training groups on strength are 17.92. 23,49 and 26.17 respectively. The obtained "F" ratio of 9.01 for post test scores is greater than the required table value of 3.22 for significance with df 2 and 42 at .03 level of confidence. The adjusted post test mean values of control, series training and parallel training groups on strength are 17.94. 23.62 and 26.09 respectively. The obtained —‘‘F’’ ratio of 56.39 for adjusted post tests scores is greater than the required table value of 3.23 for significance with df 2 and 41 at .05 level of confidence.

The results of the study indicates that there is a significant difference. among control, series training and parallel training groups on strength. To determine which of the three paired means had a significant difference, the Scheffe's test was applied as post hoc test and the results are presented in table 4

Table —4

The Scheeff's test for Differences Between the Adjusted post test Paired Means on Strength

Adjusted post Test Means			**Mean difference**	**Confidence interval**
Control group	**Series Training group**	**Parallel training group**		
17.94	23.62	—	5.68*	2.39
17.94	--	26.09	8.15*	2.39
—	23.62	26.09	2.47*	2.39

* significant at .05 level of confidence

Table 4.8 A shows that the mean difference values on strength between control group and series training group, control group and parallel training group and series training group and parallel training group are 5.68, 8.15 and 2.47 respectively which are greater than the confidence interval value of 2.9. the results of the study shows that significance difference exist between control group and series training group and parallel training group on strength. However, the improvement of strength was significantly higher for the parallel training group than the series training group. It may be contused that parallel training is better than the series training group. It may be concluded that parallel training is better than the series mining in improving the strength. The adjusted post test values on strength of control group series training group and parallel training group are graphically represented in figure 1V.

Discussion of Findings: The results of the study showed that there was significant improvement on selected criterion variables such as flexibility and strength endurance, due to the twelve weeks of resistance training and ploYometric training in series and parallel.

CONCLUSION: There was a significant difference among control group, series training group and parallel training group on selected criterion variables namely flexibility and strength. The series training and parallel training groups significantly improved flexibility and strength Both parallel training and series training improved flexibility and strength . However, paralled training was found to be better than the series training.

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Psychology of Meditation and Health: Present Status and Future

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The use of meditation for healing and enlightenment is not new. The practice of meditation has been prevailing throughout the human history among diverse cultures. In fact, all religious traditions practice some forms of meditation. It is generally associated with healing, spiritual growth, and enlightenment. After its introduction to the western world by Indian spiritualist Paramahansa Yogananda in 1920, the nature of scientific investigation of spiritual beliefs and practices underwent a drastic change. However, it was only during the 1960s that scientific studies started focusing on the clinical effects of meditation on health after the reports of extraordinary feats of bodily control and altered states of consciousness by eastern yogis reached the west. These reports captured the interest of many western behavioural scientists. With the scientific advancement and refinement in instrumentation, scientific study of effects of meditative practices became possible. A formal acknowledgement of the academic curiosity within psychology came in 1977, when the American Psychological Association issued a statement on meditation stating that- "meditation may facilitate the psychotherapeutic process." They also encouraged research "to evaluate its possible usefulness" (Kutz, Borysenko, & Benson, 1985, p.1). As a result, both health care professionals and lay people embraced meditation as a valuable tool for stress reduction and a device for healing both mental and physical disorders. The word "meditation" is derived from the Latin meditari, which means "to engage in contemplation or reflection." The word meditation comes from the same Greek and Latin root as the word medicine. Manocha (2000) described meditation as a discrete and well-defined experience of a state of "thoughtless awareness" or mental silence, in which the activity of the mind is minimized without reducing the level of alertness. Walsh and Shapiro (2006) defined meditation from cognitive and psychological perspective, as a family of self-regulation practices that aim to bring mental processes under voluntary control through focusing attention and awareness. Other major descriptions of meditation emphasize components such as relaxation, concentration, an altered state of awareness, suspension of logical thought processes, and maintenance of self-observing attitude (Craven, 1989). Thus, meditation has been conceptualized in many ways and there exists no consensus definition. It is very

difficult to capture its essence in one definition. However, Cardoso et al. (2004) developed an operational definition encompassing both traditional and clinical parameters. They defined any practice as meditation if it (1) utilizes a specific and clearly defined technique, (2) involves muscle relaxation somewhere during the process, (3) involves logic relaxation (i.e., not "to intend" to analyze the possible psychophysical effects, not "to intend" to judge the possible results, not "to intend" to create any type of expectation regarding the process), (4) a self induced state, and (5) the use of a self-focus skill or "anchor" for attention.

Types of meditation: Presently many meditation techniques are being practiced. However, all of them can be grouped into two basic approaches- concentrative meditations and mindfulness/ insight meditations. Concentration meditation aims at single pointed focus on some sound, image or sensation to still the mind and achieve greater awareness. Most popular form of this meditation is "transcendental meditation"(TM) developed by Maharshi Mahesh Yogi in 1958. TM is generally done by focusing the mind on some mantra (sound) to achieve transcendental state of consciousness. Mindfulness meditation on the other hand involves opening up or becoming more alert to the continuous passing stream of thoughts, images, emotions and sensations without identifying oneself with them. Such practice helps in developing non-reactive state of mind, which is the foundation for calm and peaceful state of consciousness. Here instead of narrowing the focus (concentration) practitioner becomes alert to the entire field of consciousness. Vipassana and Zen meditations belong to this category. Mikulas (1990) propounded the classification of meditative practice into four components- form, object, attitude, and behaviours of the mind. Form refers to the setting of meditation and the activity of body during the meditation, whereas object refers to object of one's attention during the meditation. Attitude is the mental set with which one approaches meditation. Behaviours of mind connotes whether the meditation is based on concentration or mindfulness.

Effects of meditation: physiological even though meditation is a mental activity, its effects on human physiology have received much attention. Few Indian studies have attempted to examine and establish the neurological correlates of yogic practices, including meditation, (Bhushan, 2002, 2004; Ramamurthi, 1977; Varma, 1979) the development of brain imaging technique has thrown the ball in the Western court. The unavailability of adequate infrastructure and needed scientific temperament within the country has made very few centers move parallel to the Western labs. Some of physiological effects are summarized here. Heart rate Studies have indicated that heart rate slows down during quite meditation

and quickens in the moments of ecstasy during meditation (Tamini, 1975). Meditations like TM, Zen, relaxation response and other calming forms of meditation generally decrease the rate of heart beat (Bono, 1984; Delmonte, 1984a). However, very pronounced decrease in heart rate is found among long term practitioners only. Blood pressure and hypertension Blood pressure is one of the easiest measurable physiological variables. There is strong evidence that meditation lowers blood pressure for the people who are normal or moderate hypertensive (Sears & Raeburn, 1980; Swami Karmananda Saraswati, 1982; Wallace et al., 1983). However, most studies indicate that the benefit disappears once practice is discontinued (Patel, 1976). Cortical activity Evidence from many studies indicates that during meditation alpha activity increases significantly (Delmonte, 1984a; Daniels & Fernhall, 1984). Alpha waves are slow and high amplitude brain waves with frequency ranging from eight to thirteen cycles

Alpha activity is generally indicator of deep relaxed state of mind. Long term meditation practitioners also exhibit theta brain wave activity (five to seven cycle per second) during which they report peaceful and pleasant experience with intact self awareness (Jacobs & Luber, 1989; Delmonte, 1984a). Research also indicates that during meditation right brain activity increases (Pagano & Frumkin, 1977). Delmonte (1984b) reported that meditation practice may begin with left-hemisphere activity, which then shifts towards the right hemisphere, while in advanced meditation both left- and righthemisphere activity are largely inhibited or suspended. Schwartz (1975) pointed that meditation practices can lead to heightened cortical arousability and decreased limbic arousability, which lead to heightened perception and reduction of emotional activity. Goleman (1976) reported that meditators showed a significantly increased cortical excitation during meditation and a simultaneous limbic inhibition. One of the recent research performed on the monks of Dharamsala, Himanchal Pradesh, have proved that their prefrontal lobes is lit even when they are not meditating (Davidson et al., 2003). This area is responsible for positive emotions. Lou et al. (1999) found significant changes in the blood-flow in the cortex during yoga nidra. Using H2OPET they found a decreased flow in the executive system of the brain, i.e., dorsolateral prefrontal, anterior cingulate, orbital frontal cortices, striatum, thalamus, brain stem and cerebellum. Lazar, Bush, Gollub, Fricchione, Khalsa, and Benson (2000) studied 5 subjects who had practiced Kundalini meditation daily for at least four years. A fMRI record was made while the participants passively observed their breath and silently repeated Sanskrit phrases during inhalations and exhalations during the session. During the meditation process

an increased fMRI signal was recorded in the putamen, midbrain, pregenual anterior cingulated cortex and the hippocampal/ parahippocampal formation suggesting that the neural activity evolve during meditation practice and are dynamic. The profound effect of Transcendental Meditation on the brain function is reflected in the form of increasing degrees of orderliness, integration and coherence. Several studies in the recent past confirm a unique style of brain functioning in enlightened people (Travis, 2001; Travis & Orme-Johnson, 1989; Travis & Pearson, 2000; Travis, Tecce, & Guttman, 2000). While a relative excitement is continuously present in the brains of non-enlightened subjects, the enlightened people maintain a low level of excitation until s/he confronts the very moment when it is appropriate to make a decision. This exactly matches with their subjectively felt and narrated experience of persistent immovable inner calmness, even while engaged in dynamic outer activity. Even though such empirical findings are coming now, it has always been advocated in the Indian religious/ philosophical texts and narrations. Attempts have also been made for MEG recording during transcendental meditation practice. Litscher, Wenzel, Niederwieser, and Schwarz (2001) used TCD (Transcranial Doppler Sonography) and nearinfrared spectroscopy to measure oxygenation levels in the cerebral tissues of two QiGong (a Chinese meditation exercise) experts. During meditation the mean blood flow increased in the right posterior cerebral artery and decreased in the left middle cerebral artery. A simultaneous increase in oxyhemoglobin and total hemoglobin was also recorded. During QiGong predominant EEG activity was witnessed in the anterior half of the brain while it silently occurred in the posterior

This can be considered the cerebral ying and yang. Attempts are also being made to understand the relationship between neurotransmitters and meditation. The dopaminergic system seems to play an important role in the suppression of executive system during relaxation meditation. Metabolism and respiration Many studies have shown that during meditation oxygen consumption is reduced (sometime up to 50%), carbon dioxide elimination is reduced (sometime up to 50%) and respiration rate is lessened (Sudsuang, Chentanez, & Veluyan, 1991; Kesterson, 1986). Skin resistance Low skin resistance (measured in terms of galvanic skin response) is a good indicator of stress. As expected high skin resistance has been documented by many researchers especially among TM practitioners (Bono, 1984; Bagga & Gandhi, 1983).

Effects of meditation: psychological Many perceptual and cognitive abilities are associated with meditation practices. These abilities may range from normal to paranormal. Many scientific investigations have been conducted to measure various psychological and behavioral effects of meditation. Perceptual ability Brown, Forte, and Dysart (1984a, 1984b) conducted experiments on visual sensitivity among Buddhist meditation practitioners using before-after and control group design. Post test was conducted after three months of rigorous meditation practice. Visual sensitivity was measured by detection threshold and discrimination threshold using simple light flashes. They reported significant improvement in visual sensitivity after the meditation retreat. Other studies also reported similar decrease in visual threshold and increased auditory acuity after the meditation (McEvoy, Frumking, and Harkins, 1980; Keithler 1981). Other studies reported increased visual imagery abilities (Heil, 1983), enhanced attentive ability (Linden, 1973), reduction of perceptual noise (Walsh, 1978), increased reaction time (Robertson, 1983), and enhanced perceptual motor speed (Jedrczak, Toomey, & Clements, 1986). Memory and intelligence Jedrczak et al. (1986) reported that number of months of TM practice predicted the higher performance on nonverbal intelligence test. Other researchers also reported similar results of improvements in cognitive abilities (Verma, Jayashan, & Palani, 1982). Studies on TM practitioners generally reported to have positive impact on intelligence, school grades, learning ability, short and long term memory (Cranson et al., 1991).

Creativity and self actualization Mixed results have been reported regarding creativity and meditation. TM researchers in particular reported enhanced creativity with TM practice (Ball, 1980; OrmeJohnson & Granieri, 1977). However, other researchers could not find any relationship between meditation and creativity (O'Haire & Marcia, 1980; Domino, 1977). Self actualization is thought to be the major goal of dedicated meditation practitioner. Various studies have measured several aspects of self actualization and experiences in meditation. Alexander, Rainforth, and Gelderloos (1991) performed a meta-analysis on 42 studies on the effects of TM and other forms of relaxation on self actualization. Their measure of self actualization included three independent factors: affective maturity, integrative perspective on the self and world, and resilient sense of self. They found effect size of TM on self actualization is approximately three times larger than other forms of meditation and relaxation practices. Other studies also reported increase in various dimensions of self actualization with meditation (Gelderloos, Walton, OrmeJohnson, and Alexander, 1990). mechAnisms for the therApeutic effects of meditAtion Helminiak (1981)

described six possible mechanisms through which meditation works. These six mechanisms capture most of the explanations found in the existing literature. They are: (1) Relaxation: Relaxation is one of the primary components of all kinds of meditation which induce a pleasant and deep relaxed state of body and mind. Herbert Benson (1976) developed a therapeutic technique called "relaxation response" which is a form of meditation. His whole concern with meditation was to reduce stress and hypertension by inducing a state of deep relaxation. Benson (1976) measured series of physiological parameters in response to relaxation response. Various effects include-decrease in the rate of metabolism, decrease in the rate of heart beat, muscle relaxation, slow and rhythmic breathing, decrease in blood pressure, and so on. All this effects help in balancing physiological abnormalities and promotes healing. (2) Systematic desensitization: Joseph Wolpe's (1961) behavioural therapy is especially instrumental in reducing anxiety. This therapy involves three steps. First, the client is thought to induce a deep state of muscle relaxation. This is followed by preparing a hierarchical list of stimuli inducing anxiety. Finally, in a deep relaxed state client confronts (either by imagination or by presentation of actual stimuli) each of the anxiety producing stimuli progressing in hierarchy. This therapy is based on the principle of reciprocal inhibition. Since anxiety and relaxation are incompatible to each other, the stimuli loose their anxiety provoking quality. Client continues this process until he is desensitized to highest item in the hierarchy. In meditation also a practitioner undergoes similar steps. Every meditation involves induction of a relaxed state. In meditation, the practitioner first enters in deep relaxation and suspends conscious thoughts by either detached observation or concentration. As a result, many anxiety provoking repressed memories, thoughts, and feelings arise in the mind. When one confronts them in a deeply relaxed state, these factors loose their power to induce anxiety and finally get eliminated. (3) Release of repressed psychic material: This is related to systematic desensitization. With regular practice of meditation, most of the practitioners encounter release of repressed unconscious thoughts, emotions, and images (Schwartz, 1974). This is very similar to the release of unconscious phenomenon during free association in psychoanalysis. This could be initially disturbing, but with constant practice unconscious mind gets cleaned of such memories and healthy mind is achieved. During meditation, the practitioner remains under low arousal and sensory deprivation for a long time and under such condition repressed feelings and thoughts arises (Benson, 1976). (4) Unstressing: Parallel to release of repressed memories, many practitioner reports many physical reactions during intense meditation. This could be involuntary muscularskeletal movements such as repeated twitches, spasms, gasps, tingling, tics, jerking,

swaying, pains, shaking, aches, internal pressures, headaches, weeping, and laughter. The experience covers the range from extreme pleasure to acute distress (Goleman, 1971). TM practitioner calls this as "unstressing". Goleman (1971) interprets this phenomenon on the basis of psycho-physiological principle contemplating that all psychic and emotional phenomena have parallel physiological processes. (5) Dissolution of habitual patterns of perception: Human beings are mostly governed by rigid and fixed patterns of thinking, feeling, and reactions. Many of these patterns are unhealthy and cause neurotic and psychotic problems. Most of the unhealthy habitual patterns are due to our identification with emotions that we are not able to control and regulate. With detached observation, emotions and thoughts loose their power and practitioner is able to identify the unhealthy patterns of behavior and remove them with healthy ones. (6) Cosmic consciousness: Attainment of cosmic consciousness is a mystical concept and not available for scientific investigation. Many terms are used to represent cosmic consciousness such as samadhi, nirvana, satori, and moksha. It is the highest goal achieved by meditation in esoteric traditions where a person transcends his personal ego. In the state of cosmic consciousness a person realizes that he/ she is one with the whole cosmos and is not separate from others. As a result, a tremendous sense of love and compassion arises in him and it is the highest state a human can achieve. meditAtion And heAlth: review of present stAtus Effects of meditation on health are based on the principle of mind-body connection. Meditation practices are generally accepted as mind-body treatments for health related problems and overall well-being. There is a growing body of literature showing the efficacy of meditation on various health related problems. Meditation is reported to be effective in pain management and enhancing immune system (Kabat-Zinn, 1990). Studies on the long-term mental benefits of meditation show that meditation reduces stress and increases reported levels of happiness, self-confidence, and general effectiveness (Fergusson, Bonshek, & Boudigues, 1995; Hawks, Hull, & Thalman, 1995). Meditative interventions have been found to be beneficial in treating various clinical conditions. These include- hypertension (Barnes et al., 1997); cardiovascular disorders (King, Carr, & D'Cruz, 2002); pain syndromes and musculoskeletal diseases (Astin, 2004); respiratory disorders such as asthma, congestive obstructive pulmonary disease (Wang, Collet, & Lau, 2004); dermatological problems such as psoriasis, allergies (Bilkis & Mark, 1998); immunological disorders (Astin et al., 2003) and treatment-related symptoms of breast and prostate cancer (Coker, 1999). Several Indian researchers have also made significant contribution. Their study range from anxiety (Jangid, Vyas, & Shukla, 1988; Sharma & Agnihotri, 1982), psychosomatic disorders (Divekar, 1982), neurotic disorders (Naug, 1975;

Nagarathna & Nagendra, 1980) and stress (Sethi, Trivedi, & Anand, 1981). Studies suggest that intervention program using meditation is helpful in reducing headache as well as pain in neck, extremities and joints (Brendstrup & Launso, 1993). Decline in the use of tranquilizers, antirheumatics, and gastrointestinal agents have also been reported after meditation practices (DeBerry, Davis, & Reinhard, 1989; Ganguli, 1985; Singh, 1992). Further, Sethi (1989) has argued that meditation is a key coping mechanism for the problem of burnout in organizations. Various studies also reported the benefits of TM meditation in de-addiction from chemical substances (Gelderloos et al. 1991), and smoking (Royer-Bounouar, 1989). Classic distinction suggests as many as 14 different forms of mediation (Goleman, 1978). However recently, University of Alberta Evidence-based Practice Center, Canada, conducted an exhaustive review of studies on meditation and its effects on health. This review was conducted on studies up to 2005. They identified five categories of meditation practices: (1) Mantra meditation (Comprising TM, relaxation response, and clinically standardized meditation), (2) Mindfulness meditation (comprising Vipassana, Zen Buddhist meditation, mindfulness based stress reduction, and mindfulness based cognitive therapy), (3) Yoga (This is based on Indian Yogic tradition developed by Patanjali. It incorporates various techniques like body postures, breath control and meditation.) (4) Tai Chi (This is a Chinese martial art that incorporates various slow rhythmic movements that emphasize force and complete relaxation. It has been also called "meditation in motion.") (5) Qi Gong (This is an ancient Chinese practice that combines breathing patterns with various physical postures, bodily movements, and meditation.) This review was conducted on 813 studies. However, they reported most of the studies in this area are poor in quality. Most commonly studied disorders were hypertension, cardiovascular diseases, and substance abuse. Results of meta-analysis conducted on hypertensive participants showed that TM, Qi Gong and Zen Buddhist meditation significantly reduced blood pressure. Other findings indicated that Yoga contributed in stress reduction. However, Yoga was no better than Mindfulness-based stress reduction at reducing anxiety in patients with cardiovascular diseases. No clear picture from the studies on substance abuse was obtained. Meta-analyses on 55 studies indicate that some meditation practices produced significant changes in healthy participants. What is alarming is that the role of effect modifiers such as age, gender, duration of practice and so on has been largely neglected in the scientific literature. It is clearly evident from the current literature that therapeutic effects of meditation is uncertain and inconclusive and more rigorous studies are needed in future to get firm conclusions. Earlier also Delmonte (1986) had concluded that

meditation as an intervention strategy was successful with anxiety and hypertension, but its effectiveness is doubtful in the treatment of other disorders.

Reports of the review study on meditation and health by University of Alberta Evidence-based Practice Center clearly indicates that the present state of research does not give clear evidence regarding the efficacy of meditation as a therapeutic tool, primarily because of lack of quality studies. Till date there is no consensus operational definition of meditation that can be employed by diverse studies. Design of the studies is also a major issue in this area. Most studies employ before-and-after design which does not provide clear causal inference. So, using control group is imperative for drawing causal inference. Apart from that, consideration of effects of various confounding variables (effect modifiers) has to be taken into account. Various confounding variables such as age and gender of the practitioner, duration of the meditation, and so on can have profound effect on the results. These effect modifiers have generally been neglected in studies. Employment of large sample should also be an important consideration. Most of the present studies have utilized small sample which limits their generalization. Beside these methodological considerations, there are great possibilities of biasness in this area. Researchers have been talking consistently about the benefits of meditation but one should be open to the possibility of negative impact of meditation also. Meditation is an important tool for the release of repressed emotional contents and this could be very disturbing to initial practitioners. Encountering such disturbing emotional contents could have adverse impact on the health of the practitioner, unless proper guidance is provided. For example, Walsh (1979) reported a number of disturbing experiences encountered during meditation, such as anxiety, tension, and anger. Researchers also posited that meditation may precipitate a psychotic episode in individuals with a history of schizophrenia (Walsh & Rauche, 1979). So, there is possibility for researcher's biasness, especially when one has preconceived notions of benefits of meditation. Meditation is not only a technique, but also an art. Some people are predisposed towards it while others are not. Some can delve deep into the meditation and acquire all benefits while others may come out more disturbed. Such individual differences should also be considered while making any conclusion regarding the benefits of meditation. It appears that meditation may have therapeutic value, but limited to those who are psychologically healthy, well integrated and may have mild neurosis or psychosomatic disorders. These issues need serious attention from researchers in future to get firm conclusion regarding the efficacy of meditation as an adjunct to mind-body therapy.

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SPORTS - SPECIFIC INJURIES OF ANKLE AND FOOT INJURIES

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Sprain of the lateral ankle ligaments is a very common injury. Approximately 25000 people experience it each day in the USA and 6000 people a day in India. A sprained ankle can happen to athletes and non-athletes, children and adults. It can happen when people take part in sports and physical fitness activities, or when they simply step on an uneven surface, or step down at an angle. In 2/3 of cases, the degree of sprain is mild or moderate, grade 1 or 2. Ankle injuries constitute 25% of all sports-related injuries, including 21% to 53% of basketball injuries and 17% to 29% of all soccer injuries. The evaluation of ankle injuries can be simplified by understanding how anatomic factors dictate specific injury patterns. The high number of recurrent sprains and the frequency of long-term complications from instability and arthritis suggest that the current management protocols may not be always optimal. Athletes often return too quickly to the sports arena before their rehabilitation is complete. Athletes and coaches, as well as some physiotherapists and physicians, often fail to appreciate the risk of recurrent injury or chronic disability. The pressure exerted on the practitioner by athletes and coaches to return athletes to play as soon as possible must be balanced with the need to ensure complete recovery.

A. Anatomy and Biomechanics The ankle joint is a simple hinge joint between the leg and the foot. The bones of the leg (tibia and fibula) form a sort of slot and the curved top bone of the foot (talus) fits between them. The talus is held to the tibia and fibula by ligaments. Each ligament is a semi-elastic structure and is made of many strands of collagen fibres. The ligaments of the ankle hold the ankle bones and joint in position. They protect the ankle joint from abnormal movements—especially twisting, turning, and rolling of the foot. Ligaments usually stretch within their limits, and then go back to their normal positions. When a ligament is forced to stretch beyond its normal range, a sprain occurs. A severe sprain causes actual tearing of the elastic fibres. The ligament on the inside of the ankle (superficial and deep deltoid ligaments) has two layers; the deepest one is most important. The lateral ligament is made up of three separate bands: one at the front (anterior talo-fibular ligament: ATFL), one in the middle (calcaneo-fibular ligament: CFL) and one at the back (posterior talofibular ligament: PTFL). The front band is the ligament usually injured in

sprains or tears of the ankle ligaments, and the middle band is sometimes affected. The stability of the talo-crural joint depends on both joint congruency and the supporting ligamentous structures. The lateral ankle ligaments (Figure 101a), responsible for resistance against inversion and internal rotation stress, are the ATFL, the CFL, and PTFL. The deltoid ligaments, which are responsible for resistance to eversion and external rotation stress, are less commonly injured. However, an injury to these ligaments indicates severe trauma.

The ATFL resists ankle inversion in plantar flexion, and the CFL resists ankle inversion during dorsiflexion. The CFL spans both the lateral ankle joint and lateral subtalar joint, thus contributing to both ankle and subtalar joint stability. The PTFL is under greatest strain in ankle dorsiflexion and acts to limit posterior talar displacement within the mortise as well as talar external rotation. The calcaneus articulates with the talus above it by three facets, to form the subtalar joint. The subtalar joint controls foot supination and pronation in close conjunction with the transverse tarsal joints of the midfoot. The CFL provides stability to inversion and torsional stresses to both the ankle and subtalar joints. Up to 50% of apparent ankle inversion observed actually comes from the subtalar joint. The CFL, the cervical ligament, the interosseous ligament, the lateral talocalcaneal ligament, the fibulotalocalcaneal ligament (ligament of Rouviere), and the extensor retinaculum contribute to stability of the subtalar joint. The tibia and fibula have a small joint between themselves just above the ankle (tibio-fibular ligaments). The syndesmotic ligaments, responsible for maintaining stability between the distal fibula and tibia, consist of the anterior tibiofibular ligament, the posterior tibiofibular ligament, the transverse tibiofibular ligament, the interosseous ligament, and the interosseous membrane (Figure 10-1b). Injuries to the ankle syndesmosis occur as a result of forced external rotation of the foot or during internal rotation of the tibia on a planted foot. The ligament at the front is involved in 10–20% of ankle sprains; the ligament at the back, like the deltoid ligament, is mainly damaged in association with severe fractures of the ankle bones. Clinically, the most commonly sprained ankle ligament is the ATFL, followed by the CFL.

B. Mechanisms of Injuries Lateral ankle sprains occur as a result of landing on a plantar flexed and inverted foot. These injuries occur while running on uneven terrain, stepping in a hole, stepping on another athlete's foot during play, or landing from a jump in an unbalanced position. When this happens, the full force of the body's movement is placed on the anterior talo-fibular ligament. This may stretch, with tearing of some of its fibres

(sprain) or it may tear completely. If there is a major injury of the anterior talo-fibular ligament, the forces transfer to the calcaneo-fibular ligament and the tibio-fibular ligaments, which may also be sprained or torn. Occasionally small pieces of bone may be torn off with the ligaments. In a few cases, a twisting force on the ankle may cause other damage. The bones around the ankle may be broken, a piece of the joint surface inside the ankle may be chipped off, ligaments connecting other bones in the foot may be sprained or torn, or the tendons around the ankle may be damaged.

C. Patient History Given the strong correlation between the mechanism of injury and diagnosis, identifying the joint position at the time of injury is a useful first step in the clinical evaluation. Therefore, it may be clearer if the examiner shows the patient what is meant by the various terms or has the patient demonstrate the mechanism of injury with the uninjured ankle. Revisiting the precipitating activity may help determine if the injury was unavoidable or resulted from inherent weaknesses. Jumping and landing on another athlete's foot or stepping in a rut on the field is likely to injure a previously normal ankle. Sprains that are unprovoked or occur in situations that wouldn't injure a normal ankle raise concerns for other diagnoses, such as tarsal coalition, osteochondritis, or peroneal tendon dislocation. The history should include the location of pain, presence of swelling, and functional capacity, including the ability to bear weight, walk, run, and jump. The history should also include whether the patient heard a "pop" and a review of prior injuries, previous diagnostic studies, treatments, and any residual impairments. The patient's current sports participation history and training plan help to gauge conditioning needs during recovery and requirements for return to play.

D. Physical Examination The exam of the injured ankle starts with an assessment of the degree and location of swelling and ecchymosis. Palpation should include bony landmarks such as the lateral malleolus, the medial malleolus, the fibula, the fifth metatarsal, and, in skeletally immature patients, the physis. Achilles tendon, peroneal tendons, and posterior tibial tendon should also be palpated, because injuries to these structures may mimic ankle sprains. Soft-tissue palpation includes the ATFL, CFL, PTFL, deltoid ligament, and peroneal tendon. Tenderness over the anterior joint line or syndesmosis may indicate a sprain of the interosseous membrane. A careful neurologic examination is essential to rule out loss of sensation or motor weakness, as peroneal nerve and tibial nerve injuries are sometimes seen with severe lateral ankle sprains.

Provocative tests for lateral ankle instability include the anterior drawer test, inversion stress test, and the suction sign. The anterior drawer test is specific for the ATFL and can be done with minimal pain or guarding. Two provocative tests for syndesmotic ligament injury are the squeeze test and the external rotation stress test. Tests for range of motion, strength, and proprioception are likely to be abnormal in the acute setting but may help assess deficits in patients who have chronic or recurrent sprains. 1. Grading Various systems are used for grading the severity of ankle sprains. It is cumbersome to assign a grade 1 to 3 rating to each of the three lateral ligaments that may be injured. Some clinicians prefer to use the number of injured lateral ligaments to assess severity. An isolated sprain to the ATFL is considered a grade 1 (mild) sprain. A two-ligament injury involving the ATFL and CFL is a grade 2 (moderate) sprain. A grade 3 (severe) sprain indicates all three lateral ligaments have been injured. Alternatively, grading is more commonly determined by the extent of functional disability. Grading of ankle sprains guides treatment, rehabilitation, and prognosis: a. Grade 1 sprain: Slight stretching and some damage to the fibres (fibrils) of the ligament. b. Grade 2 sprain: Partial tearing of the ligament. If the ankle joint is examined and moved in certain ways, abnormal looseness (laxity) of the ankle joint occurs. c. Grade 3 sprain: Complete tear of the ligament. If the examiner pulls or pushes on the ankle joint in certain movements, gross instability occurs.

E. Radiologic Evaluation The decision to order radiographic studies should be based on the probability of finding bony abnormalities. When radiographs are indicated, the standard views should include anteroposterior, lateral, oblique and mortise. The Ottawa clinical decision rules (for patient from age 15 to 60 years old) were proposed as a means to reduce the number of unnecessary radiographic studies without sacrificing sensitivity for detecting fractures. These guidelines state that an ankle radiographic series should be obtained if bone tenderness is present over the lateral or medial malleolus, or if the patient is unable to bear weight for four steps both immediately post-injury and in the emergency department. Exclusions for use of the Ottawa ankle rules are age younger than 15 years, older than 60 years, intoxication, multiple painful injuries, pregnancy, head injury, or diminished sensation due to neurologic deficit. X-rays are least likely to be warranted for patients who exhibit laxity of the ATFL without other clinical findings. Bone scans, magnetic resonance images (MRIs), computed tomography (CT) scans, and arthrograms all have diagnostic utility for specific injuries (fractures; avulsions; talar dome fracture) but have little role in the initial evaluation of ankle sprains. Foot radiographs should also be obtained if the physical

examination demonstrates tenderness in the hindfoot, midfoot, or forefoot. 1. Stress Radiographs Stress radiographs help document lateral ligamentous chronic ankle injury—especially chronic instability but are not required to make the diagnosis of an acute ankle sprain.

F. Early Treatment Ligamentous injuries undergo a series of phases during the healing process: hemorrhage and inflammation, fibroblastic proliferation, collagen protein formation, and collagen maturation. The more severe the ligament injury, the greater the time required to progress through the stages of healing. Early mobilisation of joints following ligamentous injury actually stimulates collagen bundle orientation and promotes healing, although full ligamentous strength is not re-established for several months. Therefore, early treatment focuses on regaining range of motion while protecting the injured ligaments against re-injury. Limiting soft-tissue effusion speeds healing. The standard early treatment following an acute ankle sprain is PRICE (protection, rest, ice, compression, and elevation). Cryotherapy, compression, and elevation are essential to limit initial swelling from hematoma and oedema around the ankle and speed ligamentous healing. Early use of cryotherapy, applied in the form of ice bags, a cold whirlpool, or a commercially available compressive cuff filled with circulating coolant, has been shown to enable patients to return to full activity more quickly. Compression can be applied by means of an elastic bandage, felt doughnut, neoprene or elastic orthosis, or pneumatic device.

G. Non-surgical Treatment Results Primary surgical repair of the torn lateral ankle ligaments has been advocated by some as treatment for elite athletes and young adults; however, it has not been supported in comparative studies that recommend early non-operative functional treatment of ankle ligament injuries. It has been documented that satisfactory subjective and clinical stability have been restored with non-operative treatments such as casting, taping, bracing, and early physical therapy. A prospective study of 146 patients with grade 3 ankle sprains who were randomised into operative or non-operative groups found that the group treated with an ankle orthosis for 6 weeks returned to work faster. No difference in joint laxity between the groups was found on stress radiographs performed 2 years post-injury. Syndesmotic ligamentous injuries without fracture or gross widening of the ankle mortise are treated non-operatively with a short leg cast or brace, followed by physical therapy. The patient should be advised that these injuries result in longer periods of disability than injuries to the lateral collateral ligaments. If diastasis of the

syndesmosis is evident on plain radiographs, operative stabilisation of the ankle mortise is accomplished with a syndesmotic screw.

H. Evaluating Chronic Symptoms Chronic pain following ankle injury is common. In a retrospective study of 457 patients treated with immobilisation or bracing, 72.6% reported residual symptoms at 6 to 18 months. In the evaluation process, the workup should center on whether the patient's chief chronic ankle complaint is pain or instability (Figure 10-2). If the primary problem is ankle pain, a concentrated effort should be made to rule out occult fracture of the foot or ankle. A technetium bone scan is an excellent screening test to rule out occult fractures and to guide further treatment. If the bone scan reveals increased uptake in a discrete area, a spot radiograph or computed tomography scan is useful to further identify the exact location of fracture. Occult or associated injuries to the tendons of the foot and ankle should also be considered, and MRI is the most useful exam to identify and confirm them. Table 10-1 lists some commonly missed occult fractures and tendon pathologies.

Fractures • Talar dome osteochondral • Lateral talar process • Anterior process calcaneal • Lateral malleolar • Posterolateral distal fibular flake • Fifth metatarsal base • Navicular

Tendon Injuries • Achilles rupture • Peroneal tendon rupture • Peroneal tendon subluxation/dislocation • Posterior tibial tendon rupture • Anterior tibial tendon rupture • Flexor hallucis longus tendon rupture

1. **Other Soft Tissue Causes** Other soft-tissue causes of chronic ankle pain include anterolateral ankle impingement (meniscoid lesion), anteroinferior tibiofibular ligament impingement (Basset's ligament), and anomalous peroneal pathology. Injury to the lateral ankle ligaments may produce scarring of the ATFL and joint capsule, leading to the formation of "meniscoid tissue" in the anterolateral ankle. Anterolateral impingement can develop when inflamed tissue is pinched between the talus, fibula, and tibia. The distal fascicle of the anteroinferior tibiofibular ligament may abrade the anterolateral surface of the talus when the ankle is dorsiflexed during abnormal anterior translation of the talus. An anomalous or accessory peroneal tendon may also cause chronic posterolateral ankle pain.

2. **Osteochondral Fractures** Fractures of the talar dome, which occur in association with ankle sprains, are commonly overlooked. These occur when there is a compressive

component to the inversion injury, especially when landing from a jump. Usually the fracture is not detected initially and the patient presents some time later complaining of an unremitting ache in the ankle, despite appropriate treatment for an ankle sprain. A radioisotopic bone scan will confirm the presence of an osteochondral fracture. Grade II, III and IV will be evident on a CT scan, but only MRI will pick up a grade I lesion. Grade I and II should be treated with a NWB cast for 6 to 8 weeks. Grade IIa, III and IV fractures require arthroscopic removal of the fragment. A comprehensive rehabilitation programme with a graduated return to weight bearing is then required.

3. **Tibialis Posterior Tendonitis** Tibial posterior tendonitis (Figure 10-3) is the most common cause of medial ankle pain. This condition may occur as a result of prolonged stretching into eversion and is often associated with excessive subtalar pronation. Treatment with physiotherapy, NSAIDs, and orthotics may be required to control excessive pronation.

4. **Flexor Hallucis Longus** Tendonitis Flexor hallucis longus tendonitis presents with pain on toe-off or forefoot weight bearing. It is aggravated by resisted flexion of the first toe or stretch into full dorsiflexion of the hallux. This condition is often associated with posterior impingement syndrome as the FHL tendon lies in a fibro-osseous tunnel between the lateral and medial tubercles of the posterior process of the talus. Treatment consists of physiotherapy, NSAIDs, and stretches.

5. **Tarsal Tunnel Syndrome** This syndrome occurs as a result of entrapment of the posterior tibial nerve in the tarsal tunnel where the nerve winds around the medial malleolus. This syndrome often occurs as a result of trauma (inversion injury to the ankle) or overuse associated with excessive pronation. Features of this condition are pain radiating into the arch of the foot, heel and toes, and pins and needles and numbness on the sole of the foot aggravated by prolonged standing, walking or running. Treatment may consist of corticosteroid injection and control of excessive pronation by orthotics.

Sinus Tarsi Syndrome The calcaneus and the talus articulate via three facet joints and are supported by several surrounding ligaments to form the subtalar join (see A. Anatomy b. Sinus Tarsi Syndrome The calcaneus and the talus articulate via three facet joints and are support- ed by several surrounding ligaments to form the subtalar joint (see A. Anatomy and Biomechanics). Injuries to this complex may result in the “sinus tarsi syndrome.” This syndrome is often due to poor biomechanics and chronic overuse, or

results from an acute ankle sprain. It often occurs after repeated forced eversion (e.g. high jump take-off). Forced passive eversion of the subtalar joint elicits pain and the subtalar joint is often stiff. Treatment includes mobilising the subtalar joint, NSAID, and biomechanical correction. Local anesthetic injections may also be required.

6. **Medial Malleolus** Stress fracture of the medial malleolus should also be considered in the running athlete with persistent medial ankle pain.

7. **Lateral Pain** Lateral pain is generally associated with a biomechanical abnormality, and can have a variety of causes: a. Peroneal Tendonitis Peroneal tendonitis (Figure 10-4) is the most common overuse injury causing lateral ankle pain. Inflammation of the peroneal tendons or sheaths may be due to excessive eversion (running on slopes, etc.) and is commonly associated with excessive pronation. Localised tenderness over the peroneal tendons is occasionally associated with swelling and crepitus. Treatment consists of physiotherapy, assessment of biomechanical abnormalities and correction.

8. **Anterior Ankle Pain** Anterior ankle pain related to overuse is usually due to: a. Tibialis Anterior Tendonitis Tibialis anterior tendonitis presents as localised tenderness, crepitus and pain on resisted dorsiflexion. It is usually due to restriction in joint ROM or downhill running. Treatment requires NSAID, physiotherapy and mobilisation of the ankle joint. b. Anterior Impingement Anterior impingement of the ankle may be the cause of chronic ankle pain or may follow an ankle sprain. As a result of persistent forced dorsiflexion (kicking), exostoses develop on the anterior margins of the ankle joint. As they become larger they impinge on overlying soft tissue and cause pain. Pain is reproduced by standing and lunging forwards (positive anterior impingement test). X-ray with a "hinge" view will identify the bony spurs. Treatment of mild cases involves AP glides of the talo-crural joint at the end range of dorsiflexion. Corticosteroid infiltration can be an effective treatment in more severe cases. Surgery to excise larger exostoses may be required. 9. Instability If the primary problem is ankle instability, the patient will experience feelings of "giving way" of the ankle on uneven ground, inability to play cutting or jumping sports, loss of confidence in ankle support, reliance on braces, and a history of multiple ankle sprains. If, on further evaluation, stress radiographs are positive for mechanical lateral ligamentous laxity, surgery is indicated to reconstruct the loose ligaments. If stress radiographs are nondiagnostic for mechanical laxity, the patient may have functional ankle instability due to deficient neuromuscular control of the ankle, impaired proprioception, and peroneal

weakness. Treatment in this case should be directed toward restoring peroneal tendon strength and ankle motion and improving ankle proprioception with physical therapy. Other causes of instability, not demonstrated by stress radiographs, include rotational instability of the talus, subtalar instability, distal syndesmotic (tibiofibular) instability, and hindfoot varus malalignment.

I. **Treatment Options**: Surgical Surgical treatment for ankle sprains is rare. Surgery is reserved for injuries that fail to respond to non-surgical treatment, and for persistent instability after months of rehabilitation and non-surgical treatment. The patient continues to experience multiple episodes of lateral ankle instability, and mechanical problems are documented by stress radiographs. Most procedures are designed to tighten or reconstruct the ATFL and CFL. Surgical options include: • Arthroscopy: A surgeon looks inside the joint to see if there are any loose fragments of bone or cartilage, or part of the ligament caught in the joint.

Reconstruction: A surgeon repairs the torn ligament with stitches or sutures, or uses other ligaments and/or tendons found in the foot and around the ankle to repair the damaged ligaments Following lateral ankle ligamentous reconstruction, most postoperative regimens immobilise the ankle in a cast for 4 weeks followed by an orthosis for an additional 4 weeks. Physical therapy with an emphasis on peroneal strengthening and propioceptive training is instituted 6 to 8 weeks after surgery. Return to sports occurs at about 3 months postsurgery. 1. Rehabilitation After Surgery Rehabilitation after surgery involves time and attention to restore strength and range of motion so the athlete can return to pre-injury function. The length of time one can expect to spend recovering depends upon the extent of injury and the amount of surgery that was done. Rehabilitation may take from weeks to months. 2. Rehabilitation Exercises Rehabilitation is used to help to decrease pain and swelling and to prevent chronic ankle problems. At first, rehabilitation exercises may involve active range of motion or controlled movements of the ankle joint without resistance. Water exercises may be used if land-based strengthening exercises, such as toe-raising, are too painful. Lower extremity exercises and endurance activities are added as tolerated. Proprioception training is very important, as poor proprioception is a major cause of repeat sprain and an unstable ankle joint. Once the patient is painfree, other exercises may be added, such as agility drills. The goal is to increase strength and range of motion as balance improves over time. Specific exercises for competitive athletes would probably use more intensive strengthening and

proprioceptive exercises. Exercise bands are available from supply houses. Grade 1 ankle sprain don't need a rehabilitation programme. The exercise protocol for grade 2: 3 times per week, for 9 to 15 sessions depending on the progression of symptoms. Physiotherapy methods are useful but no one is preferable. Ultra-sound is not useful. The most important thing is to recover an active mobility in the sagittal plane in a painless range of motion. The movements should be done slowly and controlled to reap the full benefits. Patients are encouraged to discontinue using crutches or canes as soon as pain will allow. Walking is permitted to the limits of pain. Proprioception exercises begin between 10 and 15 days after the disappearance of pain and with a good mobility of the ankle. The next phase of rehabilitation is agility drills and sport-specific drills that should be guided by a healthcare professional.

The most common causes of rear foot pain are:

Plantar Fasciitis The plantar fascia is a dense fibrous membrane that extends the entire length of the foot, from the calcaneal tubercle to the proximal phalanges. It protects the underside of the foot and helps support the arches Plantar fasciitis is a degenerative condition of the plantar aponeurosis. It is caused by repetitive microtrauma as part of an overuse syndrome. Predisposing factors may be anatomic, such as pes cavus or pes planus, leg length discrepancy, or excessive pronation; or biomechanical, such as poor foot gear, muscle tightness, nerve entrapment, or over-training. Pain occurs on initial standing, as the plantar fascia contracts during sleep. On examination, there is usually point tender ness at the medial calcaneal tuberosity. Treatment is primarily non-surgical. Analgesics such as NSAIDs help to control pain. Properly fitted and cushioned foot gear is essential, along with orthoses when needed. Dorsiflexion night splints prevent contraction of the plantar fascia during sleep, and are an effective adjunct. Stretching the gastrocnemius and soleus, as well as the toes, is an important part of the treatment regimen. Wall stretches and the use of slant and rocker boards aid in dynamic stretching. Corticosteroid injections may relieve pain rapidly, but increase the risk of tendon rupture and fat pad atrophy. Delivering corticosteroids by iontophoresis is safer, but the effects may be short-lived. The use of extra-corporeal shock wave therapy (ESWT) has been espoused in recent years as treatment for a wide variety of tendinoses, including plantar fasciitis. However, results remain controversial due to a variety of factors. For recalcitrant cases, endoscopic

• Warm-up before doing exercises and vigourous activities. • Pay attention to the surfaces on which one runs, walks, or works. • Wear good shoes. • Pay attention to the body's warning signs to slow down when feeling pain or fatigue.

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TRAINING EFFECT OF SPECIFIC STRENGTH PROGRAME WITH SELECTED PHYSICAL PHYSIOLOGICAL AND PERFORMANCE VARIABLES AMONG S.K.C.P.E (B. P.Ed.) NALGONDA HOCKEY PLAYERS.

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INTRODUCTION

Sports is a word wide phenomenon today. The word realized the importance of sports for the modern civilization. The main objects of physical education are to promote physical fitness. Which in promotes health and happiness.

Sports training is done for improve sports performance. The sports performance, as any other type of human performance is not the product of one single system or aspect of human personality on the contrary it is the product of the total personality of the sports person.

HYPOTHESIS

- It is hypothesized that the effects of strength training program will the significantly improvement speed due to the relative among the sri Krishna college of physical education hockey players.
- It is hypothesized that there be significant improve on cardio respiratory endurance due to the relative effects specific training with selected variables of strength training among sri Krishna college of physical education hockey players.
- It is hypothesized that they may be significant improvement and explosive power due to related effects of specific strength training with selected variables among the sri Krishna college of physical education hockey players.

METHODOLOGY: The main purpose of the study is "Effects of specific strength program with selected physical, physiological and performance variables among SKCPE (B. P. Ed.) Nalgond Hockey Players.".

Hence it is to achieve the purpose of the study 50 male hockey players. The subjects were selected at random by a lot method. The age groups of the subjects were ranged between 18 to 25 years.

SUBJECTS & VARIABLES

- 50 male hockey players from SRI KRISHNA COLLEGE OF PHYSICAL EDUCATION (B.P.Ed.) NALGONDA in the age groups 18 to 25 years were selected their consent.
- The selected subjects were randomly assigned to both the concurred training and control group of twenty five each.

TRAINING PROTOCAL: The training period the experimental groups underwent their respective training program, four days for week for 12 weeks in addition to their regular activities. Every day the workout lasted for 30 to 45 minutes approximately including warm-up and warm-down period.

EXPERIMENTAL DESIGN AND STATISTICAL PROCEDURE: The experimental design used in this study was random group design involving fifty subjects who were divided at random in to two groups of twenty five each. This study consisted of two independent variables such as strength training program. The data collected from the four groups before and after the experimental period were statistically explained for significant improvement by dependent t-test.

The analyses of covariance (ANACOVA) was used as a statistical procedure with two groups were involving the "F" ratio was found to be significant for adjusted post means, scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. In all the caused 0.05 level was fixed significance level to test the hypothesis.

RESULTS & DISCUSSION

TABLE-1 TEST SELECTION

SL.No	Criterion variables	Test items	Unit of measurment
1	Speed	50 mtrs run	Seconds
2	Cardio respiratory endurance	Cooper's 12 minute run	Meters
3	Explosive power	Standing broad jump	meters
4	Resting pulse rate	Biomonitor	Numbers
5	Breath holding time	Stop watch(manual)	Seconds
6	Respiratory rate	Expiro graph	Numbers
7	Dribbling	Field test	Numbers
8	Hitting	Field test	Numbers
9	Pushing	Field test	Numbers

TABLE-2

ANALYSIS OF COVARIANCE ON SPEED WITH TRAINING PROGRAME OF STRENGTH TRAINING GROUPS AND CONTROL GROUP

Strength training group	Control group	Sources of variance	Sum of square	Df	Mean squares	F-ratio
7.72	8.04	Between within	1.034 0.474	2 56	0.517 0.008	64.625*

Significant at 0.05 level of confident

Table2 shows that the adjusted post-test means of strength training program with training group and control group are7.72 and 8.07 respectively. The obtained F-ratio value is 64.625. which is higher than the table value is 3.16 with DF 2 and 56 required for significance at 0.05 level. Since, the value of F-ratio is higher than the table value, in indicates that their significance difference among the adjusted post-test means of strength training program of with training group and control group.

TABLE-3

SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED TEST PAIRED MEANS ON SPEED

Strength training group	Control group	Mean differences	Confidence interval
7.72	8.07	0.22*	0.07
7.72	8.07	0.35*	0.07
		0.13*	0.07

Significant at 0.05 level

Table3 shows that the adjusted post test means differences on speed between strength training group and control groups are 0.22 0.35 and 0.13 respectively, which are greater then the confidence interval value of 0.07 at level of 0.05 confidence.

CONCLUSION

It was found that the experimental group namely strength training program have achieved significant improvement on speed, cardio respiratory endurance, explosive power, resting pulse rate, breath holding time, respiratory rate, dribbling, hitting, pushing when compared to the control group. It may be included that running program to increase speed, cardio respiratory endurance, explosive power, resting pulse rate, breathing holding time, respiratory rate, dribbling, hitting and pushing.

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TESTING OF VOCABULARY FOR 1ST TO 4TH CLASS UDRU MEDIUM STUDENTS OF WARANGAL DISTRICT

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INTRODUCTION: Language is an important vehicle which enables human beings to communicate with one another in order to secure cooperation in tasks which one individual cannot accomplish single handed. It also makes it possible for an individual to guide and control his own thought process. "Fundamentally Language is an instrument of conceptual analysis and Synthesis".(Collins 1988). By means of individual words or sings the aspects or partial features of concrete perceptual or ideally represented situations are signed out, and as it were, fixed. This is conceptual analysis-analysis into concepts each word or sign representing a concept, or a product of conceptual process. Then, by the order and succession of the words or sign, the situation can at any time be ideally reconstructed, either for the individual's own purposes or for the benefit of the other. The conceptual process is necessary before language can come into existence, and it is equally true that language is necessary before conceptual process can develop.

In the functioning of language three kinds of processes are involved. In the first place there are the motor processes in producing the sings, which are highly coordinated movements of group of muscles. In the second place there are sensory processes containing the receptive side of the language function and guiding and directing the muscular coordination. In the third place there are interpretative processes, in so far as the language is understand. The normal civilized human being possesses two language systems, i.e., the system of oral speech, and the system of graphic language. In this evaluation these two language systems at first developed independently from that of magma of imitative sounds and gestures, to which we must look for the earliest beginnings of language.

The Language Skills: Listening is the first and foremost skill in language learning. In fact this skill is the foundation stone for learning the language. The teacher has to provide his pupils maximum practice in listening the language though the children are exposed to their mother tongue continuously, they have to be provided adequate the listening exercises, to enable them to understand better.

Speaking is the second most important aspect of language learning. Speaking depends upon the listening practice. The right type of listening will result in good speech habits of the language. Maximum opportunities are to be provided for the pupils to speak the language. A lot of drill may be required to practice speech.

The vocabulary: Vocabulary includes the words used by a person in his day to day life to express his feelings and thoughts. Every individual will have a certain stock of words which he generally uses to give an outlet to his ideas. Such stocks of the words are like bricks to build an idea. Famous linguist John Drinkwater opined that the words are bricks, with which a skilful and imaginative arrangement of the language of the world has been built.

In regard to the amount of vocabulary to be introduced in each class, there are some opinions which are as follows:

Ustad Sajjad Mirza in his book Methods of Teaching Urdu published by Urdu Taraqui Board, Delhi has suggested introducing 2700 words in first five classes of the school study.

The details are:

1st Class	-	300 words
2nd Class	-	400 words
3rd Class	-	500 words
4th Class	-	700 words
5th Class	-	800 words
	Total	2700 words

It means that a student who has studied up to fifth class must possess a vocabulary of 2700 words.

Methods of study: Mary Collins and James Drever (1976) have suggested two methods to study the language development of the children. They are catalogue method and sampling method. In the first case the researcher records every word employed by the child whose vocabulary is being investigated, over a definite period of time, sufficiently long to allow approximately the whole vocabulary to be recorded. This method is useful only below the age of seven.

Objectives of the study: To estimate the amount of vocabulary of class IV students of Urdu Medium schools in regard to their

a) Word recognitionability
b) Reading ability
c) Writing ability on dictation
d) Work usage ability

Limitations of the study: The present study is limited to four schools of Warangal district where medium of instruction Urdu is being implemented.

i) Socio-economic factors were not taken into consideration for this study.

ii) The study has been conducted in Rural/Urban, Mandal Parishad / Government Schools.

iii) Both the boys and girls studying in the above schools were the population for the study.

Procedure of testing:

Each student was given a word list and asked to (✓) the words he knew well.

i) After the recognition of words, each student was asked to read (5) words chosen among the recognized words keeping the difficulty level of the words in view.

ii) Later the students were asked to write the words on dictation individually (5) words each chosen from the recognized words, keeping the difficulty level of the words in view

iii) Further on fourth test, the students were asked to use (5) words each, in their own sentences. The words for usage are given from the recognize words keeping in view the difficulty level of the words.

The Population and the sample: The population of the present study constitutues boys and girls studying in IV class Urdu medium of Government Schools and Mandal Parishad Schools of Urban and Rural areas of Warangal District.

The sample of boys and girls was selected randomly from the attendance registers of class IV of those schools where the test was conducted and who were present

On the days of testing:

Government Schools

i) GUPS Naimnagar, Hanamkonda (Urban) 10 boys – 10 girls

ii) GPS Shambunipet, Warangal (Rural) 10 boys – 10 girls

Mandal Parishad Schools:

i) MPUPS Jangaon (Primary Sections) (Urban) 5 boys – 5 girls

i) MPPS Mahabubabad (Rural) 5 boys – 5 girls

The total sample of boys and girls is as follows:

Management	Urban			Rural			Grand Total
	Boys	Girls	Total	Boys	Girls	Total	
Government Schools	10	10	20	10	10	20	**40**
Mandal Parishad Schools	5	5	10	5	5	10	**20**
Total	15	15	30	15	15	30	**60**

DATA ANALYSIS AND CONCLUSIONS: The performance data obtained through the tests has been presented in the following tables and the data is analysed using simple statistical methods wherever necessary to draw conclusions.

The following are the some of the major findings of this study:

i) The word recognition ability of the girls studying in urban Government Schools is less than that of boys studying in urban Government Schools.

ii) The reading ability of the Girls studying in urban Government Schools is less than that of boys in urban Government Schools.

iii) The writing ability on dictation of boys studying in Government Schools of urban area is more than that of the girls studying in Government Schools of urban area.

iv) The performance of both the boys and girls of urban area Government Schools is zero in the word usage tests.

v) The word recognition ability of girls studying in Government Schools of rural area is more than that of the boys studying in the same schools.

vi) The reading ability of rural area girls studying in Government Schools is less than that of the boys of rural Government Schools.

vii) The writing ability on dictation of girls studying in rural Government Schools is more than of boys of rural Government Schools.

viii) The performance of the girls of rural Government Schools is zero and that of the boys of rural Government Schools is very less on word usage tests.

ix) The word recognition ability of urban area girls is more than that of rural area girls of Mandal Parishad.

x) The writing ability on dictation of urban area girls of Mandal Parishad Schools is slightly more than that of their counter parts in rural areas

xi) The performance of Girls of urban area on the test of word usage ability is more than that of girls studying in rural area Mandal Parishad Schools

xii) The word recognition ability of urban boys of Mandal Parishad schools is better than that of their counterparts in rural area

xiii) The reading ability of urban boys of Mandal Parishad schools is slightly less than that of rural boys of Mandal Parishad schools

xiv) The reading ability of urban boys of Mandal Parishad schools is slightly less than that of rural boys of Mandal Parishad schools

xv) The word usage ability of urban boys of Mandal Parishad schools is a bit less than that of rural boys of Mandal Parishad schools.

Conclusions: The following are the conclusions drawn from the present study.

i) The performance of urban boys and urban girls studying in Government Schools at word usage is zero

ii) The performance of rural boys of Government Schools is more than that of boys of urban Government Schools on word recognition and reading tests and less than that of urban boys of Government Schools on dictation and word usage tests

iii) The performance of Rural boys of Mandal Parishad schools is less than that of urban boys of Mandal Parishad schools on word recognition test but better on reading, dictation and word usage tests

iv) The performance of Rural girls of Mandal Parishad schools is less than that of urban girls of Mandal Parishad schools on word recognition test, equal on reading test and a bit less on dictation and word usage tests

v) The performance in all the tests is higher among the boys and girls of Mandal Parishad schools of rural and urban areas when compared to their counter parts of Government Schools of rural and urban areas.

Suggestions: The following are the suggestions for improving the vocabulary of class IV students in all the schools irrespective of management and area of residence:

i) The attention of the teachers on improving the word usage ability among the students is highly essential.

ii) The teachers have to keep in their minds about the recognition ability, reading ability writing ability on dictation and word usage ability while introducing the words for improving the vocabulary of the students.

iii) It has been observed that most of the students irrespective of area or management could not write their names correctly. The teachers have to correct it immediately.

iv) The style of writing and the grapheme and the size of the alphabets is not upto the mark with almost all the students. Enough hand writing exercises are to be provided improving hand writing skills among the students.

v) Most of the students of Government Schools irrespective of area of residence are far behind in reading ability than the students of Mandal Parishad schools. Enough reading exercises are to be provided with correct pronounciation by the teachers.

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Comparison of endurance between female foot ball players and hockey players of S.K.C.P.E, NALGONDA

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INTRADUCTION:

Physical education is an integral part of the total education of every child from kinder garden through grade 12. Therefore every student should have the opportunity to participate in a quality physical education program. It is the role of quality physical education programs to help students develop health related students fitness, physical competence in movement activities. Cognitive understanding and positive attitudes toward physical activity so that they can adopt healthy and physical active lifestyles. Quality programs are also important. Because they provide learning experiences that meet a students developmental need, which in turn helps to improve to mental alertness, academic performance, readiness for displain. Specialized (one event or any other discipline should not be equated with one sidenessof training.on the contrary exercise should be performed to combination with certain special exercise. These exercises should help directly or indirectly to improve the performance in the given event so that the usefulness of each individual exercise should be carefully considered. The objective of the endurance training is to develop using continues and interval running. In the human body food energy is used to make adenosine triphosphate (ATP) the chemical compound that supplies energy for muscular contraction. Since ATP is in very low concentrations in the muscle, and it descries only to a minor extent, tightly controlled energy pathways exist for the constant regeneration of ATP as muscular contraction continues. For continues exercise, ATP must be re synthesized at the same rate as it is utilized.

HYPOTHESIS: It was hypothesized that the football players may have better endurance then hockey player.

DELIMITATION: The subjects were selected at random from SKCPE (Sri Krishna college of physical education) Nalgonda. The test administrated for on ten foot ball players and hockey players from (SKCPE).

METHODOLOGY:

The purpose of study was to comparison selection on physical fitness comparison of college level foot ball players and hockey players in order to achieve this purpose, ten foot ball players and ten hockey players from SKCPE, NALGONDA.

EXPERIMENTAL DESIGN

For this study, the subject by selected at random, independently drawn from ten foot ball players and ten hockey players which actively participated in the compitation of tourney in their respective game. Hence the design of the subject chosen for this study was based on independently random group design.

TEST ADMINISTRATION

600 yards: at the whistle, subject is made is to run from the starting point to the finish and the time taken to make the run is noted down.

STATISTICAL TECHNIQUES

The following statistical procedures were followed to find out selected physical fitness components between the foot ball and hockey players among physical education college student (mped) used t-ratio calculate the significance.

PRESENTATION AND INTRAPRETATION OF DATA

The test conducted by selecting ten foot ball players from physical education college SKCPE and ten hockey players from SKCPE, NALGONDA. The data was collected by concocting endurance test. The collected data were subjected to the t-ratio test of analysis for significance.

RESULTS & DISCUSSION:

TABLE

ENDURANCE TEST (600 YARDS TEST)

THE MEAN, STANDARD DEVIATION AND T-RATIO OF FOOT BALL PLAYERS AND HOCKEY PLAYERS AMONG SKCPE PHYSICAL EDUCATION COLLEGE.

TEAM	VARIABLE	NUMBER OF STUDENT	MEAN	STANDARD DEVIATION	T-RATIO
FOOTBALL PLAYERS	Endurance	10	2.358	0.2594	7.2725
HOCKEY PLAYERS	Endurance	10	3.071	0.1693	7.2725

Level of significance 0.05

DISCUSSION AND FINDING:

The table shows that the difference between the mean in being football players and hockey players. When were the standard deviation defference between the wars the calculation of t-ratio (7.2725) the t-ratio was found to be significance at the level of confidence the hypothesis was accepted.

CONCLUSION:

The following conclusions were made: on comparing endurance between the foot ball players and hockey player, it was found out the foot ball players had better endurance then hockey players in college.

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IMPACT OF BODY HEIGHT AND WEIGHT ON SPECIFIC MOTOR ABILITIES OF VOLLEYBALL PLAYERS

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ABSTRACT

Effective and efficient movement is fundamental to sports performance. Movement binds together all of the skills of a game into a coherent flow. Sport - specific training program can induce peculiar neuromechanical adaptations that are commonly considered as signs of acquisition and/or improvement of a specific movement skill. An athlete's anthropometric and physical characteristics may represent important prerequisites for successful participation in any given sport. Twenty one collegiate volleyball players, (age 19.85 +/- 0.83 years; height 181.67 +/- 12.03 cm; weight 72.62 +/- 12.99 kg; training experience 6.76 +/- 2.21 years), were recruited for this study. The purpose of this study was to examine the significance of the impact of body height and weight on the specific motor abilities of volleyball players. The following tests were performed: Block jump, Spike jump, Standing broad jump, Jelka test, T – test, 93639 m test, Obstacle course backwards, Arm plate tapping and Dash 20 m. Regression analysis from package SPSS 15.0 was used for data processing. The results showed that body height and weight had a statistically significant impact on the expression of specific motor abilities of volleyball players. Indeed, it can be assumed that an athlete's anthropometric characteristics can in some way influence his/her level of performance, at the same time helping to determine a suitable physique for a certain sport.

Keywords: anthropometric measures, CODS abilities, volleyball.

Introduction

Identification of specific characteristics of physique that may contribute to success in sports as well as the possible structural differences among athletes in various sports has been a subject of high interest for sport scientist and coaches. The importance of players' tall stature in some team sports (e.g., volleyball, basketball) is accepted as it is well known that body height influences positively all body segment lengths and, in turn, athletic performance.

Although adequate body size and shape are not the only elements necessary for an athlete to excel, they may represent important prerequisites for successful participation in sport.

The importance of tall stature in volleyball is well known. Body height is considered a determinant factor for good performance in volleyball and, together with its relation to body mass, is used as a criterion for the selection of promissing volleyball players Professional volleyball players are expected to have this anthropometric characteristic along with other physical traits and skills required for a high level of performance. The significance of the antropometric factors in the physical abilities, volleyball technical skills and psycho physiological computerized tests in 13-16 years old female volleyball players has been studied, according to Stamm (2003; 2006), body build determined 42-89% of the results of physical abilities tests, up to 32% of volleyball technical tests and up to 43% of psycho physiological tests. The biological meaning of the findings might consist in an advantage during the volleyball match for players who tend to have a lean physique (Gualdi-Russo & Zaccagni, 2001). Volleyball is an open skill sport with predominant anaerobic alactic acid power. The "kinanthropometric" profile of volleyball players includes great height, muscle power, jumping ability, velocity and coordination, all necessary in a game involving strength and elevation to block, strength and speed to spike, resistance to play the sets, as well as great technical ability. At higher skill levels, performance characteristics are mainly determined by speed and vertical jumping. The physical capacities determining an athletes' performance are explosive – dynamic muscle actions, jumping ability and speed in executing rapid, multidirectional in their study analyzed physical effort in relation to the new game rules and differentiated the workload by the number of jumps made by players in different positions during matches of different duration. They found notably different performance patterns between the old and the new systems. The most important differences were the lower number and shorter duration of active phases in matches played according to the new rules and the increase in passive phases. Nearly 50% of actions were composed of three touches with a mean duration of 5 seconds; however, the percentage of plays on the ball concluding with a single hit was also high and lasted less than 2 seconds (approximately 20% of total actions). This marked shift in the proportion of rapid actions since the introduction of the RPS has subsequently augmented anaerobicalactic acid energy utilization. On the basis of new rules, and dimensions of court as well as the height of the net, requirements for volleyball players' are determined. In light of these findings, it is our intention to provide detailed information

about impact of anthropometric characteristics (height and weight) on specific motor abilities of volleyball players (explosive power, change of direction speed, coordination and speed).

Methodology:

Subjects Twenty one collegiate volleyball players, twelve males (age 19.96 +/- 0.95 years; height 190 +/- 7.27 cm; weight 81.33 +/- 9.60 kg; training experience 6.42 +/- 2.02 years) and nine females (age 19.71 +/- 0.66 years; height 170.56 +/- 6.77 cm; weight 61.00 +/- 5.43 kg; training experience 7.22 +/- 2.49 years), were recruited for this study. The subjects were familiarized with the procedures involved in testing. All subjects received a clear explanation of the study, and written consent for testing was obtained.

Testing procedures as per the normal testing protocol for this group, the subjects completed their typical practise warm-up prior to testing sessions. In brief, this warm-up included 10 minutes of general activity (light running with change of direction and accelarration), followed by 10 minutes of dynamic activity that increased in speed and intensity (skips, leg swings, arm swings), followed by 3-5 minutes of rest without static stretching, prior to commencing the testing session. Subjects were re-familiarized with the testing protocol. The subjects performed three trials of each motor test, whilst anthropometric data (body height and body weight) were collected using a single trial. The best trial from the attempts for each motor test, was kept for analysis.

Variables: The sample of measuring instruments consisted out of two predicting variables: body height (BH) and body weight (BW), and nine criteria variables: block jump (BJ), spike jump with three steps approach (SJ), standing broad jump (SBJ), Jelka test (JT), T test (TT), 93639m test, Obstacle course backwards (OCB), arm-plate taping (TAP), and 20m dash (20m). in addition, on the basis of height and weight the body mass index (BMI) was calculated.

Statistical analysis The data gained were subjected to statistical analysis in the SPSS 15.0 package. Central and dispersion statistics are shown in Table 1 for all variables, and the regression analysis were used to calculate the impact of the body height and body weight on the criteria variables.

Results and Discussion: The descriptive statistics of the student subjects are shown in Table 1. The table shows that the index of nutritional status for volleyball players is within

the limits of normal (22.04), so these research subjects belong in the category of average nourished population. The Body mass index values seen in the literature for female volleyball players of different age, nationality and competition level vary between 20.5 kg/m2 and 22.5 kg/m2. The mean value in BMI found in the present study (21.41 kg/m2) is corresponding to values reported in recent investigations (Gualdi-Russo & Zaccagni, 2001; Papadopoulou et al., 2002; Malousaris et al., 2008), mean BMI values 22.1 kg/m2, 20.5 kg/m2, 21.9 kg/m2, respectively. Although the mesomorphy used to be the primary component of competitive female volleyball players somatotype in the last two decades, in the latest studies it appears that the ectomorphy may be taking over at the expense of mesomorphy. Body height is considered a determinant factor for good performance in volleyball and, together with its relation to body weight, is used as a criterion for the selection of promising volleyball players. The mean value of male and female volleyball players' height in our study was 170.56 +/- 6.77 cm, with a range from 161 cm to 179 cm; 190.00 +/- 7.27 cm, with a range from 179 cm to 203 cm. When comparing the volleyball players of this study to other male and female volleyball teams, our subjects are inferior with regard to BH (Gualdi-Russo & Zaccagni, 2001; Papadopoulou, Gallos, Paraskevas, Tsapakidou, & Fachantidou, 2002; Malousaris et al., 2008; Sheppard et al., 2008 Carvajal, Betancourt, Leon, Deturnel, Martinez, Echevarria, Castillo, & Serviat, 2012), which can be explained due to comparable level of competition, and selection trough training history. In particular, the BH values of the present study are lower than those investigating others in the literature evaluating competitive female volleyball players. Body height and body weight of male and female volleyball players from National Team of Serbia from London 2012 are (mean value, N=20), 199.75 cm, 84.55 kg; 186.45 cm, 71.95 kg respectively, which is in accordance with demands of contemporary volleyball competition. The obvious differences seen in BH and BW between samples are expected, since the players of Serbian National Team and samples from A1 division (Gualdi-Russo & Zaccagni, 2001; Papadopoulou et al., 2002; Malousaris et al., 2008; Sheppard et al., 2008; Carvajal et al., 2012), go through a stricter selection procedure and may follow more closely professional advice regarding training and diet. In the research of Rakić (2009), among 8500 subjects of different age groups from Vojvodina, the average body height and weight of 20-year-olds was 181.03 cm and 77.81 kg, respectively, which is an aproximate value of the measured height and weight of our research (after pooling the data), subjects as well. As our subjects belongs to the population of Faculty of Sport and Physical Education students, their results of anthropometric dimensions - body height and weight 180.28 cm, 71.65 kg, are in accordance with the results from same population 180.95

cm, 73.82 kg (2006), 181.26 cm, 74.74 kg (Mihajlović, Petrović & Šolaja, 2011). On the basis of these results, we can resume, that subjects in our study, by it's anthropometric characteristics, clearly belongs to the population of college students from Sports Sciences and close to the averaged values on their 20-years-old counterparts.

Table 1. Descriptive statistics of anthropometric characteristics and specific motor abilities for volleyball players (M-Mean, SD-Standard deviation)

	Volleyball players (N=22)			
VARIABLES	M	SD	MIN	MAX
Age (decimal years)	19.85	0.83	18.94	21.89
Years of playing	6.76	2.21	3	12
Body height (cm)	181.67	12.03	161	203
Body weight (kg)	72.62	12.99	54	100
Body mass index (kg/m2)	22.04	2.35	18.9	27.4
Block jump (cm)	271.53	19.76	237	311
Spike jump (cm)	287.68	22.74	245	318
Standing broad jump (cm)	234.17	37.14	164	313
Jelka test (0,1s)	35.60	3.79	27.69	41.45
T test (0,1s)	10.36	0.56	8.95	11.91
93639 m (0,1s)	7.79	0.40	7.11	8.52
Obstacle course backwards (0,1s)	10.16	1.71	7.27	14.18
Arm-plate taping (0,1s)	41.21	2.95	34	46
20m dash (0,1s)	3.60	0.30	3.02	4.11

The results of regression analysis, the influence of body height and body weight on specific motor abilities, are shown in Table 2. The system of predicting variables has statistically significant influence on results of motor abilities tests, namely – Block jump (P=0.00), Spike jump (P=0.00), Standing broad jump (P=0.00), Jelka test (P=0.01), and 20 m dash (P=0.00). The coefficient of multiple correlations ih the case of Block jump and Spike jump was R= 0.93 and R=0.86, with 80% and 75% respectively, of common variance between the prediction system and criterion variables. Analysing individual relations of predictors with criterion variable, we can see that only body height have substantial statistical contribution to the significance of the entire system (BJ Beta=0.99, SJ Beta=0.81). The correlation with the criterion variable r=0.93, while its partial correlation was rp=0.84. The body weight variable did not yield a statistically significant effect while the values of correlation and partial correlation were numerically smaller. Vertical jumping ability is, by most of the coaches, considered as the most important physical ability, besides agility and coordination. Vertical jumps (BJ and SJ), are performed frequently by volleyball players during practices and games. In various offensive (attacking, passing, and serving) and

defensive (blocking) maneuvers, players are required to jump vertically as high as they are capable of doing. Per set, jumping acts varied according to the players' position and the type of jump they performed: Setters performed 11-21 jump sets per set, and middle players performed 2-15 spike jumps and 3-19 block jumps. Similar to middle players, outside players performed 1-15 spike jumps and 1-13 block jumps (Sheppard, Gabbett, Kristie-Lee, Dorman, Lebedew & Borgeaurd, 2007). In essence, to achieve high level of proficiency in the game of volleyball, players are required not only to master taskspecific techniques and tactics, but also to exhibit good jumping ability in order to gain an advantage over players from the opposing team. Once again, the meaning of body height is emphasised, having in mind significance of the vertical jumping ability and contribution of this anthropometric variable. The taller the player is, the greater chance for succesuful performance in the game of volleyball. However, there are not enough data to support the argument that the higher the players jump, the more wins the team is able to acumulate. Many other factors have the potential to contribute to the success in a volleyball game. In addition, it is possible that once players are able to reach a certain height above the net, additional jumping ability does not improve blocking or spiking performance. In matter of fact, the player don't need, nor he is unconditional to jump as high as possible in every action and game situation to be successfull in block and jump elements, but for sure, the taller he or she is (the greater the values of BJ and SJ), the more possibilities are to respond adequate. Based on the results in Table 2, the system of predicting variables has statistically significant influence on expressing explosive leg power (SBJ), change of direction speed (JT) and sprint (20m dash). It can be seen that coefficient of multiple correlations between predictors and SBJ was R=0.70, with 49% of common variance, and with significant contribution of height (Beta= 0.84, p=0.00). The same anthropometric characteristic has statistically significant contribution to variable that represents speed (Beta=-0.79, p=0.01), but in this case the taller the player is the lower the sprint speed was. The system of prediction variables accounts for 54% of common variance with criterion (20m dash), R=0.73. In the variable that represents change of direction speed (JT), system of predicting variables is statistically significant, with common variance of 41% (R=0.64), but neither variable alone (height nor weight), does not contribute statistically significant, which means that different somatotype (or combinations of specific height and weight) does impact this ability. These findings are coresponding with some previous studies

Conclusion

The results of this study clearly demonstrate that system of predicting variables (BH and BW) does impact special motor abilities in volleyball players. Results of some studies in female and male junior and senior volleyball players suggest the longitudinal skeleton dimensionality, coordination, agility and explosive strength of the vertical jump type to have greatest positive impact on volleyball performance. Longitudional skeleton dimensionality enables ball contacts at a greater height above the net, which is of outmost importance in spiking and blocking. However, due to the complexity of these elements, considerable amount of time is needed to master technique and to apply it in situation conditions (at competitions). For these reasons, longitudinal skeleton dimensionality does not entail any significant competition advantage in the players aged 12-13. The more so, in very tall players it may even have unfavorable effect on motor abilities and situation performance because of accelerated growth and development. It is of paramount importance that the coaches be aware of it and to offer adequate opportunities to the very tall players to play, even at at the cost of less successful competition results. It is also important to pay due attention to these players on training sessions. When the longitudinal bone growth has reached the peak, the longitudinal skeleton dimensionality is being integrated into the players' situation-motor complex. Then the technical-tactical elements perormed above the net (spike and block) become prominent (Grgantov, Katić & Janković, 2006). Elite volleyball players produce greater vertical jump scores than non-elite and developing. Most volleyball coaches would consider vertical jumping ability as the most important physical attribute for volleyball players. As such, a great deal of emphasis has been focused on methods of increasing vertical jump as well as physical factors that contribute to vertical jumping ability specific to volleyball athletes. The ability to evoke higher jump heights, force power and velocity in jump training follows the principles of high quality training, where training variables are manipulated to promote optimal, chronic improvements in performance (Sheppard, Newton & McGuigan, 2007). Further research is needed regarding position-by-position analysis of anthropometric characteristics within a volleyball team including correlations with players' physical performance.

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Comparatives study of selected Physical variable of Women player of small area and large area games

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Abstract: *The purpose of this study to compare selected physical variables between small area and large area games players. Results were statically analysed in all cases the 0.5 levels of confidence fixed the test the level of significance which was considered as an appropriate.*

Introduction: Physical activity is defined as bodily movement produced by skeletal muscles that result in energy expenditure (using calories).

Fitness is defined as the ability to perform moderate-to-vigorous levels of physical activity without undue fatigue and the capability of maintaining this capacity throughout life. The *Principle of Overload* states that by making a particular system work harder (over load), such as the cardiovascular system, on a regular basis, that system will become more fit.

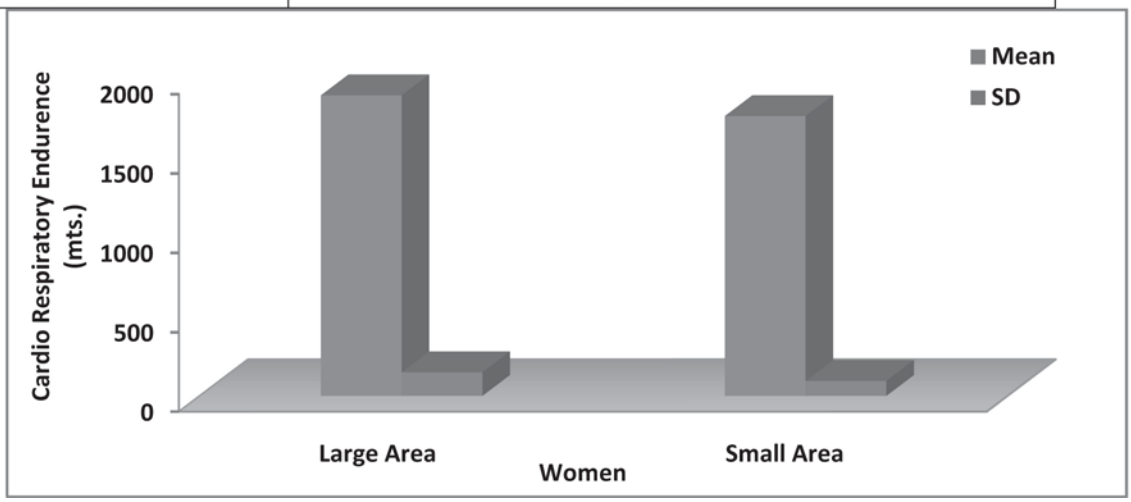
Methodology: The purpose of study to compare the selected physical variables such as speed, agility and cardio respiratory endurance. To achieve the purpose 50 women players of large are and 50 women of small area games studying in college of physical education Kakatiya University, Warangal ranged area between 18-24 were selected as subjects. i.e., test speed, 50 meters Run (sprint) to test cardio respiratory endurance. Cooper 7 meters run (women) and shuttle run (4 x 10 yards) to test the agility was administered.

Dimensions:

A COMPARATIVE ANALYSIS OF CARDIO RESPIRATORY ENDURENCE (MTS.) IN WOMEN BETWEEN LARGE AREA AND SMALL AREA GAMES

Table-1

Women	Cardio Respiratory Endurance (mts.)	
	Large Area	Small Area
Mean	1892	1761.62
SD	148.85	94.38
Minimum	1650	1590
Maximum	2185	1925
Mean difference	130.38	



Results and Discussion:

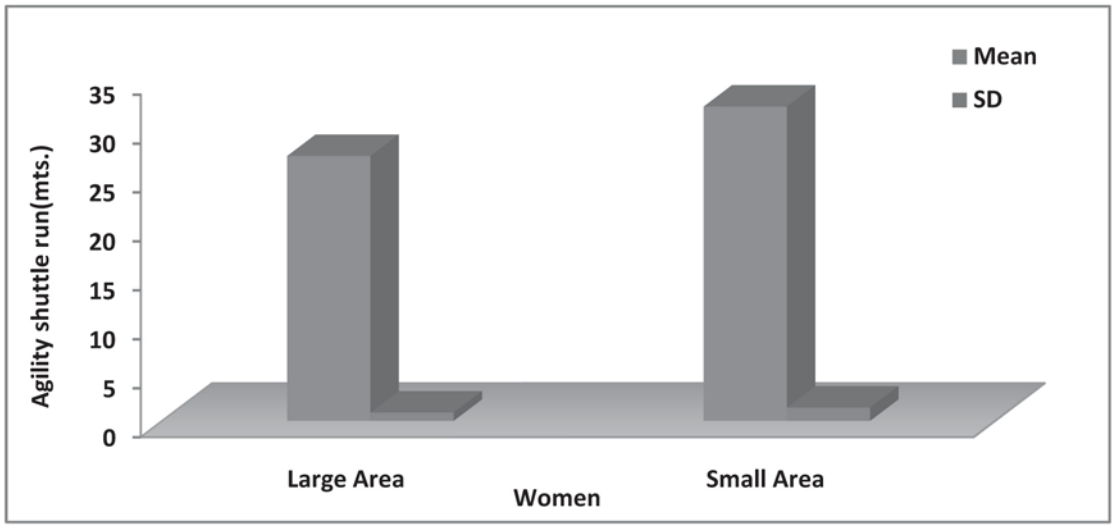
Table – 4.1.5 expose the mean and standard deviation values of cardio respiratory endurance (mts.) of women between large area and small area games are 1892 ± 148.85, 1761.62 ± 94.38 respectively. In each area the maximum and minimum endurances were found to be 2185, 1650 and 1925, 1590 respectively.

From the above table and graph it is observed that there is a mean difference of 130.38 mt. between large area and small area games. Thus it can be inferred that the mean endurance performance of women in large area is more than mean endurance in small area game.

A COMPARATIVE ANALYSIS OF CARDIO AGILITY SHUTTLE RUN (MTS.) (MTS.) IN WOMEN BETWEEN LARGE AREA AND SMALL AREA GAMES

Table-2

Women	Agility shuttle run (mts.)	
	Large Area	Small Area
Mean	27.048	32.094
SD	0.85	1.36
Minimum	25.4	29.67
Maximum	29	34.48
Mean difference	5.046	



Results and Discussion:

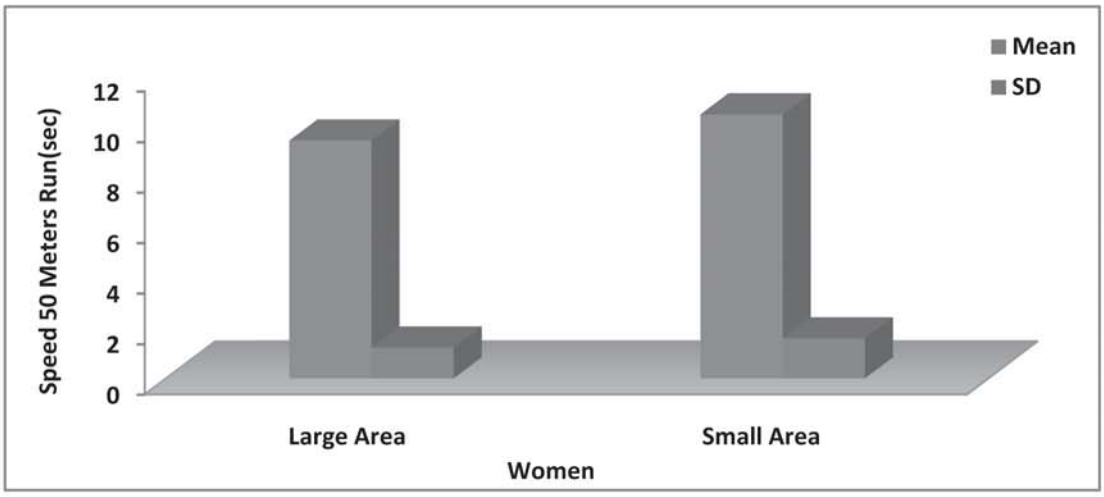
The Table – 4.1.6 reveals the mean and standard deviation values of agility shuttle run (mts.) of women between large area and small area games are 27.048 ± 0.85, 32.094 ± 1.36 respectively. In each area the maximum and minimum Agility shuttle run (mts.) were found to be 29, 25.4 and34.48, 29.67 respectively.

From the above table and graph it is observed that there is a mean difference of agility shuttle run is 5.046 mt. between large area and small area games. Thus it can be inferred that the mean Agility shuttle run (mts.) of women from large area is more than mean agility shuttle run performance in small area game.

A COMPARATIVE ANALYSIS OF SPEED 50 METERS RUN (sec.) IN WOMEN BETWEEN LARGE AREA AND SMALL AREA GAMES

Table-3

Women	Speed 50 Meters Run(sec)	
	Large Area	Small Area
Mean	9.42	10.47
SD	1.22	1.59
Minimum	7	8
Maximum	11.57	17
Mean difference	1.05	



Results and Discussion:

The Table – 4.1.7 reveals the mean and standard deviation values of speed 50 meters run(sec) in women between large area and small area games are 9.42 ± 1.22, 10.47 ± 1.59 respectively. In each area the maximum and minimum speed 50 meters run were found to be 11.57, 7 and 17, 8 respectively.

From the above table and graph it is observed that there is a mean difference of 1.05 sec, between large area and small area games. Thus it can be inferred that the mean speed 50 meters run (sec) in women from large area is more than mean speed 50 meters run(sec) in small area game.

RESULTS:

Table - 4

Women	Cardio Respiratory Endurance (mts.)	
	Large Area	Small Area
Mean	1892	1761.62
SD	148.85	94.38
d.f	98	
t-value	5.23	
t-table	1.96	
p-value	0.00012	
Result	Significant	

Results -1

Table 4.2.5 shows the Mean values, SD, D.F, t value and p-value in Cardio Respiratory Endurance (mts.) of women players between large area and small area games in relation to their performance.

The mean, SD t values of women players between large area and small area games were 1892,148.85 and 1761.62, 94.38 respectively. The observed and table (critical) values of t-test respectively, 5.23, 1.96 and p-value is 0.000012.

The observed values from the above table indicate significant difference in Cardio Respiratory Endurance (mts.) of women players between large area and small area games since the obtained p value is <0.001. Thus the result indicates cardio respiratory endurance of women in large area games is significantly better than small area games. Hence, the hypothesis is rejected.

Results -2

Results is "there is no significant difference in agility shuttle run (mts.) of women players between large area and small area games.

Table-5

Women	Agility Shuttle Run (mts.)	
	Large Area	Small Area
Mean	27.048	32.094
SD	0.85	1.36
d.f	98	
t-value	22.26	
t-table	1.96	
p-value	0.0001	
Result	Significant	

Results -3

Table 4.2.6 shows the Mean values, SD, D.F, t- value and p-value in agility shuttle run (mts.) of women players between large area and small area games in relation to their performance.

The mean, SD t values of women players between large area and small area games were 27.048, 0.85 and 32.094, 1.36 respectively. The observed and table (critical) values of t-test respectively, 22.26, 1.96 and p-value is 0.0001.

The observed values from the above table indicate significant difference in agility shuttle run (mts.) of women players between large area and small area games since the obtained p value is <0.001. Thus the result indicates agility shuttle run (mts.) of women in large area games is significantly better than small area games.

Results -4

Results is "there is no significant difference in speed 50 meters run (sec) of women players between large area and small area games.

Table-6

Results -5

Women	Speed 50 Meters Run(sec)	
	Large Area	Small Area
Mean	9.4166	10.4614
SD	1.22	1.59
d.f	98	
t-value	3.69	
t-table	1.96	
p-value	0.00039	
Result	Significant	

Table 4.2.6 shows the Mean values, SD, D.F, t value and p-value in speed 50 meters run (sec) of women players between large area and small area games in relation to their performance.

The mean, SD t values of women players between large area and small area games were 9.42, 1.22 and 10.47, 1.1.59 respectively. The observed and table (critical) values of t-test respectively, 3.69, 1.96 and p-value is 0.00039.

The observed values from the above table indicate significant difference in speed 50 meters run (sec) of women players between large area and small area games since the obtained p value is <0.001. Thus the result indicates speed 50 meters run (sec) of women in large area games is significantly better than small area games. Hence, the hypothesis is rejected.

Results -6

Results is "there is no significant difference in breath holding time (sec.) of women players between large area and small area games.

Table-7

Women	Breath holding Time (sec.)	
	Large Area	Small Area
Mean	39.64	36.31
SD	4.31	4.29
d.f	98	
t-value	3.85	
t-table	1.96	
p-value	0.0002	
Result	Significant	

Results -7

Table 4.2.6 shows the Mean values, SD, D.F, t value and p-value in Cardio breath holding time (sec.) of women players between large area and small area games in relation to their performance.

The mean, SD t values of women players between large area and small area games were 39.64, 4.31 and 36.31, 4.29 respectively. The observed and table (critical) values of t-test respectively, 3.85, 1.96 and p-value is 0.0002.

The observed values from the above table indicate significant difference in breath holding time (sec.) of women players between large area and small area games since the obtained p value is <0.001. Thus the result indicates breath holding time (sec.) of women in large area games is significantly better than small area games

CONCLUSION:

- A comparative analysis of physiological variables such as resting pulse rate (sec.) in men between large area and small area games. Thus it can be inferred that the mean resting pulse rate counts in men from large area is significantly higher than mean resting pulse rate counts in small area game.
- A comparative analysis of physical fitness variables such as cardio respiratory endurance (mts.) in women between large area and small area games .it can be inferred that the mean endurance performance of women in large area is significantly higher than mean endurance in small area game.
- In comparative analysis of physical fitness variables such as agility shuttle run in women between large area and small area games .thus it can be inferred that the mean agility shuttle run of women from large area is significantly higher than mean endurance performance in small area game.

BENEFITS OF MEDITATION TO CHILDREN

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Introduction

Meditation has been practiced for thousands of years. Meditation originally was meant to help deepen understanding of the sacred and mystical forces of life. These days, meditation is commonly used for relaxation and stress reduction.

Meditation is considered a type of mind-body complementary medicine. Meditation produces a deep state of relaxation and a tranquil mind.

During meditation, you focus your attention and eliminate the stream of jumbled thoughts that may be crowding your mind and causing stress. This process may result in enhanced physical and emotional well-being.

Meditation is an excellent way to unwind after an eventful day. Life can at times be stressful, triggered by various factors such as a work, family and life in general. Our children are not immune to stress either; they also undergo quite considerable amounts of stress on a daily basis. School-based assignments feuds between their parents and either can contribute to stress. If your child is stressed and your don't Know where to start, **learn how to manage stress through meditation.**

Introducing Elements of Meditation to our child

Before we begin the meditation sessions, it is important to let our kid Know what exactly they will be involved in, what is expected of them and basically why they have to be ina quite place not even allowed to shout as much as they would love to i.e. introducing the elements of meditation.

AN OPEN ATTITUDE

There should be willingness to learn as meditation needs a lot of commitment. This is hard to achieve from a child. Nonetheless, we need to explain the fact to kid in a way he or she will understand. He or she has to learn how to block distractions during a meditation session in order to fully benefit from it.

A QUIET SETTING

The child has to instinctively know that when it is the time for meditation session, everything else has to take a back seat. The room should have a fewer distractions as possible. The child should be understand why there will be no shouting, running around, cycling or doing anything else apart from what he is told to.

ATTENTION

The child must be taught how to focus his attention on something specific as per the instructor's guidance. These specific item might be a set of words or even an object, if any distractions interrupt the process, the child should be taught how to regain his or her concentration.

A RELAXED POSTURE

During meditation, there is a number of positions which a person should try out for favorable results. Such postures include sitting, standing or even lying down on the back. The key here is that the posture should be as relaxing as possible.

HOW TO START THE PROCESS

FEELING THEIR BREATH

The breath is the key starting point in a meditation session. For starters, it is very important for a child to learn how to feel his breath. The child should feel the movements of his chest as he breaths in and out. The session should be conducted in a quiet place, with lots of practice, the child will learn how to focus and slowly waft away into a spiritual state of higher consciousness.

TEACH THEM TO LET GO

For children, it is not easy to concentrate and let go in a meditation session. Unless they are willing to, it is hard to force them do it. However, with persistence and lots of patients, a parent or an instructor can teach the child how to go about it.

BE CREATIVE

Being creative helps here. A parent should know what a child likes and use it to win his attention. Create a fairy tale that is captivating enough to sway them to the world of your creation, a world they identify with. Draw their curiosity and once you have them where you want, have them join in the tale and share their imaginations. You will also learn a lot about your kid's thoughts from this.

BE PATIENT

Never set a goal when teaching children meditations. Just guide them and let them be guided by their own energy towards establishing their own balances. Only interfere by guiding them to gain control over their feelings when they become restless.

BE A PART OF PROCESS

Join them, the best lessons are taught with illustration. When you till them to relax, relax as well. **Doing meditation together will be very helpful for your family** as you will all be healthier, relaxed and focused as a family.

BENEFITS OF MEDITATION TO CHILDREN

Meditation can give you a sense of calm, peace and balance that benefits both you emotional will-being and your overall health.

And these benefits don't end when your meditation session ends. Meditation can help carry you more calmly through your day and may improve certain medical conditions.

Children stand to gain a lot from meditation. If started early, the kids will have more to gain as they grow and later in their adult life. The benefits comes in many forms, they very from psychological, spiritual, and physical to emotional. Below is a list and brief explanation to each.

PSYCHOLOGICAL BENEFITS TO CHILDREN

- ❖ Improved memory

Meditation helps a child remember thing more clearly. If started early, this will help them improve their grades in school.

- ❖ Greater creativity
- ❖ Reduced anxiety

With meditation, the child worries less and is calmer in stressful situations.

- ❖ Prevent addictions

Teaching your child to be more conscious of his or her mind will help prevent them from indulging in adductive activities such as smoking and pornography.

SPIRITUAL BENEFITS

- ➢ Intuition

With continues practice, the child is able to become more intuitive.

- ➢ Greater sense of the purpose to live.
- ➢ A feeling of connection to other people and the environment.
- ➢ Ability to let go and let nature take it's cource.
- ➢ **Mindfulness of being present and concentrating on the body of physical benefits.**

PHYSICAL BENEFITS

- ✓ Better immune system

  Research shows that the people who meditate have lesser changes of suffering from high blood pressure, stroke and heart attacks. Children will grow up healthier and stronger.
- ✓ Relaxed muscles

  Meditation helps one relax not only his or her mind but also the muscles. This will reduce the muscular tension leading to a more relaxed growth.
- ✓ Reduced pain

The calm that comes with meditation helps reduce strain relaxed pain like headache.

- ✓ Better sleep

  The relaxing effect of meditation will help your kids sleep more soundly and luxuriously, good sleep will further enhance their concentration.

EMOTIONAL BENEFITS

In addition to the above benefits, meditation is good for emotional well-being.

- ✓ Greater ability to love and be loved

Meditation help children appreciate their surroundings; they are able to show more affectionate feeling towards other. People tend to respond in kind, something will that help your child develop a healthy self-esteem.

- ✓ More confidence

Ability to calm their minds will help them face issues more confidently, weather it is bully at school or that girl they really want to approach.

- ✓ Positive attitude

Generally, meditation help the child project a positive outlook towards life.

- ✓ Happiness

Meditation is all about understanding and following your path. When the child starts to follow his or her own path, he or she is happier and more fulfilled.

CONCLUSSION

Any one can practice meditation, it's simple and inexpensive, and it does not require any special equipment, and you can practice meditation wherever you are ---- weather you are out for walk, riding the bus, waiting at the doctor's office or even in the middle of a difficult business meeting.

If stress has you anxious, tense and worried, consider trying meditation. Spending even a few minutes in meditation can restore your calm and inner peace.

Different types of meditation may include different features to help your meditation. You can make meditation as formal or informal as you like, however it suits your lifestyle and situation. Some people built meditation in to their daily routine. For example, they may start and end each day with an hour of meditation. But all you really need is a few minutes of quality time for meditation. Meditation is not a replacement for traditional medical treatment. But it may be useful addition to your other treatment.

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COMPARISON OF SELECTED PHYSICAL FITNESS COMPONENTS BETWEEN BASKETBALL AND HANDBALL PLAYERS.

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INTRADUCTION

Physical fitness can also prevent or treat many chronic health conditions brought on by unhealthy lifestyle or aging. To stay healthy it is important to engage in physical activity. Physical fitness is the ability of the human body to function with figure and alertness, without undue fatigue, and with ample energy to engage leisure activities, and to meet physical stress. Muscular strength and endurance, cardio respiratory integrity, and general alertness are the overt signs of physical fitness. Physical fitness is usually measured in relation to functional expectations-that is, typically that periodic test measuring strength endurance agility coordination and flexibility. In addition stress analyze fitness. If individuals are able to accomobidadte to the stressors. They are assumes to be fit. The level of physical fitness can be influenced by regular, systematic exercise. Moderate activity will is to be improved, however it is necessary to participate in more intensive exercise that overloads the physiological systems and that promotes change.

HYPOTHESIS: It was hypothesized that the basketball players may have better physical fitness then handball players.

DELIMITATIONS: The subjects were selected at random from physical education college SKCPE NALGONDA. The test administrated for twenty basketball players and twenty handball players with in the age group of 18-25.

METHODOLOGY: The purpose of the study was to comparison of selected on physical fitness component between college level basketball players and handball players in order to achieve this purpose, twenty basketball players and twenty handball players from physical education college SKCPE, NALGONDA.

EXPERIMENTAL DESIGN: For this study, the subject was selected at random independently drown from twenty basketball players and twenty handball players who actively participated in the inter-collegiate tournament in their respective game. Hence, the design of the subjects chosen for this study was based on independently random group design.

TEST ADMINISTRATION

50mtr run: At the whistle, subject is made to run from the starting point to the finish and the time taken to make the run is noted down.

Vertical jump: At the whistle, subjects are made to jump and the height is taken.

Statistical techniques: the following statistical produces were following to find out selected physical fitness components between the basketball and handball players among physical education college means the research scholar used t-ratio calculate to significance.

RESULTS AND DISCUSSION

TABLE-1
50 METERS RUN TEST
THE MEAN, STANDARD DEVIATIONOF THE MEAN AND t-ratio OF BASKETBALL AND HANDBALL PLAYERS

Team	Variable	Mean	Mean difference	Standard deviation	t-ratio
Basketball players	SPEED	8.66	0.6	0.379	0.642
Handball players	SPEED	8.736	0.6	0.369	0.642

0.05 LEVEL SIGNIFICANCE

DISCUSSION OF FINDINGS: The table shows that the difference between the mean in bating of basketball players and handball players men were the mean difference between the wars. 0.6 the calculation of t-ratio 0.642

The t-ratio was found to be significance at 0.05 level of confidence. The hypothesis was accepted.

TABLE-2
EXPLOSIVE POWER
THE MEAN, STANDARD DEVIATION OF THE MEAN AND t-RATIO OF BASKETBALL AND HANDBALL PLAYERS

TEAM	VARIABLE	MEAN	MEAN DIFFERENCE	STANDARD DEVIATION	T-RATIO
Basketball players	EXPLOSIVE POWER	6.758	0.115	0.486	0.780
Handball players	EXPLOSIVE POWER	6.643	0.115	0.441	0.780

0.05 level significance

DISCUSSION OF FINDINGS: The table shows that the difference between the mean in bating of basketball players and handball players men were the mean difference between the was. 0.115 the calculation of t-ratio 0.780

The t-ratio was found to be significant at 0.05 level of confidence. The hypothesis was accepted.

CONCLUSIONS: With the limitation of the study the following conclusions were made: on comparing speed and explosive power, between twenty basketball players and twenty handball players, it was found out the basketball players had better speed and explosive power then handball players in SKCPE college. BETTER PHYSICAL FITNESS WILL LEAD TO A HEALTHY LIFE.

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IMPORTANCE OF YOGA IN DAILY LIFE

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Abstract: *Yoga in Daily Life is a system of practice consisting of eight levels of development in the areas of physical, mental, social and spiritual health.When the body is physically healthy, the mind is clear, focused and stress is under control. This gives the space to connect with loved ones and maintain socially healthy relationships. When you are healthy you are in touch with your inner Self, with others and your surroundings on a much deeper level, which adds to your spiritual health.The word "Yoga" originates from Sanskrit and means "to join, to unite". Yoga exercises have a holistic effect and bring body, mind, consciousness and soul into balance. The main goals of "Yoga in Daily Life" are Physical Health, Mental Health, Social Health, Spiritual Health, Self-Realization or realization of the Divine within us. These goals are attained by Love and help for all living beings,Respect for life, protection of nature and the environment,A peaceful state of mind, Full vegetarian diet, Pure thoughts and positive lifestyle, Physical, mental and spiritual practices, Tolerance for all nations, cultures and religions. Yogic techniques are known to improve one's overall performance. Pranayama is an important, yet little known part of Yoga. Until recently, this art and science of yogic breathing was almost completely unknown to the common man like many other ancient Indian arts.Pranayama techniques act to purify the nadis including these three main energy channels.*

Yoga is a traditional method of meditation developed by the saints of ancient India. They practiced yoga as an effective method of controlling their mind and bodily activities. Yoga is a system of practice consisting of eight levels of development in the areas of physical, mental, social and spiritual health. When the body is physically healthy, the mind is clear, focused and stress is under control. This gives the space to connect with loved ones and maintain socially healthy relationships. When you are healthy you are in touch with your inner Self, with others and your surroundings on a much deeper level, which adds to your spiritual health. The word "Yoga" originates from Sanskrit and means "to join, to unite". Yoga exercises have a holistic effect and bring body, mind, consciousness and soul into balance. The main goals of "Yoga in Daily Life" are Physical Health, Mental Health, Social Health, Spiritual Health, Self-Realization or realization of the Divine within us. These goals are attained by Love and help for all living beings, Respect for life, protection of nature and the environment, A peaceful state of mind, Full vegetarian diet, Pure thoughts and positive lifestyle, Physical, mental and spiritual practices, Tolerance for all nations, cultures and

religions. Yogic techniques are known to improve one's overall performance. Pranayama is an important, yet little known part of Yoga. Until recently, this art and science of yogic breathing was almost completely unknown to the common man like many other ancient Indian arts. Pranayama techniques act to purify the nadis including these three main energy channels.

When the body is physically healthy, the mind is clear, focused and stress is under control. This gives the space to connect with loved ones and maintain socially healthy relationships. When you are healthy you are in touch with your inner Self, with others and your surroundings on a much deeper level, which adds to your spiritual health.

Yoga increases the flexibility of the spine, improves body's physical condition and heightened awareness to the importance of relaxation. It has been emphasized that each exercise be practiced slowly, coordinating movement with the breath, pausing motionless in each position and always with full concentration.

Yoga teaches you to focus on breathing while you hold the poses. This attention to breath is calming it dissolves stress and anxiety. Yoga can help cure insomnia, as regular yoga practice leads to better and deeper sleep. Yoga can help fight fatigue and maintain your energy throughout the day. Yoga is an effective treatment for a variety of autoimmune diseases because it can reduce the symptoms these diseases often cause, such as stiffness, malaise, fatigue, and weakness. Even children can benefit from yoga. Those with attention deficit disorder and hyperactivity can learn to relax and get control by using yoga breathing and yoga asanas. Yoga has been used to help heal victims of torture or other trauma. Because yoga is a form of meditation, it results in a sense of inner peace and purpose, which has far-reaching health benefits. Peace of Mind, Consciousness and Soul To live in harmony with oneself and the environment is the wish of every human. However, in modern times greater physical and emotional demands are constantly placed upon many areas of life. The result: more and more people suffer from physical and mental tension such as stress, anxiety, insomnia, and there is an imbalance in physical activity and proper Exercise. This why of methods and techniques for the attainment and improvement of health, as well as physical, mental and spiritual harmony are of great importance, and it is exactly in this respect that "Yoga in Daily Life" comprehensively offers an aid to help one's self. Throughout the many years that I have been active in western countries, I have become familiar with the modern lifestyle and the physical and psychological problems faced by the people of today. The

knowledge and experience I gained led me to develop the system of "Yoga in Daily Life". It is systematic and graduated, integrating all areas of life and offering something valuable for each phase of life. Regardless of age or physical constitution, this system opens the classical path of Yoga to all. In developing this system to accommodate the needs of today's people, much consideration was given to the conditions within modern society, without losing the originality and effect of the ancient teachings.

The word "Yoga" originates from Sanskrit and means "to join, to unite". Yoga exercises have a holistic effect and bring body, mind, consciousness and soul into balance. In this way Yoga assists us in coping with everyday demands, problems and worries. Yoga helps to develop a greater understanding of our self, the purpose of life and our relationship to God. On the spiritual path, Yoga leads us to supreme knowledge and eternal bliss in the union of the individual Self with the universal Self. Yoga is that supreme, cosmic principle. It is the light of life, the universal creative consciousness that is always awake and never sleeps; that always was, always is, and always will be. Many thousands of years ago in India, Rishis (wise men and saints) explored nature and the cosmos in their meditations. They discovered the laws of the material and spiritual realms and gained an insight into the connections within the universe. They investigated the cosmic laws, the laws of nature and the elements, life on earth and the powers and energies at work in the universe - both in the external world as well as on a spiritual level. The unity of matter and energy, the origin of the universe and the effects of the elementary powers have been described and explained in the Vedas. Much of this knowledge has been rediscovered and confirmed by modern science. These are experiences and insights a far-reaching and comprehensive system known as Yoga originated and gave us valuable, practical instructions for the body, breath, concentration, relaxation and meditation. The practices that this book offers have therefore already proven themselves over thousands of years and have been found to be helpful by millions of people. The system "Yoga in Daily Life" is taught worldwide in Yoga Centres, Adult Education Centres, Health Institutions, Fitness and Sports Clubs, Rehabilitation Centres and Health Resorts. It is suitable for all age groups - it requires no "acrobatic" skills and also provides the unfit, as well as handicapped, ill and convalescent people, the possibility of practicing Yoga. The name itself indicates that Yoga can be and should be used "in Daily Life". The exercise levels were worked out in consultation with doctors and physiotherapists and can therefore with observation of the stated rules and precautions be practiced independently at home by anyone. "Yoga in Daily Life" is a holistic system, which means it takes into

consideration not only the physical, but also the mental and spiritual aspects. Positive Thinking, perseverance, discipline, orientation towards the Supreme, prayer as well as kindness and understanding form the way to Self-Knowledge and Self-Realization.

The main goals of "Yoga in Daily Life" are:

1. Physical Health
2. Mental Health
3. Social Health
4. Spiritual Health
5. Self- Realization or realization of the Divine within us

These goals are attained by:

1. Love and help for all living beings
2. Respect for life, protection of nature and the environment
3. A peaceful state of mind
4. Full vegetarian diet
5. Pure thoughts and positive lifestyle
6. Physical, mental and spiritual practices
7. Tolerance for all nations, cultures and religions

Physical Health: The health of the body is of fundamental importance in life. As the Swiss-born Physician, Paracelsus, very correctly said, "Health isn't everything, but without health everything is nothing". To preserve and restore health there are physical exercises (Asanas), breath exercises (Pranayama) and relaxation techniques. Within "Yoga in Daily Life" the classic Asanas and Pranayamas are divided into an eight-level system, beginning with "SarvaHitaAsanas" (meaning, "Exercises that are good for everyone"). Seven other parts follow this preparatory level and lead progressively through the practice of Asanas and Pranayamas. Several special programs have been developed from the basic exercises: "Yoga for Back Pain", "Yoga for Joints", "Yoga for Seniors", "Yoga for Managers" and "Yoga for Children". To maintain good health, other valuable exercises within "Yoga in Daily Life" are the purification techniques of Hatha Yoga. These involve Deep Relaxation (Yoga Nidra), Concentration Exercises (e.g. Trataka) as well as Mudras and Bandhas (special Yoga techniques). An even greater factor in the maintenance of good health is the food we eat. What we eat influences both our body and psyche - our habits and qualities. In short, the food

we eat has an effect upon our whole being. Food is the source of our physical energy and vitality. Balanced and healthy foods include: grains, vegetables, pulses, fruit, nuts, milk and milk products, as well as honey, sprouts, salads, seeds, herbs and spices - either raw or freshly cooked. Foods to be avoided are old, reheated or denatured foods, meat (including all meat products and fish) and eggs. It is also best to avoid alcohol, nicotine and drugs as these rapidly destroy our health.

Mental Health: In general, we are led through life by the mind and senses, rather than having these under our control. However, to gain control of the mind, we must first place it under inner analysis and purify it. Negative thoughts and fears create an imbalance in our nervous system and through this our physical function. This is the cause of many illnesses and sorrows. Clarity of thought, inner Freedom, contentment and a healthy self-confidence are the basis for mental wellbeing. That is why we strive to gradually overcome our negative qualities and thoughts and aim to develop positive thoughts and behavior. "Yoga in Daily Life" offers numerous methods to attain mental wellbeing: Mantra practice, the observance of ethical principles, the keeping of good company and the study of inspiring texts to purify and free the mind. An important tool in self-investigation and selfknowledge is the technique of "Self-Inquiry Meditation", a step-by-step meditation technique of Self-Analysis. In this meditation practice we come into contact with our subconscious, the source of our desires, complexes, behavioral patterns and prejudices. The practice guides us to become acquainted with our own nature - as we are and why we are so - and then beyond self-acceptance to Self-Realization. This technique enables us to overcome negative qualities and habits and helps us to better manage life's problems.

Social Health: Social health is the ability to be happy within oneself and to be able to make others happy. It means to nurture genuine contact and communication with other people, to assume responsibility within society and to work for the community. Social health is also the ability to relax and experience life in all its beauty. One of the growing problems of our times is drug addiction. It is a clear sign of social illness. The system of "Yoga in Daily Life" can assist in overcoming this illness and grant people a new, positive aim and purpose in life. The importance of keeping good, positive company has a great influence upon our psyche, as such companionship moulds and forms our personality and character. Positive company is of great importance in spiritual development. Living "Yoga in Daily Life" means to work for ourselves and for the benefit of others. To do valuable and constructive work for our neighbours and the community, to preserve nature and the

environment and work for peace in the world. To practice Yoga means to be active in the most positive sense and to work for the welfare of all of mankind.

Spiritual Health: The main principle of spiritual life and the highest precept of mankind are:

AHIMSA – PARAMO- DHARMA This precept embraces the principle of non-violence, in thought, word, feeling and action. Prayer, meditation, Mantra, positive thinking and tolerance, lead to spiritual health. Humans should be protectors, not destroyers. Those qualities that really make us human are the ability to give, understand and forgive. To protect life and respect the individuality and independence of all forms of life is a primary practice of the Yoga teachings. By following this precept greater tolerance, understanding, mutual love, help and compassion develops - not only between individuals, but between all humans, nations, races, and religious faiths.

Self-Realization or realization of the Divine within us (Healthy Life): Cultivate indomitable will**.** Practice self-control and self-mastery. Have self-confidence. Develop independent judgment. Do not argue. Strive ceaselessly for Self-realization. Kill this little ego. Develop pure love. Rise above all distinctions of caste, creed and colour. Give up the idea of 'I-ness', 'Mine-ness'. Look within for the happiness which you have sought in vain in the sensual objects. Moksha is the summumbonum of life. It is freedom from births and deaths. It is not annihilation. It is annihilation of this little 'I'. It is obtained through knowledge of the Self. You will have to know the Truth through direct intuitive experience. You will have to cut asunder the veil of ignorance by meditation on the Self. Then you will shine in your pristine purity and divine glory. Do not try to drive away the unimportant and irrelevant thoughts. The more you try, the more will they return and the more strength will they gain. You will only tax your energy and will. Become indifferent. Fill the mind with divine thoughts. The others will gradually vanish. Get yourself established in Nirvikalpa Samadhi through meditation without perfect Brahmacharya, you cannot have substantial spiritual progress. There is no half measure in the spiritual path. Control the body first. Then purify your thoughts through prayer, Japa, Kirtan, Vichara and meditation. Make a firm resolve, "I will be a perfect Brahmachari from today." Pray to the Lord to give you spiritual strength to resist the temptations of life and kill lust. Constant study of the lives of saints will enable you to lead a virtuous life. You will imbibe very noble qualities. You will be gradually moulded in the spiritual path. You will draw inspiration from them. There will be an inner urge in you to attempt for God-realization. Pray to the Lord that you may become a saint.

The Techniques of Pranayama: Yogic techniques are known to improve one's overall performance. Pranayama is an important, yet little known part of Yoga. Until recently, this art and science of yogic breathing was almost completely unknown to the common man like many other ancient Indian arts. Those who knew it used to be very reluctant to share their knowledge and experience with anyone, unless a student proved by tests that he was ready to receive it.

"Tasmin sati swaspraswas yogartivich Pranayama"

This having been (accomplished) "Pranayama" which is control of inspiration and expiration1 the inspiration of prana-vayuisshwasa and expiration is prashwasaand the cessation of both is characteristic of Pranayama. Patanjaliin his Yoga Sutra describes – Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi as eight angas(parts) of Yoga. Amongst them, in the present materialistic world, the third and fourth part, Pranayama and Asana (Postures) are considered as very important part and prescribed by modern medicine too. The beneficial effects of different Pranayama are well reported and has sound scientific basis. 23There is reported evidences of Pranayama that it increases chest wall expansion and lung volumes. The ancient sages also discovered that among the thousands of nadis there are three which are the most powerful energy channels and, when purified enough, these can promote the development of the human being in all three planes: physical, mental and spiritual, allowing us to reach higher levels of consciousness. These channels are called IDA, PINGALA and SHUSHUMNA nadis. Pranayama techniques act to purify the nadis including these three main energy channels. Yogis discovered a long time ago that breathing through the left nostril stimulates the IDA nadi or the "moon channel" (connected with the parasympathetic nervous system) and breathing through the right nostril stimulates the PINGALA nadi or the "sun channel" (connected with sympathetic nervous system). By balancing the functioning of both nadis (that is, both aspects of the autonomic nervous system) we can stimulate the main energy channel called SHUSHUMNA and harmonize the activity of the nervous system as a whole.

Conclusions: To conclude the fundamental principle of "Yoga in Daily Life" is religious freedom. Yoga is not a religion - it is the source of spirituality and wisdom, the root of all religions. Yoga transcends religious boundaries and reveals the way to unity. "Yoga in Daily Life" offers the spiritual aspirant guidance on life's path through the practices of Mantra Yoga and Kriya Yoga. As the most highly developed beings upon earth, humans are

capable of realizing their real nature and inner Self, God. The spiritual goal of Yoga is God-Realization, the union of the individual soul with God. The realization that we are all one in our common root and connection to God is the first step. Decisions regarding your health and Wellbeing and a free, happy life, are in your hands. Practice regularly with firm determination and success will be certain. I wish all Yoga practitioners and those still to become practitioners much happiness, success, health, harmony, joy in life and God's blessing.

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A STUDY ON EFFECT OF MEDICINE BALL TRAINING ON EXPLOSIVE POWER AMONG VOLLEYBALL PLAYERS

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Introduction

Medicine ball training has been around since the ancient Greeks discovered health benefits from exercising with weighted ball it is one of the oldest forms of strength and conditioning used to improve health explosive power in relation to exercise and athletics is the product strength and speed or velocity. Therefore the more powerful we the more force you can develop quickly research shown us that the ability to generate to maximum power typically results in enhanced athletic performance. Volleyball on Feb. 09 1895 Holyoke Massachusetts (USA) William G. Morgan a YMCA physical education director created a new game called mignonette as pastime to be played indoors and by any no. of players the game took some of its characteristic.

The physical fitness plays a vital roll in the performance. An individual physical fitness and performances depend in the coordinative functions of the various factors such a physical physiological abilities, nutrition, technique, tactics, body size and composition. Speed is the ability of individual to make successive movements of the same kind in the shortest period of time.

Agility of the physical ability that enables a person to rapidly change the body position and direction in a precise manner. Agility is the ability to change direction quickly and effectively, while moving as early as possible at full speed. Arm strength can be defined and determined in terms of the force that the shoulder, shoulder girdle and wrist muscles exert in one maximum effort.

Hypothesis: It was hypothesized that medicine ball training will have significant effort on the medicine ball training on explosive powers in volleyball players.

Limitations: This study was limited in the following respect and these limitations would be taken in consideration while interpreting the result. The experiment was conducted for SRI KRISHNA COLLEGE OF PHYSICAL EDUCATION VOLLEYBALL PLAYERS. Selection of subjects is below 25years of age only. These were no control over the diet environment etc.. in this study.

Methodology: The purpose of this study was to find out the effect of medicine ball training exercise on explosive power among volleyball players. In order to achieve this purpose 20 students from SKCPE NALGONDA were taken as subjects in the age group below 25 years at random.

Experimental design: The initial performance of explosive power of every subject was recorded through an objective test. Then performance was recorded. These subjects were then divided into two groups. Thus the experimental design was equivalent group design. The subjects had adopted the rules and regulations strictly while they excuted the performance measurements were made more accurate and reliable.

DEPENDENT VARIABLE: Explosive power

INDEPENDENT VARIABLE: Medicine ball training

TEST ADMINISTRATION

VARIABLE	TEST
Explosive power	Vertical jump

STATISTICAL TECHNIQUES: The following statistical technique and procedure were following in analyzing the scores collected. The calculation was done by raw score method for purpose of testing the validity of the equation of two groups and to that the significance of the difference between the means of the experimental treatment the t-ratio.

RESULTS AND DISCUSSIONS: The purpose of the study was to find out the effect of medicine ball training exercise on the explosive power among volleyball players, in order to achieve this purpose 20 students from SKCPE NALGONDA were taken as subjects in the age group below 25 years at random. They are all normal healthy students and equally good in the game.

TABLE-1
THE MEAN STANDARD DEVIATION OF THE MEAN AND T-RATIO OF VOLLEYBALL PLAYERS SKCPE NALGONDA

Group	Mean	Standard deviation	t-ratio
Control	2.18	1.48	0.67
Experimental	2.64	1.63	0.67

Significance at 0.05 levels

It is understood table-1 that means values for control and experimental group 2.18 and 2.64 respectively. When the statistical treatment was given to the score the obtained t – value was 0.67 this was shown that due to medicine ball training experimental group as increased their explosive power. Thus obtained value was found to the significant.

DISCUSSION: The table shows that the difference the meaning volleyball players women were the standard deviation difference to the calculation ratio. That the ration was found to be significant and level of confidence the hypothesis was accepted.

CONCLUSIONS: The significant mean difference between control and experimental group on pre test scores proved that the equation made in the study is proved right. The medicine ball training exercises improved explosive power among the volleyball players.

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A STUDY ON EVALUATION AND MODIFICATIONS OF SPECIFIC PHYSICAL FITNESS TEST AND SKILL TEST OF FOOTBALL PLAYERS

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ABSTRACT

The purpose of the study was to determine the Evaluation and Modifications of Specific Physical fitness test for University Level Football players. Total 91 football players of which, 36 school level male football players, 20 college level male players, 17 university level male football players and 18 college level female football players volunteered as subjects. The aim of the study was to evaluate and modify the existing specific fitness field test for young football players developed by Zelenka et. al. (1964). For this purpose, the correlation coefficient between the performance of the subjects in the modified test and Zelenka test. The correlation in performance between Zelenka's functional fitness test and the performance in Modified specific Functional Fitness test will enable to evaluate the concurrent validity of the modified test. For this purpose, the 't' test is used to evaluate the performance of the subjects in the test was conducted to analyze the difference in means among all groups of subjects namely school level, college level and university level.

FIVE KEY WORDS: - Evaluation, Modification, Performance, Fitness, Concurrent.

INTRODUCTION:

Association football, which is also known as Soccer, is accepted as the most popular form of sport in the world, being played in every nation without exception. Soccer has grown with a rich history and the formation of Football Association in 1863 has paved the way for spreading the game throughout the world, Soccer, which is also popularly known as Football game has spread to continental European countries and later to South America and the other continents. The governing body of Football throughout the world, the Federation of the International Football Association (FIFA) was set up in 1904 and the first Olympic Soccer Competition was held four years later. The first World Cup Tournament was held in 1930, Organized by Uruguay 13 National teams participated and champions Uruguay Runners-Up Argentina, Third Place USA, Fourth Place Yugoslavia which has become a regular feature of once in four years like Olympic competitions and is arguably the tournament with the most fanatical hold on its spectators and TV audiences. It is acknowledged by coaches, trainers and sport scientists that preparation for competitive matches calls for a systematic approach, which includes consideration of fitness levels of individual players as well as the team as a

whole. The fitness profiles of the players are considered relevant not only for the preparation of the players and team for the important matches and tournaments but also throughout the competition season. The Physical fitness abilities of the players is developed during off-season and pre-competitive season and maintained during competitive season. Monitoring the impact of Physical fitness training during different periods of training and also assessing the level of physical fitness of individual players during different periods is also considered most essential. Bangsbo (1994) has described various running tests specifically designed for soccer players. They included a sprint test performed seven times over a slalom course of 35 meters with 25 seconds rest between sprints. The duration of each sprint was recorded and a fatigue index was obtained by comparing the fastest and slowest sprints. Blood lactate concentration was found to be between 9 and 14 ml. which conformed the involvement of anaerobic activity to a large extend.

Bangsbo (1993), the performance in soccer is determined by the player's physiological, psychological, technical as well as tactical characteristics since they were closely linked to each other. For better evaluating the performance of the players, a bout of research was done to investigate physiological changes during match play. So, many parameters were commonly used for measurement. The following parameters were commonly used for measure the work performed: Maximal Oxygen Uptake, it was frequently used since it, regards to Howley and Powers, was a maximal aerobic power that useful to measure the aerobic capacity. Besides, Yo-Yo test was also one of the well-developed protocols for soccer players. There are altogether three Yo-Yo tests: Yo-Yo endurance test, Yo-Yo intermittent endurance test and Yo-Yo intermittent recovery test. Both of the Yo-Yo tests are used to evaluate one's ability to complete bouts of 2x20m run over a proloned period of time. Yo-Yo tests are valid and useful for the players who perform intermittent sports such as tennis, handball, basketball and soccer (Bangsbo, 1996).

OBJECTIVE: The objective of the study to determine the evaluation and modification of Specific Physical fitness test for Football players.

HYPOTHESIS: There will be significance difference in football players in specific physical fitness field tests.

METHODOLOGY: The purpose of the study was to determine the evaluation and modification of Specific Physical fitness test for Football players. The t-test was used to determine the significance of differences between the different groups for their mean scores on different tests.

Procedure of Test: The aim of the study was to evaluate and modified the performance of football players in specific fitness field tests.

General Physical fitness test by Sukumar Saha (1986) developed this test as under mentioned items:-
3 hops with right leg (To asses the explosive strength endurance)
3 hops with right leg and left
Zig-Zag run (To asses the agility)
300 meters sprint (To asses speed endurance)

Football Skill test adopted by Van Rossum and Wijbenga(1993) developed theses items:-

1.16 meters goal kicking
2. Kicking for distance and accuracy
3. Ball juggling
4. Slalom dribble

Specific Functional Fitness Test developed by Zelenka et. al.(1964):Zelenka et. al (1964) have developed a specific function test for young football players. The test was so designed to be carried out on a marked out portion of the penalty area of football field and the competition of one round of the test was measuring 123 meters. The test was carried out twice with an interval of 45-60 seconds in relation to rest pulse frequency. The test was performed with football boot from standing start position and the test consisted of a sprint with a sharp change of direction, jumping and crawling under a low athletic hurdle (obstacle of 90 centimeters height) slalom dribble of the football between 7 gates and passing the ball for 25 meters into a space 2 meters wide. The passing of football was done once with each foot for each round. The accuracy of passing and change of pulse frequency after the first round, before the start of the second round and for 5 minute interval after finishing the second round were noted.

In the test constructed by Zelenka et. al. (1964), the subject starts from behind goal line and runs forward up to penalty area line and turns towards goal and jumps over a hurdle and moves under another hurdle and starts dribbling the football, which is placed at a distance from the hurdle and dribbles the ball between 7 gates made with flags along the goal line across and after reaching the other end of goal line shoots the ball into a target goal, which was constructed by fixing two flags and moves upward jumps over the first hurdle and then goes underneath the second hurdle and starts dribbling the football along the penalty area line between 7 gates and shoots the ball into the target goal which is constructed at a distance of 25 meters with two flags and runs turning towards the goal line to the finishing point. In one round of the test, the subject covered a distance of 123 meters. The test is to be carried out

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RESULT: The results have been presented in tables

Table-1: Mean Score and Standard Deviation of all physical test items of all subjects

LEVEL OF THE SUBJECT	TITLE OF THE TEST	MEAN	S.D.
University Male	3 Hops right leg	6.15	0.50
	3 Hops left leg	6.22	0.53
	60 meters sprint	6.7	0.16
	Zig-Zag run	15.83	0.92
	300 meters run	49.56	2.95
College Male	3 Hops right leg	6.04	0.55
	3 Hops left leg	5.99	0.49
	60 meters sprint	6.9	0.41
	Zig-Zag run	15.80	0.86
	300 meters run	50.10	3.39
College Female	3 Hops right leg	5.93	0.65
	3 Hops left leg	5.20	0.48
	60 meters sprint	7.1	0.23
	Zig-Zag run	16.28	0.93
	300 meters run	51.05	3.96
School Male	3 Hops right leg	5.97	0.63
	3 Hops left leg	5.86	0.54
	60 meters sprint	6.87	0.54
	Zig-Zag run	15.78	0.85
	300 meters run	50.15	3.48
All	3 Hops right leg	6.02	0.58
	3 Hops left leg	5.82	0.51
	60 meters sprint	6.89	0.34
	Zig-Zag run	15.92	0.89
	300 meters run	50.22	3.45

Table-2: Mean Score and Standard Deviation of all Football skill test items of all subjects

Level of the Subject	Title of the test	Performed	Mean	S.D.
University Male	Goal shooting	Number (Score)	6.37	2.67
		Time (in sec.)	20.19	1.55
	Kicking for distance	Right foot	41.68	5.98
		Left foot	33.50	11.16
	Ball juggling (in no.)		103.39	110.26
	Slalom Dribble (in sec.)		11.86	1.38
College Male	Goal shooting	Number (Score)	5.64	2.62
		Time (in sec.)	21.11	2.43
	Kicking for distance	Right foot	38.29	7.99
		Left foot	33.07	8.64
	Ball juggling (in no.)		79.05	79.47
	Slalom Dribble (in sec.)		12.10	1.12

College Female	Goal shooting	Number (Score)	4.64	1.64
		Time (in sec.)	21.4	2.6
	Kicking for distance	Right foot	36.66	7.25
		Left foot	30.75	9.02
	Ball juggling (in no.)		76.5	61.78
	Slalom Dribble (in sec.)		12.12	1.38
School Male	Goal shooting	Number (Score)	4.96	2.87
		Time (in sec.)	21.39	2.60
	Kicking for distance	Right foot	37.08	5.96
		Left foot	29.75	6.83
	Ball juggling (in no.)		86.31	86.22
	Slalom Dribble (in sec.)		11.89	1.39
All	Goal shooting	Number (Score)	5.41	2.44
		Time (in sec.)	21.02	2.29
	Kicking for distance	Right foot	38.43	6.79
		Left foot	31.77	8.91
	Ball juggling (in no.)		86.31	84.43
	Slalom Dribble (in sec.)		12.03	1.38

Table-3: Mean score and Standard deviation of specific functional fitness test developed by Zelenka et. al. of

Level of the Players	Number (N)	Mean	S.D.
University Level Male	17	39.89	1.64
College Level Male	20	40.96	2.12
College level Female	18	42.42	2.05
School Level Male	36	41.73	2.71
All Together	91	41.25	2.13

Table-4: Mean score and Standard deviation of modified specific functional fitness test of all subjects

Level of the players	Number (N)	Mean	S.D.
University Level Male	17	53.29	2.02
College Level Male	20	53.98	1.78
College level Female	18	57.33	3.21
School Level Male	36	55.48	2.02
All Together	91	55.02	2.26

Table-5: Significance differences of Mean scores between various groups

Sr.No	Groups compared	Value of ' t'	Remarks
1.	University male &college male	2.50	P<0.05
2.	University male &School male	3.37	P<0.05
3.	College male & School male	2.86	P<005

Table-6: Correlation coefficient between the performances in Zelenka test and modified specific fitness test of Subjects

Relationship between tests	Value o 'r'	Significance
Zelenka test & Modified specific fitness test	0.731	P<0.01

Discussion & Findings:

The purpose of the study was to determine the evaluation and modification of Specific Physical fitness test for Football players. It was observed that the performances of the subjects in the modified specific fitness test was significantly correlated with the performances of the subjects with the composite score arrived at for essential football skills and motor abilities of the subjects. The construct validity of the modified specific fitness test was established by analyzing the significance of the differences in mean scores among various experimental groups. . It is understood from the table-6, that the performances of the university level subjects in specific functional fitness test developed by zelenka et.al. and modified specific functional fitness test was significantly correlated (P<0.01).

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Effect of practice of Yogasanas and Pranayama on the (URTI) Upper Respiratory Tract Infection status post their first half marathon run among recreational young men runners

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Abstract: *Involving in physical exercise enhances the immune function of the individuals thereby making individuals more resistant to several diseases. Both general and specific immune functions are seen increased through regular physical exercise programs. But, there were certain negative impressions with respect to the high intensity sustained exercise programs like marathon running etc. Specially, the novice runners need to be more strategic in terms of their preparation for such programs of severe forms of aerobic exercise. Severe form of aerobic exercise like half marathon running might impose certain immunesuppression conditions leading to respiratory tract infections and other infections of lungs. There have been several ways and methods to neutralize this inflammatory and immunosuppressive effect of aerobic exercise like Probiotic diets and other methods. Upper Respiratory Tract Infections are more common among such runners who involve in high intensity sustained half marathon and marathon running due to temporary suppression of immune proteins of mucosal immunity. Regular training of yoga etc to counter the negative effects of high intensity sustained aerobic running. Methodology: Sixty men recreational runners in the age 25 to 30 were included for the study. Thirty were regular Yogasana and pranayama practioners and the other thirty did not practice any yoga before they participated in their first half marathon run of their life. The Upper Respiratory Tract Infection symptoms were measured through the WURSS-44 and the scores were analysed applying the Covariance statistical technique at 0.05 level of significance. Results: ANCOVA indicated that the groups differ significantly (p= 0.006 and obtained F = 8.03) with homogeneity of slopes showing no significant levels. Conclusion: Yoga practiced group of men runners better protected against the URTI symptoms post their first 10 k run activity when compared to the non yoga men group of the study.*

Key Words: *High intensity sustained exercise, Physical activity, Immunity, recreational, URTIs, aerobic running.*

Back ground for the study: Regular exercise would enhance the immune function of individuals by up-regulating the immune system function. Hence, exercise is considered as healthful and specially the regular involvement in aerobic form of exercises is beneficial for enhancement in terms of immunity and disease prevention capacity of individuals (Walsh NP, Gleeson M, Shephard RJ, Gleeson M,et.al. 2011). Even non communicable diseases like Diabetes Mellitus, Hypertention, certain types of cancers could also be effectively prevented through regular physical activity programs (Matthews CE, Ockene IS, Freedson PS, et.al. 2002). Enhanced immunity through exercise programs would make individuals more effective in terms of prevention of several infective diseases and also non communicable diseases too. As the immunity enhances, individuals tend to gain more preventive capacity

from the communicable diseases also. Exercise immunologists agree that the physical activity would enhance the immunity of individuals both mucosal and T cell mediated. There have been several contentious issues in this area, especially with respect to the intensity (Gleeson M, Williams C. 2013), duration of sustained exercise and its effects on the immunity and the inflammatory status of the individuals. Medium intensity aerobic exercise may be good for the individuals in terms of immunity, but very high intensity sustained long duration aerobic exercises like marathon running may be detrimental to the immunity levels of the individuals (Kakanis MW, Peake J, Brenu EW, et.al. 2010). Very high intensity sustained aerobic running could cause for the temporary suppression of cell mediated and also mucosal immunity making the athlete infection prone temporarily soon after the termination of such high intensity aerobic running like half marathon and marathon running. This may be due to imbalance in the pro and anti-inflammatory cytokines (Gleeson M, Bishop N, et.al. 2013) during such kind of stress condition, as the extreme physical stress could cause for the secretion of several cytokines and myokines and the interaction of these cytokines could be both promoting and reductive. Reduced T cell proliferation is also seen during high intensity long duration running causing reduced cell mediated immunity temporarily. Mucosal immunoglobulins were seen suppressed significantly during the high intensity exercise programs and this is seen even among the well trained individuals. Temporary loss in mucosal immunity due to reduction in the synthesis of salivary immunoglobulins could cause for the respiratory tract infections and sometimes these infections could be fatal to individuals. Bronchial airway inflammatory conditions during high intensity aerobic running (Couto M, Silva D, et.al. 2013) could lead to airway infection especiall the Upper Respiratory Tract infections (Bermon S. 2007). These infections could cause for disturbance in the training program and many a time they may cause severe loss of function in lungs (Ahmadinejad Z, Alijani N, et.al.2014). Hence, it is essential for indivduals to be vigilant about these exercise related problems before being involved in high intensity sustained aerobic activities like 10 K runs, half marathon and marathons etc. Though there may be variability with respect to these immune suppression and pro inflammatory status through the high intensity exercise among different individuals, it is always ideal to keep necessary safeguards like nutrition, lifestyle modifications etc before involving in such high stress activities (Moreira A, Delgado L, et.al. 2009). There are several nutrition programs which can prevent oxidative stress; inflammatory stress etc and likewise yoga may be useful in

enhancing the immune function, anti-inflammatory status of individuals if practiced regularly.

Hence, the present study was envisaged to know if regular yoga practice would be able to provide protection from the oxidative, pro-inflammatory and immune suppression effects of high intensity long duration running by recreational runners. Recreational runners may not train regularly like professional runners (Gleeson M.2006), who may be at a high risk of these immune suppression due to their low level of physical condition for such high intensity long duration activities and may be prone for frequent Upper Respiratory Tract Infections.

Methodology: Sixty recreational men runners who participated in recently concluded Hyderabad Airtel Marathon and Bangalore Airtel Marathon were contacted and included into the study. Thirty men who have been regularly practicing yogasanas and pranayama and thirty men runners who never practiced yogasanas and pranayama were included in two groups for the study. The age range of the runners was between 25 and 30 years. Most of them are recreational runners only and were participating in half marathon run for the first time in their life. Though the intensity of the run was not monitored for the sake of the study, the men runners tried to complete the half marathon course in a descent time and with good effort. The URTI symptoms of the runners of both the groups was collected through the Wisconsin Upper Respiratory Symptom Survey - 44 (WURSS-44), which was downloaded from the Website of the Department of Family Medicine and Community Health, of University of Wisconsin with proper permission and acknowledgement. The WURSS-44 was applied both before the start of the half marathon event and after one day of the conclusion of the event. The minimum is zero (for no symptom of the URTI) and maximum is 224 (complete symptoms of URTI in every factor analysed). Higher score indicates higher infection rate and vice versa. The pre run and post run scores of both the groups (Yoga group and non yoga group) were analysed with the help of Analysis of Covariance (ANCOVA) with proper test of homogeneity of slopes. Descriptive mean analysis was also done to explain the final results of the study.

Results of the study: Table I indicates that the post run means for both yoga group (35.86) and non Yoga groups (43.64) increased, signifying the effect of the half marathon on the URTI status runners of both groups. Analysis of Covariance as depicted in table II indicates that both groups significantly differ in their post run URTI score when compared to their respective pre run URTI scores (at P = 0.0005 and F = 26.21). Test for homogeneity of

regression (table III) indicates that there was no significant difference (P= 0.12 and F= 1.03) among the groups and they were found as non heterogeneous and the statistics was proper, hence the results of the study is significant. The results of the study are also depicted in Graph I for easier interpretation of the results.

Table I

Pre-run, Post-run and Adjusted Post-run means for URTI symptom score

Groups/Means	Pre-run	Post-run	Adjusted Post-run
Yoga group	29.43	35.86	36.09
Non Yoga group	28.81	43.64	42.95

Table II

Analysis of Co-variance for URTI symptom score

Source	SS	df	MS	F	P
Adjusted means	1391.22	1	1391.22	26.21	0.00005
Adjusted error	3025.56	57	53.08		
Adjusted total	4416.78	58			

Table III

Test for Homogeneity of regression

Source	SS	df	MS	F	P
Between regressions	43.09	1	43.09	1.03	0.12144
Remainder	2343.04	56	41.84		
Adjusted error	2386.13	57			

Graph I

Discussion on results: The results indicate that the Yoga group was able to resist the URTI symptoms better when compared to the non yoga group after their first half marathon run of their life. Yoga seems to be protective in terms of mucosal immunity especially in terms of providing resistance to the Upper Respiratory Tract Infections of the runners post their high intensity sustained aerobic long distance activities like high intensity sustained aerobic exercise like half marathon run. Yoga seems an effective tool in terms of providing anti-inflammatory capacity especially with respect to bronchial mucosal inflammations. Other issues like the efficacy of yoga as anti-oxidative needs to be studied further.

Conclusion from the study: Men who have been practicing Yogasanas and pranayama regularly experienced better protection from Upper Reparatory Tract Infection symptoms when compared to men recreational runners who had not practiced yogasanas and pranayama regularly, post their first half marathon running activity.

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Match and Game Performance Structure Variables in Elite and Youth International Badminton Players

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Abstract:

The aim of this study was to investigate the differences in the game structure between the Elite Level (EL) and Youth International under 19 years of age (U-19) International badminton players. A total of 14 matches including semi-finals and finals of International tournaments were selected for the analysis. The game structure variables in this study included match duration, game duration, rallies per game, shots per rally, rally duration, rest time between rallies, ball in play (s), ball in play (%) and work to rest ratio. Independent Sample t-test was used for the comparison of all variables between the Elite Level and Youth International Level categories. Statistically significant differences were observed between the categories in match duration, game duration, shots per rally, ball in play (s), rally duration and rest time between the rallies ($p<0.05$). The research outcome and obtained information can help improving technical and tactical skills as well as the match outcome in badminton players of both Junior International and Elite levels. It may as well effectively assist prospective youth in reaching the top International standards.

Keywords: badminton; elite players; youth internationals; match analysis.

Introduction

Research and scientific analysis of the performance outcome in racket sports have been increased in the latest decades. This is largely due to racket sports becoming more commercialized with many more people starting to play and watch the racket sports competitions. Hence among the purposes of the performance analysis related research, one is to help improving the players' skills and performance efficiency during the match. Eventually, the game becomes more interesting and attracts more people to watch it. Notational analysis is an objective way of feedback in which performance is recorded so that the key elements of it can be analyzed in a valid and consistent manner (Hughes and Franks, 2008). Hughes (1998) had defined the application of notation analysis into 5 different areas which are tactical evaluation, technical evaluation, study of movement, development of a database and modelling and for the educational use with both coaches and players. Tactical evaluation, technical evaluation and analysis of movement were within the main focus of this study. Apart from the aforesaid areas, notational analysis links to the physical fitness domain opening up an option of improving the game essential physical fitness structure and variables

in order to improve the performance outcome (Krasilshchikov, 2014). Analysis of the research available on the matter however reveals that performance analysis is typically targeting more of the elite players (Leuciuc, 2010), whereas research involving their upcoming junior counterparts is very limited (Loh & Krasilshchikov, 2015; Clemente et al., 2012). Interestingly though, in the history of BWF World Junior Championship men singles event, only 3 out of 15 players eventually managed to win the BWF World Championship men singles. Lin Dan, one of the best badminton players in the men singles event has never won the World Junior Championship but had managed to win 5 times in BWF World Championship men singles. This shows that the game structure in elite level and junior level might have some important differences. Therefore, notational analysis is important to apply to the sport of badminton at various levels of performance. With the results from the notational analysis, and notational analysis related research, coaches can help the players to progress smoothly from junior category to the open category of the game. The main objective of the study was to determine and quantify the game structure of men's single badminton players in Elite Level (EL) and Youth under 19 years of age (U-19) International categories.

Materials and methods

Participants Video recordings of the matches in BWF International events were collected throughout the year 2014 from the video library of the Performance Analysis Unit, National Sports Institute of Malaysia. Only the matches from semi-finals and finals were chosen for further analysis because the level of playing in the closing stage was assumed similar. Video recordings of the total of 14 matches were collected with total 34 games eventually analysed. The games were inclusive of Elite Level and Youth International level players. The study was delimited to only male badminton players. The matches were analyzed post-event using video recordings. This was due to the speed of live match play being too fast to gather all relevant details. The analyses were performed in slow motion, at half speed by the researcher (a badminton player himself) and an experienced full-time badminton coach of a National standard. All the subjects were aware of being video recorded and familiar to being observed; hence no written consent from the subjects was necessary.

Procedure Analyses of all the games were done using Elite Sport Analysis-FOCUS-X2 PRO software in the postmatch mode. The software allows the users to view the video and also record the "events"(actions) that they are interested in by using the ‘Category Set’ facility in the software. The researcher viewed video of a game performance and then

recorded the actions using the 'Category Set' that the researcher himself had created. After that, the data of events (actions) was extracted from the matrix and exported to spreadsheet in Microsoft Excel. It was then followed by the calculation of the game structure variables for each game and match. The assistance of a full time state level badminton coach was utilised during performance analysis to ensure the validity and accuracy of the analysis.

Game structure variables Nine game structure variables were selected for this study including match duration, game duration, rallies per game, shots per rally, rally duration, rest time between rallies, ball in play (s), ball in play (%) and work to rest ratio. Since one game represents the enclosed unit of the play and is not related to other games in the match neither by duration nor by results (Vuckovic, Dezman, Pers, & Kovacic, 2005), all variables were studied on the game level except match duration. Hence, game duration, rallies per game, shots per rally, rally duration, rest time between rallies, ball in play (s), ball in play (%), and work to rest ratio were game derived variables (per game data/collected from each game), whereas match duration was match related variable (per match data/collected from each match).

Reliability A match was randomly selected from among matches available for analysis by a full-time badminton coach. The video was viewed twice throughout a two month period by the coach and the researcher who collected the whole data of the matches. Krippendorff's alpha (α) was calculated to assess inter- and intraoperator reliability (α can range between - 1 and 1, where 1 indicates perfect agreement). Alpha was 0.93 on intra-operator reliability, and 0.85 on inter-operator reliability. Variables with reliabilities above α = .80 can be trusted for further analysis. Statistical Analysis Statistical Package for the Social Sciences (SPSS) version 21.0 software was used to analyse the data collected in this study. The results on the variables for each match and game were exported from spreadsheets in Microsoft Excel to SPSS for further analysis. Descriptive statistics were reported in the mean and standard deviation for each variable for Elite Level and U-19 Level respectively. Independent Sample t-test was used for the comparison of variables between two categories to determine if there were any significant differences between EL and U-19 Level. The level of significance at $p<0.05$ was used for all statistical analyses.

Results

A total of 20 games out of 8 matches in EL category were analysed, whereas in the U-19 level, a total of 14 games out of 6 matches were analysed. According to Kim (2013), the z- scores of skewness or kurtosis larger than 1.96 in relatively small sample sizes (n<50), the null hypothesis of normality is rejected. Since the z-score of skewness or kurtosis for most game and match variables in current research were within 1.96, therefore null hypothesis of normality has failed to be rejected. There was the required homogeneity of variance as assessed by Levene's Test for equality of variances. Descriptive statistics along with the t-Test comparisons of the game and match structure variables for both groups are presented in Table 1.

Table 1 Comparative statistics of the variables in EL and U-19 International badminton players

	EL		U-19		Mean difference		
Variables	M	SD	M	SD	[95% CI]	t	p
Game							
Game duration (s)	1449.2	434.6	1066.3	152.0	382.9 [166.01,599.82]	3.63	.001***
Rallies per game	35.1	5.1	37.7	3.6	2.56 [5.82,0.69]	1.60	.119
Shots per rally	12.3	8.6	8.2	5.9	4.09 [3.28,4.90]	9.87	.001***
Ball in play (s)	419.9	101.9	306.7	62.72	113.16 [55.52,170.85]	4.00	.001***
Ball in play (%)	29.5	3.2	29.1	6.29	0.44 [-3.40,4.29]	0.24	.811
Rally duration (s)	11.9	8.04	8.1	5.3	3.79 [3.04,4.54]	9.91	.001***
Rest between rallies (s)	1029.4	343.2	759.6	144.6	269.88 [93.67,446.09]	3.14	.004**
Work to rest ratio	0.4	0.07	0.4	0.13	0.02 [-0.08,0.08]	0.04	.97
Match							
Match duration	3263.0	943.6	2488.0	705.7	1135.00 [131.78,2138.22]	2.46	.03*

Note. * p < .05, ** p < .01, *** p < .001

The results presented in Table 1 show the mean and standard deviations for tested variables in EL and U-19 categories respectively. There were significant differences between the means of game duration (s), number of shots per rally, ball in play (s), rally duration, and the rest time between rallies between EL and U-19 (p<.05). Match duration was significantly different between the two categories of players as well. There was a statistically significant

difference in game duration between EL and U-19 categories (t(25.10)=3.63, p=0.001) with mean difference between the categories at 382.91s, meaning eventually that Elite players displayed longer game duration as compared to U-19 category. A statistically significant difference was discovered in number of shots per rally between EL and U-19 categories (t(1217.14)=9.87, p<0.001) with the mean difference between the categories equalling 4.09 and being higher with Elite category. There was a statistically significant difference in ball in play (s) between EL and U-19 categories (t(31.60)=4.00, p<0.001) with the mean difference between the categories equalling 113.16s in favour of Elite category. There was a statistically significant difference between rally duration (s) between EL and U-19 categories (t(1212.38)=9.91, p<0.001) with the mean difference between the categories at 3.79s and an Elite Level category having played longer rallies as compared to Youth International players. A statistically significant difference was observed in the rest time between the rallies between EL and U-19 categories (t(27.296)=3.14, p=0.004) with the mean difference between the categories at 269.88s and Elite players obviously taking longer rest as compared to Youth Internationals. Match duration has been significantly different between EL and U-19 categories (t(12)=2.46, p=0.03) with the mean difference between the categories equalling 1135.00s and Elite players obviously being able to play longer competition matches as compared to Youth Internationals.

Discussion

According to Lees (2003), duration of 20 to 90 minutes is common across all competitive matches of racket sports and is dependent on the scoring system of the game. Due to the changes in the scoring system in 2006, many researches have been assessing the differences between the old and new scoring system. Apparently, the new scoring system had shortened the duration of the badminton match with the average match in 21 point system being played in 17.27±2.67 min, whereas with the old 15 point system it was 24.06±2.38 min (Chee, Chen & Asok, 2008).

Compared with other racket sport, badminton (Alcock & Cable, 2009) was considered having longer game duration (12 min) compared to squash (Girard, Vhevalier, Habrard, Sciberrsas, Hot & Millet, 2007) with approximately 8 min of reported mean game timing. Girard et al. (2007) stated that game duration within a squash match was from 5 to 15 min according to the official results from PSA World Championship 2004 in Doha, Qatar. Chee and co-researchers (2008) found out that game duration of current 21 point scoring

system was lower than the old 15 point system for badminton due to the scoring system change from service-score system to rally-score system. Elite players had significantly longer game duration compared with Youth International level players. This may be due to the fact that when higher quality of players played against each other, the duration of the game could be prolonged (Katsikadelis, Plilianidis & Vasilogambrou, 2007). Therefore, it can be suggested that game duration is longer when high quality and skilled players play against each other. However, longer game duration might be caused by other factors, not merely by the prolonged playing time. Faude et al. (2007) reported the figure of 5.1±3.9 shots per rally among international ranked badminton players while Chee et al. (2008) reported 4.74±0.78 shots per rally in their studies in new scoring system matches. Cabello and Gonzalez (2003) in their study under the old scoring system reported 6.06±1.08 shots per rally. Number of shots per rally does not seem significantly different if compared between other racket sports: tennis was reported as having 2.5 to 3 shots per rally (Fernández-Fernández et al., 2009) while table tennis was reported as having 5.11±0.57 shots per rally (Malagoli-Lanzoni, Di Michelle & Merni, 2013). There was a significant difference in number shots per rally when comparing the result within the present study (12.3±8.6 and 8.2±5.9 for EL and U-19 respectively), which is supporting the results from the past studies. Elite players obviously had more shots per rally compared to U-19 players. It can be suggested that it is difficult to win a point within a few shots in high standard level competition. Higher quality players play more shots per rally and play less rallies per game (not statistically significant though) compared with lower level players. At highest international level, the point is won gradually by achieving high number of shots to gather the advantage, which can be exploited in the attack to win the rally (Vuckovic et al., 2005). This resulted in longer rally duration and greater number of shots per rally. In the present study, the mean real playing time was 6.98min (±1.71) for EL and 5.11min (±1.04) for U19 level. There is a sizeable difference between the present study and the past studies and it may be due to the change in the scoring system. Katsikadelis and co-researchers (2007) stated that longer duration of rallies increase the total real playing time. This can explain the real playing time decreasing after the introduction of the new scoring system. Chee and co-researchers (2008) found out that the effective playing time for badminton was 32.22% (±3.34). In this study, the ball in play (%) for EL was 29.51% (±3.24), while for the U-19 Level it was 29.08% (±6.29) which is similar if compared to the past studies results. In regard to squash, Girard et al. (2007) reported that 69.7% (±4.7) of the game duration was playing time. This figure confirms that squash players need to have higher aerobic endurance level as compared to other racket sports players.

According to Lees (2003), duration of the rally of 3 to 10s is more common for all racket sports. Faude and co-researchers (2007) stated 5.5s (±4.0) as rally duration in their study using internationally ranked badminton players. The present study has shown that the rally duration for the Elite players was 11.92s (±8.04) which does not line-up with the commonly reported range; while the U-19 players' rally length of 8.13s (±5.35) lines up within the common range previously reported. Lees (2003) stated that due to the intensity of effort being the greatest during the rally, the length of the rally is important in the sense of the utilization of the energy system. Sharp (1998) had classified the of rallies length in squash into three categories: less than 5s, the ones lasting 6-20s and those lasting more than 20s. This suggested time classification relates to anaerobic and aerobic energy sources in which the player relies on the energy to be delivered and converted at higher rates when competing in the higher standard competitions. Hughes (1995) stated that elite players were able to play longer rallies at their level with points won through performing high number of shots at highest international level match plays (Vuckovic et al.,2005). Thus, elite players are demonstrating longer rally durations. Pradas and co-researchers (2011) stated that game intensity could be elevated by the increase in the ball in play actions. Consequently, due to the increase of the shots number, more time is needed for recovery. Elite players play more shots as compared with Youth International players, hence Elite players may need longer resting time as compared to Youth International players.

Conclusions

As a summary for this study, there were differences in the game structure between World Elite level and Youth International badminton players. EL players had longer match duration, game duration, more shots per rally, rally duration, ball in play in seconds and rest time between rallies as compared to U-19 Internationals. The study confirms that badminton is a mixed anaerobic-aerobic sport. It requires the players to use their maximum power during the rally (smashing the shuttlecock) meanwhile it also requires the player to have a good aerobic capacity as the match duration averages at more than an hour. Results of the study can help coaches and sport scientists to plan training programs to meet the demands of the match play in top level badminton. Hence, training plans and workouts can be modified in order to help the players to fulfil the demand of the sport and improve the performance outcome in every match played. On the other hand, the results of the study reiterate that progression of youth badminton players to the top level in their career depends greatly on improving the game structure variables which play critical role in effective competing. In this

present study, the match duration, game duration and number of shots per rally for Elite and Youth Internationals proved significantly different. This induces Elite Level players to have higher aerobic capacity during the game in order to play at their best skill. Training plans might need to be modified to improve the fitness level of U-19 players in order to meet the Elite level games' requirements and eventually assist them to progress to the Elite Level.

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INFLUENCE OF BACKGROUND MUSIC ON PHYSICAL PERFORMANCE

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Abstract: *Background and Aim: We live in a time when technology has brought us closer to music than ever before, enshrining its role in our emotional and social lives. The proposed benefits of music in exercise, sport and other physical activity contexts (e.g., physiotherapy rehabilitation) have intrigued researchers for over 40 years. Yet there are still some inconsistencies remaining. If no strict music selection protocol is applied, it remains uncertain if and to what extent background music influences physical performance as well as physiological traits like the heart rate and the rating of perceived exertion. The aim of this study is to illuminate these inconsistencies. Data Collection and Method: Consenting participants exercised on a cycleergometer following an incremental exercise protocol designed to alter the workload according to time. Heart rate and velocity were recorded every second. At the end of each step, just before workload increment, participants were asked to indicate their perception of effort by reporting a number from the Borg's Rating of Perceived Exertion Scale. The exercise testing was carried out in two different sessions, with and without background music. Conclusion: Background music has positive influences on both physical performance and physical capacities. Discussion: The results of this study provide further support for the use of background music during physical activity sessions. For people who enjoy their chosen physical activity because it is a stress outlet, a social outgoing, a time for oneself the exercise is often enough but for others listening to music is a simple tool to keep oneself engaged in the activity and motivated to continue.*

Keywords: Background music, exercising

Introduction

We live in a time when technology has brought us closer to music than ever before, enshrining its role in our emotional and social lives (DeNora & Bergh). The proposed benefits of music in exercise, sport and other physical activity contexts (e.g., physiotherapy rehabilitation) have intrigued researchers for over 40 years (Costas I. Karageorghis & David-Lee Priest). According to the available scientific evidence, music captures attention, raises spirits, triggers a range of emotions, alters or regulates mood, evokes memories, increases work output, heightens arousal, induces states of higher functioning, reduces inhibitions and encourages rhythmic movement (Terry & Karageroghis). Yet there are still some inconsistencies remaining. If no strict music selection protocol is applied, it remains uncertain if and to what extent background music influences physical activity traits like

duration and pace as well as physiological traits like the heart rate and the rating of perceived exertion. The aim of this study is to illuminate these inconsistencies

Methodology:

The study was carried out in a laboratory setting at the Institute for Sport Research part of the National Institute of Sports. Participant selection was carried out among students of this university. The 60 selected participants were male, aged from 19 to 27. All participants in this study reported previous use of music during exercising.

Design and Data Collection: This is a prospective controlled study. The exercise testing that is described below is carried out in two different sessions i.e. with and without background music, by a single group of participants. Participants in this study exercised on a cycleergometer following an incremental exercise protocol designed to alter the workload according to time. The programmed sequence of workload began with 100 Watt and increased by 25 Watt every 3 minutes, up to 175 Watt. The applied exercise protocol automatically terminated based on either the passage of 12 minutes or in exceeding the heart rate alarm value, which was preset to 220 – age. Heart rate and velocity were recorded every second. At the ending of each step, just before workload increment, participants were asked to indicate their perception of effort by reporting a number from Borg Scale for Rating Perceived Exertion. The second session with background music took place, on average 7 days after the first one without background music. Music for the second session was self-selected from personal favorite playlists or by zapping through radio stations. Music was played on a CD player and it was introduced at the same moment as the participants began pedaling.

Methodological limitations: 1. We applied no music selection protocol on this study. Participants were responsible for music selection, music volume and music change in relation to the task. 2. The results of this study are not context – dependent because self – selected music was used as background 3. Participants showed signs of distraction while changing music in relation to the task. This might have influenced their overall performance.

Data Analysis: Data were processed with the SPSS statistical package using the t-Test: Two-Sample Assuming Unequal Variances. Four general themes (time duration, speed, rating of perceived exertion and heart rate) were found to be descriptive of the exercise

testing with and without background music. In what follows, gathered data is described in detail along with the variables derived from the t-Test.

Results:

Based on gathered data it resulted that relative to the control condition (exercise testing without background music), music has positive effects on physical performance by increasing time spent exercising and mean exercise speed as well as on physical capacities at the low and moderate exercise intensities. We didn't observe any statistically significant improvements in heart rate values and reported ratings of perceived exertion at high exercise intensities. The interpretation of results is based on the estimated mean difference between data obtained from exercising with background music and without background music. It resulted that while exercising with background music, the average RPE and heart rate values were reduced with respectively 10% and 1,9% compared to exercising without background music. Due to these effects a better physical performance was attained. Exercising with background music was associated with a 5,6% increase in time spent exercising and a 2,4% increase in average speed of pedaling. It should be noted that we didn't apply any music selection protocol while exercising. Participants were responsible for music choices and settings.

Theme 1: Time duration

Table 1.1: Time Duration of both Sessions of the Exercise Testing

Time duration	Without Background Music (absolute number)	With Background Music (absolute number)
$t \leq 7$ min	20	11
7 min $< t \leq 8$ min	2	1
8 min $< t \leq 9$ min	8	7
9 min $< t \leq 10$ min	4	10
10 min $< t \leq 11$ min	1	8
11 min $< t \leq 12$ min	25	23

Table 1.2: t-Test for Time Duration Data

	Without Background Music	With Background Music
Mean	96.5	102
Variance	12177.5	8291.6
Hypothesized Mean Difference	0	
df	10	
t Stat	-0.09416	
P(T<=t) one-tail	0.463419	
t Critical one-tail	1.812461	
P(T<=t) two-tail	0.926838	
t Critical two-tail	2.228139	

Estimated Mean Difference = (102 – 96.5) / 96.5 = 0.056

Theme 2: Pacing

Table 2.1: Pacing of both Sessions of the Exercise Testing

Speed	Without Background Music (absolute number)	With Background Music (absolute number)
≥ 90 rpm	4	5
80 – 89 rpm	18	17
70 – 79 rpm	21	27
60 – 69 rpm	10	8
50 – 59 rpm	7	3

Table 2.2:t-Test for Speed Data

	Without Background Music	With Background Music
Mean	904	926
Variance	362642.5	606130
Hypothesized Mean Difference	0	
Df	8	
t Stat	-0.04998	
P(T<=t) one-tail	0.480682	
t Critical one-tail	1.859548	
P(T<=t) two-tail	0.961364	
t Critical two-tail	2.306004	

Estimated Mean Difference = (926 – 904) / 904 = 0.024

Theme 3: Rating of Perceived Exertion (RPE)

Table 3.1: Rating of Perceived Exertion Data from both Sessions of the Exercise Testing

	RPE = 6 – 10		RPE =11 - 14		RPE = 15 - 17		RPE = 18 - 20	
Workload	Without Music (abs. nr.)	With music (abs. nr.)	Without music (abs. nr.)	With music (abs. nr.)	Without music (abs. nr.)	With music (abs. nr.)	Without music (abs. nr.)	With music (abs. nr.)
100 Watt	48	51	12	9	0	0	0	0
125 Watt	30	32	14	16	6	8	0	0
150 Watt	0	0	8	5	14	35	18	19
175 Watt	0	0	0	0	0	0	30	41

Discussion

Although the number of studies investigating the effects of music on physical activity has swelled considerably, we decided to take such an initiative because we felt that scientific research studies by applying strict music selection protocols might not show the real influence of music on physical activity in everyday life. That is why we chose to apply no music selection protocol in this study. Participants were responsible for music selection, music volume and music change in relation to the task. There were no rigid criteria for being part of this study. The only required criterion for the participants was previous use of music during exercising. Physiological arousal was measured by heart rate. The psychophysical effects of music, which concern the subjective perception of physical effort and fatigue, were assessed by the Borg's Ratings of Perceived Exertion (RPE) scale. Physical performance was assessed based on changes of pace and duration of physical activity in sessions with and without background music. We chose to play music on a CD player because participants in the study reported it, as the most common used tool to listen to music while exercising. Participants were asked to make their music selections as they did while exercising. They chose both personal favorite playlists and zapping through radio stations. After completing the session with background music, participants were interviewed regarding their music selections. They reported shifting to faster music when greater effort to complete the task was required. This finding correlates with the assertion that the more arousal a situation requires, the more preference will be afforded to stimulative music (Rendi & Szabo). Anyway, although music may change how one interprets or responds to sensations of high exertion, it does not have the power to alter the perceptions of fatigue when exercising at a very high intensity (Hardy & Rejeski). As a matter of fact from our data analysis it resulted that relative to the reported values of RPE during the session without background music, music reduced RPE only at the low and moderate exercise intensities but not at the high ones. According to Karageorghis, it is not possible to distract exercisers from the fatigue induced by high-intensity exercise but music can change their perception of this fatigue toward a more positive evaluation. In fact the average RPE values reported during exercising with background music were approximately 10% lower than those reported during the control session, without background music. We observed more moderate improvements in the average heart rate values compared to average RPE values because exercising to music can't modify the acknowledged predominance of physiological as opposed to psychological cues at higher intensities (Pujol & Langenfeld). Music selections among participants showed great variability regarding rhythm, melody, pitch, harmony and interval. According to John

Sloboda, a pre-eminent music psychologist, music's influence is entirely contingent upon the listening context and the experiences and preferences of the listener. A personal association can occur when a piece of music reminds an exerciser about an aspect of their own lives that is emotionally significant (Priest & Karageorghis). Based on the above mentioned findings, we recommend self-selected music to promote increased exercise adherence. For people who enjoy their chosen physical activity because it is a stress outlet, a social outgoing, a time for oneself the exercise is often enough but for others listening to self-selected music is a simple tool to keep oneself engaged in the activity and motivated to continue.

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HORIZONS AND TRENDS OF PEDAGOGY ON LEADERSHIP QUALITIES OF KABADDI COACHES AMONG THE PHYSICAL DIRECTORS IN TELANGANA STATE.

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INTRODUCTION

Traditional careers in Physical Education have focused on teaching and coaching in schools, colleges and universities. KABADDI is absolutely an Indian originated game. The Game spread gradually all over the country. KABADDI was included in Indian Olympic Games , which were organised in Calcutta in1938.KABADDI Federation of India was formed in 1952.This Federation has organised several coaching camps for kabaddi in India. In1962 kabaddi was included in All India Schools Games competitions. National Institute of Sports Patiala started Orientation courses in kabaddi for a duration of six weeks in 1971. In Physical Education abide kabaddi coaching can be challenging, exciting and rewarding. Physical Educators and coaches performance of kabaddi coaching is no exception and must keep itself updated as per the modern times. Physical Education is not only concerned with the Physical out comes that accuse participation of game kabaddi in country side. Horizons and trends of pedagogy on leadership qualities of kabaddi coaches must envision their Practices not merely as Product tradition but as a consequence of scientific research to give them insight in to the new technique, novel methods to be molded in various organizations like school, college and university. The contribution of this research study has been very significant as amateur coaches, semi professional coaches, professional coaches and scientific professional coaches have achieved great name and fame in the academic growth and development in Telangana state.

PURPOSE OF THE STUDY:

The Present research investigation fulfill the award of Doctor of Philosophy in Kakatiya university focuses the following research Problem "HORIZONS AND TRENDS OF PEDAGOGY ON LEADERSHIP QUALITIES OF KABADDI COACHES AMONG THE PHYSICAL DIRECTORS IN TELANGANA STATE." The Purpose of the study was to find out the self Assessment of leadership qualities and specific standards identification of indicators of kabaddi coach role among physical educationists in Telangana state. Leadership Qualities/ Abilities of a kabaddi coach as well as among the Physical Directors to develop a competing values to help the primary roles of coaches that of innovator and broker, internal process model endows monitor and coordinator, the human relation model the mentor and facilitator; the rational goal model, producer and director in Telangana State .Why study Research of Kabaddi technicalities of match and Role of coach qualities and capacities to be required precise knowledge of play rules, standardization methods to best survival in varying tournaments. The purpose of the present study was demanding as a professional playing

growing fast and spreading the trends to determine future models in T.S. How much leadership role of motor qualities and techniques of Kabaddi coach /referee in Telangana state..There may be significant leadership qualities among Kabaddi coach in relation to their primary role to develop innovator and broker competing values, internal process model endows monitor and co-ordinator, the human relation model the mentor and facilitator; the rational goal model producer and director qualities in T.S. How do Kabaddi coaches develops his/her precise knowledge for game rules learning process by accepting assignment / schedules of competitions at various level Kabaddi championship to promote and upgrade for suitable interesting physical education curriculum in school/ college/ university. Playing is the natural activity of children. There is no exaggeration in saying that education cannot be imagined without the play element in it. Children learn a lot while coaching others playing and while playing themselves, there is a a great need for systematic coaching in Favourite game kabaddi in school / college/ university curriculum of subject in TELANGANA STATE. Coaching, now a days, has become an important skill, the importance of coaching has increased manifold with basic principles of coaching. Scientific way, Individual Differences, proper kabaddi literature capabilities, based on standard , aim, close and all round observation, new and experienced players, congenial Environment, Generalization of skills, known to un known, simple to complex , defects of players Removed immediately, conversant their progress, Less Energy and good result. Vocational Qualities of kabaddi Coaches does not learn more from any other source than from his experience. Complete knowledge of the Game of kabaddi, Re-orientation of knowledge, ability to understand, psychological reaction, Efficient Training, preparation, Imagination, Express, observation and Analysis and evaluate the capacities of the camp players.

OBJECTIVES OF THE STUDY

Leadership is the ability to build up confidence and zeal among players and to create an urge in them to be led. Leadership is a personal quality, process of influence to strive willingly to attain objectives of the profession/ group. And neither bossism nor synonymous with management. Why study Research of Kabaddi technicalities of match and Role of coach qualities and capacities to be required precise knowledge of play rules, standardization methods to best survival in varying tournaments. The purpose of the present study was demanding as a professional playing growing fast and spreading the trends to determine future models in T.S. Assess How much leadership role of motor qualities and techniques of Kabaddicoach in Telangana state. There may be significant leadership qualities among Kabaddi coach in relation to their primary role to develop innovator and broker competing values, internal process model endows monitor and co-ordinator, the human relation model the mentor and facilitator; the rational goal model producer and director qualities in T.S. How do Kabaddi coaches develops his/her precise knowledge for game rules learning process by accepting assignment / schedules at various level Kabaddi championship to promote and upgrade for suitable interesting physical education curriculum in school/ college/ university in T.S.TO BE STUDIED KABADDI COMPETITIONS to have access to information that could lead to Positive changes, exchanging the information and improvements affecting a great number of current and future participants and closely monitor the professional abilities and psychological standards growth and development of elite

KABADDI coaches as well as in the state. TO BE ENHANCED the training and instruction methods, schedules, strategies, Technologies ,social -support, positive feedback, morality and ethics on motor creativity of different age group of KABADDI competitions and formulation of Academies/ Institutionalization as democratic behaviour in TELANGANA state. TO BE ESTABLISHED aspirations and achievements with traditional journalism like manual / pedagogical process of collaboration of KABADDI Excellence and crucial Physical education curriculum for coach and referees including in the UGDPEd / B.P.Ed / M.P.Ed training courses and in SPORTS AUTHORITY OF TELANGANA in the TELANGANA state. TO BE REQUIRED to conduct the high degree of skill clinics, refresher courses, symposium for improvement of precise knowledge, psychomotor qualities and techniques like Innovator, Broker, co-ordinator, monitor goal setter/ director, facilitator / mentor leadership roles of KABADDI coaches for greater interaction among the physical education personnel in TELANGANA state .TO BE EVALUTED the coaches roles of abilities are selected variables degree of charisma and credibility, trust and confidence in the relationship of the coach / referee among the KABADDI match officials and also continuing deeper probe of my dissertation thesis submitted in master of physical education ,osmania university Hyderabad in TELANGANA state. To BE EMPHASIS ASSESSED the characteristics of KABADDI coaches are keeps calm and impersonal attitude, general items like be consistent, be approachable, be prepared, be focussed, be better with professional plans, fair citizenship, national integration, values , drug , abuse , cruelty and other untoward activities and life skills of KABADDI technical personal Government and non Government(club/ franchise) organizations in TELANGANA state. TO BE PROVIDED the ample *opportunities for the coaches to develop and* learn through federation or association membership and technical board works from school level to university and must cater special awards to coaches in different level like MANDAL / ZONAL/ constituency/ district/ state/ national open/ closed league cum knockout tournaments in the TELANGANA state. To be constructed the Board of Physical Education coaches and TECHNICAL OFFICERS under the Olympic association supervision must be collaborate the budget / functions of the management / organization of standard competitions in academic calendar of school/college/ youth formal and non formal i,e Rural/ amateur tournaments in Telangana state.

HYPOTHESIS:

TO Study the teaching and coaching learning material of kabaddi training and environment provided the Government in all management school/ college/ universities in TELANGANA STATE.

TO Making kabaddi is an integral part of schooling both in content and practice

TO Providing SPORTS SCHEMES more space for kabaddi is one of the optional game as evaluation subject with grading performance like other subjects in new policy in sports curriculum in TELANGANA STATE.

TO Find Out kabaddi coaching the specific standards leadership qualities among physical educationists working in different managements school/college/ universities in

TELANGANA STATE. In-service coaches is a key that a physical Education degree should be mandatory for certification as a qualified coach.

IS There any significant difference pedagogy on leadership qualities and specific performance standards/ teacher identification indicators of kabaddi coaches of physical educationists and NSNIS coaches in T.S. To provide for exchange of experience and successful practices and for development materials, standards and other aids for the progress of camping.

TO Study Comparative development of kabaddi coach leadership qualities and specific performance standards between physical educationists and sports authority of telangana (SAT) Coaches in T.S.

TO SIGNIFICANT on inclusive physical education must collaborated SAI/SAT and IOC sports training pedagogy and REQUIRED the NSNIS standard coaching course in all universities with code of conduct to the teacher/ coaches and educational administrators in TELANGANA STATE.

TO REVISION of school curriculum at all levels must have sound policies under the umbrella of administrative heads of physical education/ sports institutes AND SPORTS COUNCILS.

To be constructed the Board of Physical Education coaches and TECHNICAL OFFICERS under the Olympic association and higher education supervision. All universities/ federations recognition given to distinguished coaches awards on August 29th sports day in T.S.

DELIMITATIONS:

Leadership qualities on this research study which lays emphasis on training, techniques and tactics of kabaddi coaches and physical Educationists the latest trends of innovations for the benefit of upcoming cross route players and comprehensive literature for every situation during training and competition. Curricula formulation of physical education syllabus for school/college/ university kabaddi sport/ game as a discipline and profession is no different. The worth of research in physical education lies in quality and not in quantity. Physical educationists be the masters of their own discipline to be assessment the Sports management, teaching, coaching techniques i.e coaching camps for formal curriculum construction and educational values and sportsmanship of kabaddi game in telangana state. This study delimited to selected among the In-service physical education teachers, physical directors and coaches who have participated in various level school Games Federation District, state, National level KABADDI competitions as well As KABADDI ASSOCIATION sub-junior, junior and senior kabaddi tournaments and also universities, Invitation kabaddi meets in Telangana Districts. The Researcher has been deputed all management kabaddi competitions survey questionnaire of literature is an ingredient of research studies may be designed to extend to kabaddi coaches population in schools, colleges, universities and state organizational set up of kabaddi bodies, boards, associations.

LIMITATIONS

This study was limited horizons and trends of kabaddi coaches and physical educationists pedagogy on self Assessment by kabaddi population subjects pet/ pd and the other for assessment of coaches by kabaddi players six leadership role qualities and seven teacher specific standards of performance through Email survey as well as group interviews and observation of the sample subjects in various kabaddi competitions participant coaches and players role is required to revise organizational goals and restructure behaviour. Research study Universe is kabaddi coach and population is school/ college/ university working in-service PET/PD/ KABADDI COACHES who qualified NSNIS/ AKFI existing capacities must be adequate characteristics of kabaddi through knowledge and representatives of coach/ manager and participants in district / state/ national championship units of the universe and that of the sample i.e restricted systematic random sampling method by following a periodicity trend. ZONAL KABADDI GAMES (TRIBAL) held at kinnerasani, ITDA PALONCHAon13&14 NOVEMBER 15. DIST WOMEN KABADDI Championship, KHAMMAM held at DSA Stadium on 25-11-2015 SFFI-U/19KABADDI(B&G) National championship 2015-16 held at Suryapet, Telangana state from 14-10-15 to 18-10 15. 61st SGFI TS U/14KABADDI(B&G) State Championship 2015-16 held at DSA Grounds MEDAK from 28-11-15 to 30-11-2015.61st u/14 NS KABADDI(B&G) Championship held at PENDRA,BILLASPUR, CHATTISHGARH from 22-1215 to 26-12-15.MANDAL RGKA KABADDI MEET(b&g) held at Chandrugonda on 15-12-15 and DISTRICT RGKA KABADDI MEET held at khammam on 19-12-2015. This study delimited to among the selected In-service physical education teachers, physical directors and coaches who have participated in various level school Games Federation District, state, National level KABADDI competitions as well As KABADDI ASSOCIATION sub-junior, junior and senior kabaddi tournaments and also universities, Invitation kabaddi meets in Telangana Districts.

REVIEW OF RELATED LITERATURE:

Research has great scope in the field of physical education and sports. It measures the teacher training in physical education potential. The researcher was not simply an observer , but in fact, was an integral part of the process. The present Research based on the content of kabaddi coach to solve in to the standard social science research model applies the findings of research to a specific PRACTICAL teaching situation. The Developmental Research focuses on the invention and improvement of creative approaches to enhancing human communication, learning performance and the use of technology and theory of kabaddi sport as optional subject from primary to higher education and participates the modern Olympic games 2020.

CHARACTERISTICS OF KABADDI TRAINING

Kabaddi coaching has a balanced plan focuses on the major physical and tactical components of training ; endurance capacity, muscular strength, oxygen intake, individual and team tactics strategies and course knowledge. Training bout and work out are combined and repeated uninterrupted physical activity. Kabaddi training is complex behaviour, individualistic, performance oriented and based on Educational process and also helps in

confidence building. PRINCIPLES OF KABADDI TRAINING: GENERAL PRINCIPLES AND INDIVIDUALISTIC PRINCIPLES. General principles include adaptation, overload, progression, specificity, use and disuse. Individualistic principles are based on individual differences as follows

Aged/ new players need more recovery time than younger/trained players. Fast twitch muscle fibres recover quicker than slow twitch muscle fibres. Women / girl need more recovery time than men / boy. Large muscles heal slower than smaller muscles. Fast/explosive movements require more recovery time than slow movements. Heavier load lifted muscles will take recovery longer time.

TRAINING LOAD, PERIODIZATION, TRAINING METHODS: continuous method, Interval method, Fartlek (speed play) method / training programmes to enhance skill, circuit training, stage training, strength development programmes- free/fixed weight exercises, sets/ repetitions/ Resistance exercises, weight training programmes- Isotonic/ Isometric/ Isokinetic weight programmes, Flexibility enhancing programmes- active/ passive/static stretching programmes. Proprioceptor neuromuscular facilitation(PNF) programme. Normal amount of exercise will maintain the current fitness level. Periodization is most commonly used for elite kabaddi players to enhance kabaddi performance (anecdotal evidence). TECHNICAL AND TACTICAL PREPARATION FOR KABADDI PLAYERS. For long term as well as short term objectives should be drawn in the training schedules of micro, meso plans, macro plans cycles in to consideration the phase of development. PREPARING A PLAN-CLASSIFICATION OF SKILLS- speed, endurance, strength, agility, flexibility and coordination i.e Motors skills, perceptual motor skills, cognitive skills, perceptual skills. TOOLS OF TEACHING SKILLS ; Verbal instructions, Demonstration, video, Diagrams, Photo Sequencies. GOAL SETTING- The simple formula for goal setting is given by smarter and scamp implies SMARTER IS goals must be Specific(S),training targets should be Measurable(M), goals should be Adjustable(A), goals must be Realistic (R), training targets must be Time based(T), goals should be Challenging and Exciting (E), goals should be Recorded(R). SCCAMP IS goals must be Specific(S), with in the Control of the athlete(C), goals are Challenging(C), goals must be Attainable(A), training targets should be Measurable(M), goals are Personal(P). LEARNING STAGES- Cognitive stage, Associative stage, Autonomous stage, basic principles of fitness training is FITT- F-Frequency-how often, I- Intensity- how hard , T- Time- how long, T- Type-the type of training (strength, endurance, agility). TECHNIQUE DRILLS – These drills used to correct faults. Faults can be caused by In correct understanding of the movement by the player, poor physical abilities, poor co-ordination of movement, Incorrect application of power, lack of concentration, Inappropriate clothing or footwear, external factors, e.g, weather conditions. assessment or measurement is a most important to evaluate their own performance. Whether the basics are correct or not, whether the direction of the movement is correct or not, whether the rhythm is correct or not. SHORT TERM TRAINING PLANS AND LONG TERM TRAINING PLANS Phases in STTP, COMPETITION CALENDER PERIODISATION / TOP FORM consist of three major phases; preparatory, competitive and transition. Accumulation, Intensification, Transformation, , Peaking and Transition.

KABADDI COACHING CONTENT AND PRACTICAL PART-I AN INTRODUCTION TO KABADD, CHAPTER-1 ORIGIN, HISTORY AND DEVELOPMENT, CHAPTER-2 RULES AND REGULATIONS OF KABADDI, CHAPTER-3 THE PLAYFIELD- ITS MAINTENANCE. PART-II THE BASIC FUNDAMENTAL SKILLS AND TEAM SELECTION IN KABADDI, CHAPTER- 4 MEANINGS, DEFINATIONS, NATURE ,SCOPE OF KABADDI, CHAPTER- 5 STTP AND LTTP SELECTION,PART – III THE BASIC S OF OFFENSE/ATTACK SKILLS IN KABADDI,CHAPTER-6 THE RAID- ITS MECHANISM, CHAPTER- 7 RAIDING FOOT WORK, CHAPTER- 8 OFFENSE DRILLS FOR TRAINING IN KABADDI, CHAPTER-9 FUNDAMENTAL RAIDING SKILLS PART-IV THE BASICS OF DEFENCE IN KABADDI, CHAPTER-10 DEFENCE IN KABADDI,CHAPTER-11 POSITIONS OF PLAYCHAPTER-12 FUNDAMENTAL DEFENCE SKILLS, PART-V ADVANCED SKILLS, CHAPTER-13 ADVANCED SKILLS IN DEFENCE, CHAPTER-14 ADVANCED AND COUTER SKILLS IN ATTACK, PART-VI TACTICS AND STRATEGIES ,CHAPTER-15 PRE REQUISITIES FOR TACTICS AND STRATEGY, CHAPTER-16 RAIDING TACTICS AND TSRATEGY, CHAPTER-17 TACTICS AND STRATEGIES IN DEFENCE, CHAPTER-18 SYSTEMS OF PLAY IN DEFENCE, PART-VII FITNESS, CHAPTER- 18 WARMING UPAND TYPES, CHAPTER-19 PHYSICAL FITNESS, PART-VIII TRAINING METHODS, CHAPTER-20 PLANING AND PERIODIZATION, CHAPTER-21 MODEL TRAINING SCHEDULES, CHAPTER-22 PSYCHOLOGICAL PREPARATION PART-IX COMPETITION, CHAPTER-23 ORGANIZATION OF TOURNMENTS. sports training is a complex process of preparation of kabaddi players performance acquisition of technical, tactical and strategies condition for economy and efficiency of micro/ meso cycle and macro cycle training load and adaptation helps prevent accumulation of fatigue. Strength, speed, endurance , flexibility and coordinate abilities. KABADDI COACH : He/ she always has the professional characteristic attributes credibility, dignity, trust, confidence and high premium on motor excellence and achievement of stressful situations in crucial completion.

RESEARCH METHODOLOGY DESIGN AND STATISTICAL ANALYSIS

The descriptive research design was used to achieve qualitative inputs study under report focuses the pilot, mechanical aptitude, observation and questionnaire tool used their professional abilities and consistency of leadership qualities among kabaddi coaches and qualified physical educationists in telangana state. Six variable attributes are innovator, broker, co ordinator, monitor, goal setter/ director , facilitator/ mentor leadership qualities and seven kabaddi coach identification information for specific standards variables learning experience, knowledge of kabaddi content, strategies for environment and management, interpersonal relationship, professional development, institution/ organization development, sports council participation. Research focuses present scenario of kabaddi pedagogy like PRO KABADDI LEAGUE. The sample of kabaddi competitions district/ state/ national participated subjects among physical educationist coaches in telangana districts as well as representative of coach/ manager different SGFI/ RURAL/ ASSON state teams . Further sub division of the sample was done as male , female, NSNIS, DIPLOMA, BACHOLOR,

MASTER qualified kabaddi physical educationists and also players selected Restricted systematic random sampling from various teams varying age coaches 35-55 years and players 14- 28 years. The study was administrated individually to each subject through email survey and group interviews /observation By self assessment questionnaire on pedagogy of kabaddi coaches leadership qualities and specific standards of teacher performance. This study contributed to new grounds for research on kabaddi excellence. STATISTICAL TECHNIQUES OF DATA ANALYSIS, MEASURES OFCENTRAL TENDENCY AND RELATIONSHIP- MEAN, MEDIAN, MODE, MEASURES OF VARIATION/ DISPERSION- RELATIONSHIP - RANGE, QUARTILE DEVIATION, MEAN DEVIATION, STANDARD DEVIATION, CORRELATION- KARLPEARSONS CO-EFFICIENT, RANK DIFFERENCES.T-TEST, F-TEST, CHI-SQUARE TEST,Z-TEST,SIGNIFICANT LEVEL etc. DATA ANALYSIS, TABLES, CHARTS, PILOT STUY, FINDINGS, DISCUSSIONS, SUGGESSIONS AND RECOMANDATIONS DRAWING SHOULD BE FINALISED IN Ph.D. THESIS.

CONCLUSIONS:

The Government of Telangana must be bringing in the new sports policy with administrative reforms in school education as well as university D.P.Ed/ B.P.Ed/ M.P.Ed TEACHER TRAINING. The study is to determine the significant difference between NSNIS DIPLOMA COACHING AND Physical education kabaddi coaches in relation to their pedagogy on leadership qualities and teacher specific standards in telangana state. Till 2015 no college or university offered satisfactory kabaddi coaches training opportunities and facilities of high level coaching programmes in physical education deportment in telangana state. The organizers of kabadi tournaments must cater to a special award for the best coach to take more interest in the professionalism of play and management. The Govt/ Education Dept authorities conduct the academic refresher course, clinics for improvement of precise knowledge of teaching and coaching kabaddi. NCTE/ UGC/ NAAAC/ NCERT/SCERT GOVT AUTHORITIES must be given popularise physical education curriculum as evaluation subject for growth / development of pedagogy on sports and games / kabaddi coaches systematic training programme attributed not only towards the enhancement of coaches performance And attain recognition as a subject in the educational institution. To be constructed the Board of Physical Education coaches and TECHNICAL OFFICERS under the Olympic association and higher education supervision must be collaborate the budget / functions of the management / organization of standard competitions in academic calendar of school/college/ youth formal and non formal i,e Rural/ amateur tournaments in Telangana state. ToEnsure better coaching facilities in TELANGANA UNIVERSITIES, the Institute SAI NS NIS has set up academic session in collaboration towards Promotion and awareness of sports.

A STUDY ON COMPARISON OF EXPLOSIVE STRENGTH BETWEEN VOLLEYBALL AND FOOT BALL PLAYERS OF G.K.C.P.E NALGONDA.

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INTRADUCTION:

EXPLOSIVE STRENGTH: The property of being physically or mentally strong, "fatigue sapped his strength" capability in terms of personnel and material that effect the capacity to fight a war. We faced an army of great strength, politicians are neglected out military posture" physical energy of intencity. He hit with all the forse he could muster. It has destroyed by the strength of the gayle. " a government has not the vitality and forcefulness of a living man". Independent of those local circumastances which tend to beget and increase power in one part and to impede its progress in another. We must advert to the effects of that supervisor policy and good management which would probably distinguish the government of one above the rest, and by which their relative equality in strength and concedaration would be destroyed.

HYPOTHESIS: It was hypothesized that the foot ball players may have better then volley ball players.

DELIMITATION: The subjects were selected at random from GOPALA KRISHNA COLLEGE OF PHYSICAL EDUCATION, NALGONDA. The test administrated for on ten volleyball and ten foot ball players with in the age group of 16-22.

LIMITATION: As a matter of convenience and because of time of limitations, this study was conducted only on ten volley ball and ten foot ball players from GKCPE NALGONDA students.

METHODOLOGY: The purpose of study was to comparison selection on physical fitness competition of college level volleyball and foot ball players in order to achieve this purpose, ten foot ball players and ten volley ball players from GKCPE NALGONA.

EXPERIMENTAL DESIGN: For this study was to comparison selection on physical fitness competition of college level volleyball players and foot ball players in order to achieve this purpose, ten foot ball players and ten volley ball players from GKCPE UGDPED COLLEGE NALGONDA.

TEST ADMINISTRATION

STANDING BROAD JUMP: At the whistle, subject is made is to jump from the starting long jump pit the finish the jump and taken the measurement the tape. A space on the floor or an outdoor long jump pit.

STATISTICAL TECHNIQUES: As following statistical procedures were following to find out selected physical fitness components between the volley ball players and foot ball players among physical education college GKCPE . The research scholar used t-ratio calculate the significance.

PRESENTATION AND INTERPRETATION OF DATA: The test conducted by selecting ten volley ball players for physical education college GKCPE from NALGONDA and ten foot ball players from GKCPE COLLEGE, NALGONDA. The data was collected by conducting explosive strength. The collected data were subjected to the t-ratio test of analyses for significance.

RESULTS AND DISCUSSIONS

TABLE-1
Explosive strength test (standing broad jump)
THE MEAN, STANDARD DEVIATION, OF THE MEAN AND T-RATIO OF VOLLEY BALL AND FOOT BALL PLAYERS AMONG GKCPE PHYSICAL EDUCATION COLLEGE FROM NALGONDA.

TEAM	VARIABLE	NUMBER OF STUDENT	MEAN	STANDARD DEVIATION	T-RATIO
Volley ball players	Explosive strength	10	1.801	0.090	2.787
Foot ball players	Explosive strength	10	1.713	0.0416	2.787

0.05 level of confidence

DISCUSSION OF FINDINGS: The table shows that the difference between the mean in being volley ball players and foot ball players mean when the standard deviation difference

between the wars the calculation of t-ratio (2.787) the t-ratio was found to be significance at level of confidence the hypothesis was accepted.

CONCLUSIONS: The following conclusion were made on comparing explosive strength between ten volley ball players and ten foot ball players. It was find out the foot ball players had better then explosive strength volley ball players in college GKCPE.

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